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- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

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- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

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# PUBLIC POLICIES, BUSINESS ENVIRONMENT, AND ECONOMIC GROWTH IN DEVELOPING COUNTRIES

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**ABSTRACT**

*This paper examines the impact of public policies and the business environment on economic growth in developing countries. Based on data from the World Bank for the 2000-2011 period and a sample of fifty-six developing economies we find that the growth rate of per capita GDP is dependent on a country's economic management, its structural policies, its policies for social inclusion and equity, the number of procedures to build a warehouse, and the cost of starting a business as a percent of per capita income. We observe that the coefficient estimates of two explanatory variables, namely, the structural policies average and the number of procedures to build a warehouse, do not have their expected sign, possibly to the collinearity between the structural policies average variable and the economic management average variable as well as the policies for social inclusion and equity average variable. On the other hand, the cost of starting a business as a percent of per capita income is not significant using the t-test. We suspect that this is also due to the collinearity between this variable and three policies variables. Statistical results of such empirical examination will assist governments in developing countries focus on appropriate policies dealing with economic management, those of a structural nature, and those for social inclusion and equity while recognizing the importance of a good business environment in order to foster economic growth.*

**JEL CLASSIFICATIONS**
O12, O15, O40

**KEYWORDS**
Doing Business Indicators, Public Policies and Institutions, Per Capita GDP Growth, Developing Countries.

## I. INTRODUCTION

This study empirically examines the impact of public policies and the business environment on economic growth. According to the *2013 World Development Report: Jobs*, while the key engine of job creation is the private sector, being responsible for 90 percent of all jobs in the developing economies, governments also play a crucial role in ensuring that the conditions are present for robust private sector-led economic growth and in easing the constraints that prevent the private sector from creating good jobs for growth. The Report identifies the first stage in the approach to assist government meet these goals as policy fundamentals which include, among other things, macroeconomic stability and a business environment conducive to investment and hence to growth.

This paper attempts to estimate the impact of public policies and the business environment on economic growth. Based on data from the World Bank for the 2000-2011 period and a sample of fifty-six[i] developing economies we find that the growth rate of per capita GDP is dependent on a country's economic management, its structural policies, its policies for social inclusion and equity, the number of procedures to build a warehouse, and the cost of starting a business as a percent of per capita income. We observe that the coefficient estimates of two explanatory variables, namely, the structural policies average and the number of procedures to build a warehouse, do not have their expected sign, possibly to the collinearity between the structural policies average variable and the economic management average variable as well as the policies for social inclusion and equity average variable. On the other hand, the cost of starting a business as percent of per capita income is not significant using the t-test. We suspect that this is also due to the collinearity between this variable and three policies variables. Statistical results of such empirical examination will assist governments in developing countries focus on appropriate policies dealing with economic management, those of a structural nature, and those for social inclusion and equity while recognizing the importance of a good business environment in order to foster economic growth.

This paper is organized as follows. In the next section, a selected review of the economic literature on the effect of institutions and business environment on economic growth is discussed. This is followed by the formulation of a statistical model to be estimated. Theoretical underpinnings for the inclusion of explanatory variables are presented in this section. Statistical results are reported in the subsequent section. A final section gives concluding remarks as well as policy recommendations.

## II. SELECTED REVIEW OF THE LITERATURE

Much of the research on identifying the key determinants of economic growth in developing countries recently points to differences in underlying public policies and institutions as the main factor. Empirical studies have used a myriad of variables as proxies for institutions, which include measures of the risk of expropriation, the limits to the power of the executive branch and the power of the rule of law (see, for example, Hall and Jones (1999) and Acemoglu, Johnson and Robinson (2001)). Frankel and Romer (1999), on the other hand, identify as a primary factor of economic development as measured by per capita income specific economic policies such as the extent to which a country is open to international trade, while Gallup, Sachs and Mellinger (1999) attribute development to geographical determinants such as differences in climate and coastal access.

Using instrumental variable regressions, Rodrik, Subramanian and Trebbi (2004) evaluate the main competing explanations, namely good institutions and good economic policies as well as geography and show that institutions measured as a variable defining the strength of the rule of law are dominant relative to both economic policy measured as the degree of openness to international trade and geography in terms of explaining cross-country variations in per capita income levels. Glaeser, La Porta, Lopez-de-Silanes, and Shleifer (2006), however, revisit the issue of whether political institutions lead to economic growth or growth and human capital accumulation cause to better institutions. They argue that most indicators of institutional quality are conceptually unsuitable for being used in explaining growth and also find flaw in some of the instrumental variable techniques used in the literature. Their basic OLS results suggest that education levels are a more basic source of growth rather than institutions. Djankov, McLiesh, and Ramalho (2006) use objective measures of business regulations in 135 countries find a positive relationship between better regulations as measured by the Doing Business indicator and economic growth.

More recently, Gillanders and Whelan (2010) argue that the emphasis on the primacy of legal and political institutions may be misleading and argue that business-friendly economic policies as proxied by the World Bank's Doing Business indicator are the main factor contributing to cross-country differences in per capita income levels. They find that the Doing Business rank is dominant over a range of measures of legal and political institutional quality in terms of explaining variations in per capita income. They also find the rank to be statistically significant in explaining cross-country differences in economic growth while observing that the significant role of educational attainment as found by previous studies is not supported when the rank is included in their growth regressions.

Building upon the first stage in the approach to help governments in developing countries meet the objectives of both insuring that the conditions are present for robust private sector-led growth and easing the constraints that prevent the private sector from creating good jobs for development, namely policy fundamentals that include sound policies and an enabling business environment, we next specify a statistical model relating public policies and business environment to the growth of per capita income. Empirical results are presented in a subsequent section. The final section gives concluding remarks as well as policy implications.

## III. THE STATISTICAL MODEL

Following Djankov, McLiesh, and Ramalho (2004) and Gillanders and Whelan (2010), we use the World Bank's Doing Business indicators as proxies for business-friendly economic policies (also referred to as objective measures of business regulations)[ii]. To estimate the impact of public policies and institutions on economic growth we shall make use of the criteria set out by the World Bank Group's International Development Association (IDA). This organization helps the poorest countries reduce their poverty level by giving concessional loans and grants for those programs designed to foster economic growth and raise living standards. It assesses a country's performance using a set of 16 criteria that are grouped into four clusters: economic management, structural policies, policies for social inclusion and equity, and public sector management and institutions. Each criterion is rated on a scale ranging from 1 (low) to 6 (high). The economic management cluster includes the following criteria: macroeconomic management, fiscal policy, debt policy. The criteria which make up the structural policies cluster are: trade, financial sector, and business regulation environment. The policies for social inclusion and equity cluster includes the following criteria: gender equality, equity of public resource use, building human resources, social protection and labor, and policies and institutions for environmental sustainability. The criteria which make up the public sector management and institutions cluster are: Property rights and rule-based governance, quality of budgetary and financial management, efficiency of revenue mobilization, quality of public administration, and transparency, accountability, and corruption in the public sector. Rather than using every one of these 16 criteria as explanatory variables we choose to include the average score for each cluster.

To estimate the impact of public policies, institutions, and the business environment on economic growth we specify the following statistical model[iii]:

$$y_{pc} = \beta_0 + \beta_1 PubMgt + \beta_2 SocIncEq + \beta_3 EcnMgt + \beta_4 StrlPol + \beta_5 CnstNum + \beta_6 CnstDays$$

$$(+) \quad (+) \quad (+) \quad (+) \quad (-) \quad (+)$$

$$+ \beta_7 CntrctNum + \beta_8 Cntrct\ Days + \beta_9 InsolDays + \beta_{10} RegNumb + \beta_{11} RegDays$$

$$(-) \quad (-) \quad (-) \quad (-) \quad (-)$$

$$+ \beta_{12} StartNumb + \beta_{13} StartDays + \beta_{14} StartCost + \beta_{15} ElectDays + \beta_{16} DiscIndx + \epsilon \quad (1)$$

$$(-) \quad (-) \quad (-) \quad (-) \quad (+)$$

where $y_{pc}$ = Average annual growth rate of per capita GDP, 2000-11.
*PubMgt* = Public sector management and institutions average, rated on a scale of 1 (low) to 6 (high), in 2010.
*SocIncEq* = Policies for social inclusion and equity average, rated on a scale of 1 (low) to 6 (high), in 2010.
*EcnMgt* = Economic management average, rated on a scale of 1 (low) to 6 (high), in 2010.
*StrlPol* = Structural policies average, rated on a scale of 1 (low) to 6 (high), in 2010.
*CnstNum* = Number of procedures to build a warehouse, in June 2011.
*CnstDays* = Time required to build a warehouse, in days, in June 2011.
*CntrctNum* = Number of procedures to enforce contracts, in June 2011.
*Cntrct Days* = Time required to enforce contracts, in days, in June 2011.
*InsolDays* = Time required to resolve insolvency, in days, in June 2011.
*RegNumb* = Number of procedures to register a property, in June 2011.
*RegDays* = Time required to register a property, in days, in June 2011.
*StartNumb* = Number of procedures to start a business, in June 2011.
*StartDays* = Time required to start a business, in days, in June 2011.
*StartCost* = Cost of starting a business as a percent of per capita income, in June 2011.
*ElectDays* = Time required to get electricity, in days, in June 2011.
*DiscIndx* = Disclosure index, from 0-10 (least to most disclosure), in June 2011.

We use the 2000-2011 per capita GDP growth rate at market prices based on constant local currency for $y_{pc}$. We expect the coefficient estimates for all four public policies and institutions variables to have a positive sign. On the other hand, with the exception of the disclosure index variable, we expect the coefficient estimates for all other Doing Business indicators to have a negative sign.

Data for all variables are from the *2012* and the *2013 World Bank Indicators.*

## V. EMPIRICAL RESULTS

Table 1 gives least-squares estimates of regression coefficients in equation *(1)* for a sample of fifty-six developing countries. We observe that three of the explanatory variables are statistically significant at the 10 percent or lower level and only eight coefficient estimates do have their anticipated sign. The goodness of fit of the model is quite good as indicated by the value of 0.455 of the regular coefficient of determination. However, the low value of the adjusted coefficient of determination (0.231) suggests that many explanatory variables are not significant and must be removed from the statistical model.

**TABLE 1 – DEPENDENT VARIABLE: PER CAPITA GDP GROWTH RATE**

| | *Coefficient Estimates* | *t-Statistics* |
|---|---|---|
| *Intercept* | -7.641 | -1.100 |
| *PubMgt* | -1.924 | -0.995 |
| *SocIncEq* | 3.041 | 1.876** |
| *EcnMgt* | 1.723 | 1.646* |
| *StrlPol* | -1.056 | -0.747 |
| *CnstNum* | 0.132 | 1.733** |
| *CnstDays* | -0.0009 | -0.293 |
| *CntrctNum* | 0.060 | 0.714 |
| *InsolDays* | 0.124 | 0.383 |
| *RegNumb* | 0.057 | 0.275 |
| *RegDays* | -0.004 | -0.473 |
| *StartNumb* | -0.109 | -0.653 |
| *StartCost* | -0.007 | -1.231 |
| *StartDays* | 0.015 | 0.834 |
| *ElectDays* | -0.003 | -0.700 |
| *DiscIndx* | 0.067 | 0.265 |
| *CntrctDays* | 0.0005 | 0.346 |

$R^2 = 0.455$
Adjusted $R^2 = 0.231$
*Significant at the 10 percent level.
**Significant at the 5 percent level.

All else equal, a one-index point increase in the policies for social inclusion and equity average is expected to lead to a 3.04 percentage point increase in per capita GDP growth. On the other hand, as the economic management average increases by one index point, we expect per capita GDP growth rate to increase by 1.72 percentage points, ceteris paribus.

A backward elimination stepwise method was applied to arrive at a revised model, the regression results of which are reported in Table 2. We note that the goodness of fit of the model to the data is better as indicated by the higher value of 0.337 of the adjusted coefficient of determination.

**TABLE 2 – DEPENDENT VARIABLE: PER CAPITA GDP GROWTH RATE (REVISED MODEL)**

| | *Coefficient Estimates* | *t-Statistics* |
|---|---|---|
| *Intercept* | -4.964 | -1.537 |
| *SocIncEq* | 2.037 | 1.635* |
| *EcnMgt* | 1.564 | 1.769** |
| *StrlPol* | -1.745 | -1.672** |
| *CnstNum* | 0.145 | 2.375*** |
| *StartCost* | -0.005 | -1.269 |

Adjusted $R^2 = 0.337$
*Significant at the 10 percent level.
**Significant at the 5 percent level.
***Significant at the 2.5 percent level.

We observe that three explanatory variables are statistically significant at the 5 percent or lower level, while the coefficient estimates of two of them do not have their expected sign. Ceteris paribus, as the economic management average increases by one index point, we would expect a country's per capita GDP growth rate to increase by 1.56 percentage point, while a one index point increase in the policies for social inclusion and equity average results in an expected increase of 2.04 percentage points in the per capita GDP growth rate. On the other hand, a one-percentage point increase in the share of the cost of starting a business in per capita GDP leads to an expected decrease of 0.005 percentage point in the per capita GDP growth rate, all else equal.

We suspect that due to the extent of the multicollinearity problem among explanatory variables, some of them are not statistically significant based on t-tests while the coefficient estimates on a few others do not have their anticipated sign. We report this extent in table 3 in the form of a sample correlation coefficient matrix. We observe that the cost of starting a business as a percent of per capita GDP is linearly related to the economic management average, the policies for social inclusion and equity average, and to the structural policies average, while the three policies averages are also linearly correlated with one another.

**TABLE 3 – SAMPLE CORRELATION COEFFICIENT MATRIX**

| | *SocIncEq* | *EcnMgt* | *StrlPol* | *CnstNum* | *StartCost* |
|---|---|---|---|---|---|
| *SocIncEq* | 1 | | | | |
| *EcnMgt* | 0.777 | 1 | | | |
| | **9.066** | | | | |
| *StrlPol* | 0.748 | 0.634 | 1 | | |
| | **8.270** | **6.032** | | | |
| *CnstNum* | 0.083 | -0.017 | -0.042 | 1 | |
| | 0.614 | -0.123 | -0.309 | | |
| *StartCost* | -0.483 | -0.340 | -0.463 | -0.215 | 1 |
| | **-4.048** | **-2.661** | **-3.837** | -1.616 | |

**Note:** Bold t-statistics imply statistical significance at the 10 percent or lower level.

## V. CONCLUSION

In this paper we use an econometric model to examine the effect of the business environment as well as public policies and institutions on economic growth using data from a sample of fifty-six developing economies. From the statistical results we are able to draw the following conclusions:

1. Within the set of fifty-six developing economies used in this study, three out of four World Bank's public policies and institutions clusters have a significant impact on economic growth. Governments in these countries need to have in place structural policies, as well as those that address economic management and social inclusion and equity, in order to facilitate economic growth.
2. Governments in developing countries need to provide an enabling business environment to encourage further growth.

## NOTES

[i] The sample consists of the following countries: Algeria, Angola, Armenia, Azerbaijan, Bangladesh, Benin, Bolivia, Bosnia and Herzegovina, Burkina Faso, Cambodia, Cameroon, Central African Republic, Chad, Democratic Republic of Congo, Republic of Congo, Côte d'Ivoire, Ethiopia, The Gambia, Georgia, Ghana, Guinea, Haiti, Honduras, India, Kenya, Kosovo, Kyrgyz Republic, Lesotho, Liberia, Madagascar, Malawi, Mauritania, Moldova, Mongolia, Mozambique, Nepal, Nicaragua, Niger, Nigeria, Pakistan, Papua New Guinea, Rwanda, Senegal, Sierra Leone, Sri Lanka, Sudan, Tajikistan, Tanzania, Togo, Uganda, Uzbekistan, Vietnam, Republic of Yemen, Zambia, and Zimbabwe.

[ii] We also included the World Bank's enterprise surveys as measures of the business environment in an earlier econometric model but found these to be statistically insignificant and thus chose to remove them from the model. These results are available from the author upon request.

[iii] In an earlier model, we included the share of gross capital formation (formerly known as gross domestic investment) in the GDP, the share of public health expenditures in total health expenditures used as a proxy for investment in human capital, trade openness measured as the share of exports and imports in the GDP, net foreign direct investment as a percent of GDP, net official development assistance as a percent of GDP, and the initial (2000) level of real per capita GDP used to capture the tendency for poor countries to grow faster than rich countries (termed β-convergence). We found none of these variables to be statistically significant and thus removed them from the statistical model. These results are available from the author upon request.

## ACKNOWLEDGEMENT

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# NEED OF CORPORATE SOCIAL RESPONSIBILITY EMERGES FROM AN ANALYSIS OF GROSS DOMESTIC PRODUCT WITH RESPECT TO HUMAN DEVELOPMENT INDEX IN INDIA

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**ABSTRACT**

*There is a much debate and on the needs and areas of Corporate Social Responsibility in the management research and practices. While it is argued that only a 'Corporate Social Responsibility' for the organization is to 'maximize the profit' or CSR is believed a 'Tax after Tax', In the present paper authors have tried to analyze the social situation of the country with regards and respect to economic growth. Corporate world plays a vital role in the economic growth of the country, by producing and trading the manufacturing products and services and paying direct and in-direct taxes on the same. Their hard efforts with favorable economical and political situation have made country proud in terms of economic growth rate in terms of GDP, during the last two decades. India has been making sustained progress on a scale, size and pace that is unprecedented in its own history. However, this undisputed record is also accompanied by dismal Human development rankings. Is it all enough that country grows economically in terms of GDP or for the sustainable development society as a whole needs to grow? India has been consistently ranked very low in the measurement of Human Development Index. Present paper is trying to highlight the comparison between GDP growth rate and Human Development Index and urges a need for responsible behavior and Role of Corporate Social Responsibility to bridge the gape between the two in a conceptual manner through the study of secondary data.*

**KEYWORDS**
Gross Domestic Product (GDP), Human Development Index (HDI) , Corporate Social Responsibility.

## 1. INTRODUCTION

Gross Domestic Product (GDP) has been widely debated it has been a popular measure of the National Income and has taken a central space as an important growth indicator. It has been increasingly found that only financial performance measurements are not equate to measure the inclusive growth of the country. It is equally important that the growth brings prosperity to the whole society. Therefore, social growth is also equally important which has been studied with the help of important economic indicators like , Human development index –HDI. In the present paper , an analysis has been made of India's performance of GDP and HDI for a particular time period. Paper also tries to explain the concept of Corporate Social Responsibility and urges the need of Corporate Social Responsibility based on the analysis of GDP and HDI of India.

## 2. RESEARCH METHODOLOGY

The present paper is a conceptual paper tries to explain the economic concepts like Gross Domestic Product (GDP) , Human Development Index (HDI) and Corporate Social Responsibility (CSR). In the paper it has been attempted to built an interlink among these three concepts. For the study secondary data of India's GDP and HDI has been reviewed and analysis has been made based on the secondary data survey. Secondary data regarding GDP and HDI of the various other developed and developing nations from the different part of the world has also been taken in to the account.

## 3. LITERATURE REVIEW

In the present research paper literature review pertaining to the GDP , HDI and CSR has been carried out and the same has been defined conceptually.

**(I) GROSS DOMESTIC PRODUCT (GDP)**

Gross Domestic Product (GDP) a macroeconomic term used to measure economical health of the country does not need much introduction, since it has been one of the most important economic parameter measures financial health of the country. GDP as per the definition is :

"Gross domestic product (GDP) refers to the market value of all officially recognized final goods and services produced within a country in a given period. GDP per capita is often considered an indicator of a country's standard of living; GDP per capita is not a measure of personal income. See Standard of living and GDP. Under economic theory, GDP per capita exactly equals the gross domestic income (GDI) per capita." (1)

GDP can be determined in three ways, all of which should, in principle, give the same result. They are the product (or output) approach, the income approach, and the expenditure approach.

The most direct of the three is the product approach, which sums the outputs of every class of enterprise to arrive at the total. The expenditure approach works on the principle that all of the product must be bought by somebody, therefore the value of the total product must be equal to people's total expenditures in buying things. The income approach works on the principle that the incomes of the productive factors ("producers," colloquially) must be equal to the value of their product, and determines GDP by finding the sum of all producers' incomes. (2)

Mathematically it has been explained as:

*GDP = private consumption + gross investment + government spending + (exports − imports),*

"Gross" means that GDP measures production regardless of the various uses to which that production can be put. Production can be used for immediate consumption, for investment in new fixed assets or inventories, or for replacing depreciated fixed assets. "Domestic" means that GDP measures production that takes place within the country's borders. In the expenditure-method equation given above, the exports-minus-imports term is necessary in order to null out expenditures on things not produced in the country (imports) and add in things produced but not sold in the country (exports).

**(II) HUMAN DEVELOPMENT INDEX (HDI)**

It's not only important that the country grows economically but it is extremely important that the growth be inclusive among all the classes of the society and ultimately society grows along with the economy of the country. Macroeconomics also measure the health of the society with various indexes like Human Development Index, Corruption Index , Sex ratios , Children Health etc. For the comparison purpose of the health of society and economic growth in the present paper we have restricted the study to the comparison to the Human Development Index. (HDI)

The Human Development Index (HDI) is a composite statistic used to rank countries by level of "human development", taken as a synonym of the older term standards of living or Quality of life, and distinguish "very high human development", "high human development", "medium human development", and "low human development" countries. HDI was devised and launched by Pakistani economist Mahbub ul Haq and Indian economist Amartya Sen in 1990. The Human Development Index (HDI) is a comparative measure of life expectancy, literacy, education, and standards of living for countries worldwide. It is a standard means of measuring well-being, especially child welfare. It is used to distinguish whether the country is a developed, a developing or an under-developed country, and also to measure the impact of economic policies on quality of life. There are also HDI for states, cities, villages, etc. by local organizations or companies.

**DIMENSIONS OF HDI**

Starting with the 2011 Human Development Report the HDI combines three dimensions:

- A long and healthy life: Life expectancy at birth
- Education index: Mean years of schooling and Expected years of schooling
- A decent standard of living: GNI per capita (PPP US$)

As per the 2011 HDI report – Europe and European countries leads as a quotient in having very high HDI index rating followed by North America. (3)

| Very High HDI Nations, by population size – A 2011 HDI Report | |
|---|---|
| Europe | 489.0 |
| N. America | 325.0 |
| Asia | 205.1 |
| S. America | 58 |
| Oceania | 25.8 |

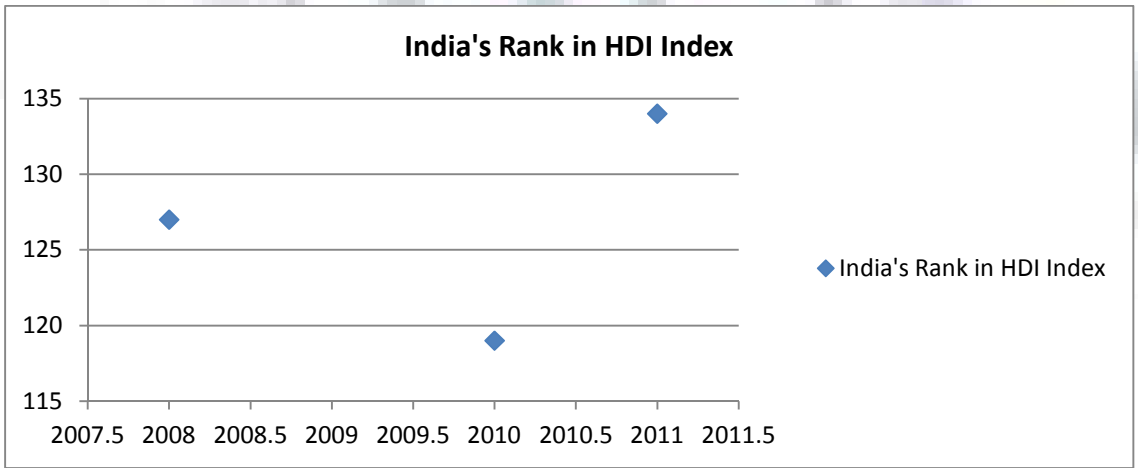
## 4. DATA ANALYSIS OF GDP VS. HDI IN INDIA

### (I) GDP GROWTH AND GROWTH RATE

There is must talk about the behavior of Indian economy post liberalization policies in 1992 and growth story in last two decades has been noticed by the world and has established India in the race of fasted growing economy with China. As shown in the trend analysis below Indian economy has grown from close to 10,000,000 millions of Indian Rupee to 70,000,000 during the times span from 1995 to 2010. Even during the phase of US sub-prime crisis and world economic recession phase from 2007 to 2010, Indian economy has been performing well and growing staidly at close to 8 to 9% GDP growth rate. (4)


### (II) HDI PERFORMANCE

India ranks a low 134 among 187 countries in terms of the human development index (HDI), in the year 2011 which assesses long-term progress in health, education and income indicators, said a United Nations report 2011. Although placed in the "medium" category, India's standing is way behind scores of economically less developed countries, including war-torn Iraq as well as the Philippines. India's ranking in 2010 was 119 out of 169 countries. Sri Lanka has been ranked 97, China 101 and the Maldives 109 has been placed far ahead of India with regards to the countries performing in Asia.




Pakistan and Bangladesh are ranked 145 and 146 in the list of countries that is headed by Norway and in which the Democratic Republic of Congo is at the very bottom. (5)

| Country | | HDI Index. |
|---|---|---|
| 1. | Norway | 0.943 |
| 2. | Australia | 0.929 |
| 3. | Netherlands | 0.910 |
| 4. | United States | 0.910 |
| 5. | New Zealand | 0.908 |
| 6. | Canada | 0.908 |

**(III) ANALYSIS**

In Human Development Index performance this is undisputed that India has been consistently ranked very low. (In 2008, it held 128th, behind Palestine, Iran, Congo, Botswana and Srilanka).Sri Lanka has been ranked 97, China 101 and the Maldives 109 has been placed far ahead of India with regards to the countries performing in Asia. According to the "UN Human Development Report 2011: Sustainability and Inequality", India's HDI is close to 0. 57 compared to 0.9 plus in the developed nations of the world like Norway , Australia, Netherlands, United States, New Zealand and Canada, as stated below:

High GDP growth rate has resulted in increased disposable income in certain sections of society, not necessarily all the sections; and more availability of money for Indian government to spend, not necessarily more purchasing power. Firms employ separate accounts for benefits (revenues) and costs (outlays). The GDP, how-ever, adds benefits and costs together.

According to Stiglitz, "No one would look at just a firm's revenues to assess how well it was doing. Far more relevant is the balance sheet, which shows assets and liabilities. That is also true for a country." An additional shortcoming is that GDP covers the costs of the provision of certain public goods, such as national defense, even though it is evident that the costs of public goods cannot serve as an adequate measure of the benefits associated with these goods.

According to the 2009-10 financial budget figures, India plans to spend officially $29.52 billion for defence and its allied sector. In India's $1.2 trillion GDP, at least $29.52 billion have no direct bearing or less bearing on social welfare of citizens on that accounting year. Finally, many private goods show diverging private and social costs because of all kinds of market failure, including imperfect competition, price agreements and technical-physical externalities.

Their actual benefits or real welfare effects are unobserved, that is, not measured by means of GDP. As an implication, GDP growth should not be considered as an indicator of progress, but as a reflection of increasing costs of economic change (whether progress or decline). This explains why GDP and welfare growth do not necessarily coincide.

In summation, observation at both the numbers such as GDP growth and HDI rankings together reflects a less ideal picture of shining India and reality is much observed with respect to social development and that is disappointing.

It is necessary to right emphasis the scope of greater generic indicators like GDP and HDI, and also equally necessary to acknowledge the fact that they are just necessary conditions, and not sufficient conditions. So, higher GDP and lower HDI, without development means very little to the population of 1.2 billion.

Every effort has to be made to make sure that higher growth is achieved and also the objective growth of growth, which is human race development, is attained.

## 5. CORPORATE SOCIAL RESPONSIBILITY A – TOOL FOR BETTER HDI

In a battle of good economic growth against the poor performance of Human Development index only Government efforts might not be adequate and enough. Does corporate involvement in social issues and societal development will help the nation in improvement? Or in improving Human Development Index? It might be to early to respond to this but however, let's have a look on what corporate social responsibility is all about and how can it help in the improvement of HDI?

CSR in the modern phase has been an important academic and research concept other than just the philosophical view or spiritual activity. In modern business it is a central concept of strategic management, it has remained so, because business have realized that their sustainable growth is impossible without the growth of the society and the stake holders of business . In support to the above argument here, some of the examples of the views about the CSR of various business leaders and political leaders or academicians have been presented in brief which have evolved over a different time period..

**Brown and Dacin (1997)** defined CSR in their research paper as, **"**CSR is a companies status and activities with respect to it's perceived societal obligations." (6)

CSR has also been defined and understood by World **Bank Ltd. (1998)** as , "Social Responsibility is a practice of matching companies with the rest of society. Corporate citizens are engaging in the partnerships for the conman welfare of all over the world." (7)

**Warhurst (2001)** attempted to link the CSR as a part of business strategy, stated "A strategy of CSR is defined as the internationalized by the company of the social and environmental effects of it's operation through proactive pollution prevention and social impact assessment so that harm is anticipated and avoided and benefits optimized." (8)

**CII (Confederation of Indian Industry ) has understood CSR as (2005)** "Continuing commitment by business to behave ethically and contribute to economic development while improving the quality of work force and their families as well as the local community and society at large." (9)

**Mr.Y.C.Deveshwar, VP (CII), (2005.)** "Business is very important in alleviating people from their poverty. The humanity in us tells us that there is a crisis and hence we need to get our economic engines to generate wealth for the weaker sections of the society." (10)

**Mr. Arun Maira - BCG Group, (2005)** " Corporations are the engines of the growth in an economy and they should emphasize on the freedom for the people at the bottom of the pyramid by engaging them in the economic growth process." " With a diversified country like India , we need to get measures of our economy, social health and environmental quality. (11)

**Mr. Kumarmangalam Birla (CMD Aditya Birla Group , 2006)** The days are long past when business of the business was just business. The idea that corporation is merely a legal abstraction . devoid of heart and soul ,no longer has legitimacy. Today , no stakeholder – be it a share holder , an employee , the community or the government – would accept a business whose rationale is limited to profits at any cost, or only to compulsions of its immediate business. (12)

**Prime Minister Dr Manmohan Singh (2007 –CII Meet)** "If those who are better off do not act in a more socially responsible manner, our growth process may be at risk, our polity may become anarchic and our society may get further divided...I invite corporate India to be a partner in making ours a more humane and just society". He has also given ten point notes to the corporate leaders like ; One, have healthy respect for your workers and invest in their welfare ; Two, corporate social responsibility must not be defined by tax planning strategies alone ; Three, industry must be proactive in offering employment to the less privileged, at all levels of the job ladder ; Four, resist excessive remuneration to promoters and senior executives and discourage ; Five, invest in people and in their skills ; Six, desist from non-competitive behavior ; Seven, invest in environment-friendly technologies ; Eight, promote enterprise and innovation ; Nine, fight corruption at all levels ; Ten, promote socially responsible media and finance socially responsible advertising. (13)

## 6. LINKAGE OF CSR EFFORTS WITH POOR PERFORMING STATES IN HDI INDEX

India is widely spread nation with different natural resources and geography in each state. During the last two decade some state have grown at higher GDP and HDI rates and some have not been, much depended on the historic political situation, population and education level of the state . Table below presents the state wise HDI Performance of various states in India.

Noteworthy facts are only the Union territory of Chandigarh and state Kerala are in the ratings of High Human Development zone with their rating over 0.8 and close to the most top performing countries in HDI like Norway, Iceland , US and Canada.

All other states are in either medium HDI zone or Low HDI zone with the face that countries' average is as low as 0.575. States like Bihar , Uttar Pradesh , Orissa , Madhya Pradesh , Rajasthan, Assam, Chhattisgarh, Jharkhand are performing extremely low on the most critical Human Development Index ranging from 0.52 or below. These states needs immediate attention and though the Government is attempting by various governmental efforts towards the improvement of

human life in all these states are not turning out to be enough.

Presented below are the five inspirational cases where Corporate have initiated the cause in these states and have started working with their 'Corporate Social Responsibility' to bridge the gape between the GDP growth rate and HDI in the states indexes.

**HDI – REPORT 2011 –STATES PERFORMANCE OF INDIA**

| *High HDI rating* | | *Medium HDI Rating* | | *Low HDI Ratings.* | |
|---|---|---|---|---|---|
| *0.75 to 1.0* | | *0.55 to 0.75* | | *0.4 to 0.75* | |
| Kerala | 0.920 | Lakshadweep | 0.796 | Uttar Pradesh | 0.490 |
| Chandigarh | 0.892 | Mizoram | 0.790 | Madhya Pradesh | 0.488 |
| | | Delhi | 0.789 | Orissa | 0.452 |
| | | Goa | 0.779 | Bihar | 0.449 |
| | | Nagaland | 0.770 | | |
| | | Andaman and Nicobar Islands | 0.766 | | |
| | | Daman and Diu | 0.754 | | |
| | | Puducherry | 0.748 | | |
| | | Manipur | 0.707 | | |
| | | Maharashtra | 0.689 | | |
| | | Sikkim | 0.684 | | |
| | | Himachal Pradesh | 0.681 | | |
| | | Punjab | 0.679 | | |
| | | Tamil Nadu | 0.675 | | |
| | | Haryana | 0.644 | | |
| | | Uttarakhand | 0.628 | | |
| | | West Bengal | 0.625 | | |
| | | Gujarat | 0.621 | | |
| | | Dadra and Nagar Haveli | 0.618 | | |
| | | Arunachal Pradesh | 0.617 | | |
| | | Tripura | 0.608 | | |
| | | Jammu and Kashmir | 0.601 | | |
| | | Karnataka | 0.600 | | |
| | | Meghalaya | 0.585 | | |
| | | Andhra Pradesh | 0.572 | | |
| | | Rajasthan | 0.537 | | |
| | | Assam | 0.534 | | |
| | | Chhattisgarh | 0.516 | | |
| | | Jharkhand | 0.513 | | |

*Source: http://en.wikipedia.org/wiki/Human_Development_Index*

## 7. CASES WHERE CSR HAS BEEN USED AS A TOOL TO IMPROVE HDI

**(I) CSR INITIATIVE OF RURAL ELECTRIFICATION CORPORATE LTD. IN THE STATES WITH LOW HDI RATINGS**

Rural Electrification Corporation Limited (REC) signed a MoU with Dr.Reddy Foundation (DRF) for the generation of livelihoods through "REC-DRF-LABS" (Livelihood Advancement Business Schools) for training of 2400 rural-semi urban youth from economically weaker sections leading to their gainful employment. REC will be giving an assistance of Rs.1.63 Crore to Dr.Reddy Foundation (DRF) under this CSR initiative, in the first year. The project will aim at providing skill development leading to livelihood and gainful employment to nearly 12000 youth largely from weaker section of society such as Below Poverty Line (BPL) etc. over a period of 5 years with an assured funding support of Rs.10 Crores approximately. The states chosen for the purpose are Chhattisgarh, Jharkhand, Eastern UP, Bihar, West Bengal and Odisha which are low HDI states than the national average performance. **(14)**

**(II) CSR INITIATIVE OF TATA STEEL - IN THE STATES WITH MEDIUM - LOW HDI RATINGS - JHARKHAND**

Tata Steel has partnered with the Government of Jharkhand and ISKCON Food Relief Foundation to roll out a Mid-Day Meal Scheme for underprivileged school going children in East Singhbhum and Saraikela-Kharsawa districts of Jharkhand. The Mid-Day Meal Programme in East Singhbhum and Saraikela-Kharsawa districts of Jharkhand will initially benefit 65,000 children. This number is estimated to go up to 1 lakh within the next two years. Tata Steel will provide the infrastructure that would be required for successful rollout of the Mid-Day Meal Programme while ISKCON Food Relief Foundation, an NGO that provides top-class Mid-Day Meal Services in various towns and cities across the country, will take charge of the day-to-day management of the programme.

ISKCON Food Relief Foundation has obtained ISO 9001 and Hazard Analysis and Critical Control Point certificates and ensures food safety management. It partners with many State governments and conforms to the Supreme Court stipulation of 450Kcal and 18 grams protein per child. (15)

**(III) CSR INITIATIVE OF VEDANTA ALUMINIUM LTD. - IN ORISSA - LOW HDI RATINGS STATE**

Vedanta Aluminum Limited, Lanjigarh organized a free Health Camp at Chandanpur village in Lanjigarh block of Kalahandi district, Orissa on June 22, 2011 at which nearly 300 villagers were examined and were distributed with medicines free of cost. The health Camp catered mostly people of nearby villages like Jodabandha, Gopinathapur, Nutanbaterlima, Khamankhunti and Chandanpur. Vedanta Aluminium regularly organize health camps at nearby villages to make a healthy society around Lanjigarh. Recently we organized camps at Chhatrapur, Basantpada etc. Health & MHU Team of VAL went to nearby villages of the venue as a part of pre-publicity step to inform the villagers about the camp and doctors availability during the Health Camp about a week back. VAL health camps is a part of its aim to make a healthy society. (16)

**(IV) BHARAT RURAL LIVELY HOOD FOUNDATION (BRLF) – PPP MODEL FOR CSR - IITIATIVE**

In a first major initiative of involving corporate India in developmental work, the Government of India has sought its partnership in setting up the Bharat Rural Livelihood Foundation (BRLF). Rural Development Minister Jairam Ramesh has written letters to corporate like Tatas, Reliance, Wipro and Infosys to join the Foundation as contributing partners, to improve the livelihood of tribals, mostly living in Central and Eastern India. Public sector NABARD and the National Dairy Development Board have also been roped in.

"We have called a meeting on April 27 in New Delhi of all the stake holders, including corporate, civil society organizations and grass root level activists to discuss various aspects of the Bharat Rural Livelihood Foundation" said Mr. Jayram Ramesh, during his informal interaction with media in Mumbai today. The Minister said that the BRLF will be set up with a corpus of Rs 1,000 crores. "Government of India will contribute Rs 500 crores, while the rest will come from other partners." he added.

The latest proposal, evolved jointly by the Ministry of Rural Development and the Planning Commission, envisages a concerted effort by the Centre, the State governments concerned, and civil society to transform the lives of the tribal, living in 170 districts, of which nearly 78 have been affected by Naxal violence and have not seen any development.

The government hopes that such initiatives will promote inclusive growth by taking the fruits of development to the tribal population living in remote areas. Since these tribals have remained mostly excluded from the benefits of growth, they have become vulnerable to Maoist propaganda.

The foundation will support developmental activities in the areas of watershed management, dairy, fisheries, agriculture, forestry, skill-development, among others. **(17)**

**(V) CSR INITIATIVE OF NALCO LTD. - IN ORISSA - LOW HDI RATINGS STATE**

Navratna PSU under Ministry of Mines, Govt. of India and country's leading producer and exporter of alumina and aluminum, National Aluminum Company Limited (NALCO), has extend relief to the flood victims. The company has donated Rs 1 crore to the Chief Minister's Relief Fund, Orissa, which has been severely affected by unprecedented flood.

NALCO has several times extended relief measures towards the development in the Orissa. Earlier, the company had donated Rs 1.39 crore during the super cyclone in 1999 and Rs 5 crore for flood victims of Orissa in 2008. The company has doubled its CSR budget to 2% of the net profit from 2010-11, by setting up a NALCO Foundation. For the current fiscal, the company has earmarked Rs 21.38 crore for various CSR activities. **(18)**

## 8. CONCLUSION

Specifically in India though the exponential and phenomenal growth of GDP has been incurred during the last decade, and country is moving towards being one of the large economy, secondary data analysis of the GDP with respect to important Human Development Index opens the fact that performance of the country on human development index is certainly quite worry some. It clearly indicates poor health of the society and income diversities. Besides Government policies, corporate also beholds the power and their responsible behavior can certainly contribute towards the change of the societal health. Corporate Social Responsibility activities and responsible corporate behavior of the various corporate in the poor HDI holding states in India has really turn around the societies health and have generated new ray of hope of healthy society which needs to be followed by the other organizations of the Corporate India among the different industries, These will not only support the society and the country but will also support the business as business and the society are mutually depended on eachother.

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# WOMEN ENTREPRENEURSHIP FROM A GLOBAL PERSPECTIVE

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**ABSTRACT**

*The number of women entrepreneurs is increasing all over the world but the rate of increase is not the same for all the countries. In some of the developed countries women entrepreneurship is growing at a very low rate on the other hand in some developing countries entrepreneurship amongst women is growing at a very fast rate. It is postulated that the disparity in growth of women entrepreneurs in various countries is due to the diversity in the perception of the social and economic milieu prevailing in the society. This paper attempts to explore the characteristics, motivation and challenges faced by the women Entrepreneurs. The paper also explores the factors that differentiate women entrepreneurs in developed countries from women entrepreneurs in developing countries.*

**KEYWORDS**

Challenges, developed countries, developing countries, motivation.

## INTRODUCTION

In recent years due to changes in economic and social environment there has been a rapid growth of women entrepreneurs (Adler, 2004, CEEDR, 2000). The economic and social change has been the result of globalization, technological advancement, media exposure, inflation and unemployment, Due to these changes women have become more confident and are ready to take up roles, which were earlier a man's domain. They are no longer confined to their domestic roles of mother, sister, wife and daughter. Women have taken up the role of a career woman. They are seen in politics, films, service and entrepreneurship (Kollan & Parikh, 2005).

Entrepreneurship as an economic activity is largely dominated by men all over the world (Minniti et. al., 2004). There is a gender gap in entrepreneurship activity that is men are more likely to be involved in entrepreneurship activity than women and also there is a strong positive correlation in the rate of growth of entrepreneurial ventures between men and women i.e. those countries with a higher entrepreneurial rate among men are also likely to have higher percentage of women entrepreneurs (GEM-report, 2004).

Across the world, women-owned firms typically comprise between one-quarter and one-third of the business population (Trieloff, 1998, NFWBO, 1997, OECD 2000, OECD 2004). In the U.S and Canada 30 percent of all small companies are owned by women and it is contemplated that soon women shall own 50 percent of small businesses (Peacock, 1998; Kelly, 1996; Jung, 1997; Cachan and Carter, 1989; OECD, 1993; Brush and Hisrich, 1991). Similarly in countries like Australia, New Zealand and Germany too there has been a rise in the number of women entrepreneurs (Bennett and Dann, 2000; Mroczkowski, 1995; Dwyer et. al., 1996). Amongst the developing countries[1] East European countries have shown greater proportion of women entrepreneurs (GEM Report, 2004; Bezhani, 2001; Ferdinand, 2001; Gerard et. al, 2004) and amongst the developing countries of Asia, Africa and Latin America the countries that show a high proportion of women entrepreneurship are Peru, Ecuador, Uganda, Nepal and Korea (OECD-report, 2004; Harsanyi,1994; Women and Poverty, 1995 and Gerard and Swarna,1996). However in a recent study conducted by GEM (2007) it has been found that the developing countries are now exhibiting a higher women's early stage entrepreneurial activity[2] compared to women entrepreneurs in the developed countries[3]. Early stage entrepreneurship activity is four times higher among women in Latin American and Caribbean countries compared to women in other developing countries and developed countries. Amongst developing countries the countries where early stage women entrepreneurial activity are taking place at a faster rate are Peru, Thailand, Columbia and Venezuela. This is followed closely by the Dominican Republic, China, Chile and Brazil. Latvia and Russia show the lowest rates of early stage women entrepreneurial activity. Amongst the developed countries Austria and Belgium show the lowest early stage women entrepreneurial activity.

It seems that the disparity in women entrepreneurship across countries is due to the diversity in their perception and socio-economic conditions prevailing in the state and in order to have a better understanding of how perception and socio-economic conditions may affect women entrepreneurship one has to look into the various dimensions of women entrepreneurship. The various dimensions are age, education, family background and experience. In the following paragraphs a detailed summary of these dimensions has been given.

[1] Low and Middle Income countries (based on their gross domestic product and their growth rate)

[2] Based upon the age of their businesses. Early stage entrepreneurs are those involved in owning and managing, alone or with others, a nascent business, or one that has been in operation for 42 months or less. By contrast, established entrepreneurs are those involved in owning and managing, alone or with others, a business that has successfully survived in the market beyond 42 months, as 31/2 years is the approximate critical period within which a business is most likely to fail. The early stage entrepreneurs show the percentage of population willing and able to understand new venture creation. Whereas established business ownership, instead indicates the percentage of population actively involved in running businesses that have proven to be sustainable.

[3] High Income countries

## CHARACTERISTICS OF WOMEN ENTREPRENEURS

According to Hisrich and Peters (1995) there is a difference between men and women entrepreneurs. Now the question is whether differences exist amongst women entrepreneurs also. In the following paragraphs an attempt has been made to bring out the differences between women entrepreneurs in the developed and developing countries.

The basis of difference are broadly on demographic attributes and business characteristics.

## DEMOGRAPHIC ATTRIBUTES

The Demographic attributes examined here are age, education, family background and experience.

**Age:** Women in developed countries with higher education tend to start business late in life than women in developing countries who are less educated or are illiterate (Minniti et al, 2004). Studies have found that women in developing countries start business in their late twenties and early thirties whereas women entrepreneurs in developed countries start business in their late thirties and early forties (OECD, 2004, GEM-2004). Gundry and Ben-Yoseph (1998) in their study on Polish, Romanian and American women entrepreneurs found that women entrepreneurs in Poland and Romania start business in their 30's as well as in 40's whereas majority of American women entrepreneurs start business in their 40's. In a recent study (GEM, 2007) it has been found that the age for women entrepreneurial activity in developed countries has broadened i.e. instead of women starting business in their late thirties and early forties they are now venturing into entrepreneurial activity in their late twenties. Women in these countries are starting business in their late twenties and early forties. This is so because women in these countries have started opting for entrepreneurial career as their first choice.

**Education:** Education empowers women and gives them the opportunity to earn their own livelihood. Earlier many women with higher education and academic degree did not consider entrepreneurship as a career opportunity because education gave them access to more interesting and better-paid occupations (GEM Report, 2004). They preferred employment to entrepreneurship. However now educated women especially in developed countries are giving preference to entrepreneurship (United Nations, 2000). Due to impenetrable glass ceiling in the corporate career women in developed countries are preferring to take up less discriminatory and more exciting entrepreneurial endeavor (Hansard, 1990; Mattis, 2000). Exceptions are Finland and Sweden where largest percentages of entrepreneurially active women are those who have only some secondary education. On the other hand educated women in developing countries are still not interested in entrepreneurial activities. In these countries especially in Africa and South Asia women who are illiterate or who are less educated are seen to be venturing into entrepreneurship (Beegam, 2006). However Jordan is an exception where majority of the women entrepreneurs have graduate level education. In general even if women are educated they lack technical and skill oriented knowledge, which impedes their entry into technologically sophisticated areas of entrepreneurship (Hisrich and Peters, 1995). Women in general are underrepresented in Science and Technology related fields and overrepresented in the humanities (European Commission 2003:45; O'Dubhchair and Hunter, 1995; Klawe and Levenson, 1995; Richardson et al., 2002)

**Family background:** The chances of women entering into business are high for women coming from business families are not true because so far no pattern has been found regarding the family background (whether business or non-business) of women entrepreneurs. Women entrepreneurs have been found to be coming from a variety of background (GEM, 2004). They seem to be coming from both business as well as non-business background. In fact there was a time when women were not welcome in family businesses at all, except as office workers (Knight, 1989; Hugron, 1989). Second generation women entrepreneurs (i.e. daughters of women entrepreneurs) are still underrepresented in both developed and developing countries. But gradually things are changing and now daughters and wives are rising to leadership positions in family firms and daughters taking over businesses in traditionally male-dominated fields (Nelton, 1998). Godfrey (1992) in his study has suggested that family is a fertile training ground for subsequent business ownership and this is being witnessed in developed countries of US and Canada where there has been a marked growth in the second generation female entrepreneurs (Dumas, 1998). Women who have been in business for many years are now encouraging their daughters to take over the businesses (Genasci, 1995).

**Experience:** Studies have shown that most people start firms in industries where they have worked previously (Bruderl et al., 1992). Men often have experience in manufacturing, finance or technical areas. Women in contrast usually have administrative experience, which is limited to the middle-management level, often in more service-related areas as education, secretarial work, or retail sales (Hisrich and Peters, 1995). In developing countries in particular women often enter business without prior experience (Watkins and Watkins, 1988). On the other hand in developed countries a high proportion of women entrepreneurs enter business with past experience. According to GEM report (2007) in developed countries the likelihood of being involved in entrepreneurial activity is three to four times higher for those women who are employed (whether full time or part time) compared to those women who are not working, retired or are students. This suggests that working provides access to resources, social capital and ideas that may aid in establishing an entrepreneurial venture. However in developing countries women enter into business regardless of employment. This is likely to be a reflection of necessity entrepreneurship among these women.

## BUSINESS CHARACTERISTICS

**Capital:** Women world over employ less start-up capital compared to men (Verheul and Thurik, 2001). Often, starting a business is less expensive in developed countries than in developing countries as they have a better physical infrastructure and more advanced capital markets (Bygrave and Hunt, 2004). Majority of the women entrepreneurs provide all the required start-up capital themselves therefore most of them rely on personal and family savings or borrowings from friends and relatives (Hisrich and Peters, 1995). Very few take bank loans. Ireland is an only exception where women entrepreneurs provide only up to 10% of their own start-up money and obtain the remaining 90% from external sources (Minniti et al, 2004).

**Size and Growth:** Women entrepreneurs have always been characterized by small company size (Kirsi, 2005). Firms owned by women are significantly more likely to have no employees compared to firms owned by men (Franco et al., 2002). Most enterprises are run by them single handedly or with the help of their family members (Bezhani, 2001). It is presumed that the number of additional jobs that a business expects to create is an indicator of the growth of business. Women entrepreneurs are expected to create no jobs or 1 to 5 jobs within a 5-year period (OECD-report, 2004). Even if they employ they employ lowly paid women employees, working part-time, who consequently have few rights in terms of employment protection (Goffee and Scase, 1985). Women entrepreneurs have little interest in expanding their business. However women entrepreneurs are expanding their business in countries like USA, UK and Canada where they are creating and providing new jobs to others at a high rate. As far as developing countries are concerned job creation and growth are almost negligible.

**Type:** Women in general are predominantly into conventional entrepreneurship which means that they tend to create businesses in service sector, retail sector and wholesale and distribution where they are already economically active as managers, owners or employees (Anderson and Woodcock, 1996; Panandiker, 1985; Carter, 1994). However there are a few women who have refused to be conventional. These are the radical women entrepreneurs, who are highly educated and have acquired technical skills (Vinze 1987). They are moving rapidly into fields that have been traditionally male dominated such as production, construction, computers (IT), electronics, bio-technology and stock exchange (Tulsi et. al., 1995; Bennett and Susan, 2000). Women in these non-conventional fields are doing well and in some cases doing better than their male counterparts. In fact the top growth industries for women entrepreneurs in the US have been construction, wholesale trade, transportation, communication, agri based business and manufacturing firms (National Foundation for Women Business Owners, 1997). Similarly Australian women entrepreneurs also seem to be moving away from traditional female industries into male dominated industries (Bennett and Dann, 2000).

## MOTIVATION

According to Burke and Nolan (2002) the motivational factors to start a new business is far more complex for women than men, and that women tend to be more sensitive than men to a variety of non-monetary incentives. Similarly there is difference in terms of growth motivation between men and women; women have lower growth ambitions than men. This result has been observed in developed countries of US (Carter, 1997) and Sweden (Wilklund, Davidsson and Delmar, 2003).

For women the choice to start a new business is often linked to financial security (Lisowska, 1996) and flexibility of time (Welsch and Pistruti, 1994; Gundry and Ben-Yoseph, 1998). In addition, motivation for women is related to whether they are opportunity driven entrepreneurs or necessity driven entrepreneurs. In opportunity driven entrepreneurship, women choose to become entrepreneurs because they perceive better opportunities like growth, independence and work satisfaction in an entrepreneurial venture (Beegam, 2006). They start business to exploit a perceived business opportunity. (Oconnor and Humphreys, 1988; Vokins,1993; Storey and Strange, 1993; Anderson and Woodcock, 1996).

On the other hand in necessity driven entrepreneurship women are forced to take up entrepreneurial ventures, because they do not have any other means of livelihood. In developing countries where people are living in extreme poverty and there are less means of livelihood, and therefore any form of entrepreneurship is seen as the only solution for their livelihood. In these countries it is not the aspiration of women that turn them into entrepreneurs. They take up this career in the absence of other means of contributing to family income (Karim, 2000). Most of them start business only after all there attempt to secure a regular and salaried job fails (Jacob, 1998; Jyothi and Prasad, 1993). Thus opportunity driven entrepreneurship is more widespread among women in developed countries and necessity driven entrepreneurship is more widespread among women in developing countries (Minniti et al 2004). According to GEM report (2007) the ratio of opportunity to necessity entrepreneurship is significantly higher in the developed countries than in developing countries. The women entrepreneurs in almost all the developed countries are more likely driven by opportunity with the exception of Hong Kong where most of the women entrepreneurs are driven by necessity. Denmark and Norway exhibit the highest rates of opportunity motivation for women early stage entrepreneurship in developed countries. Amongst developing countries Serbia and Turkey exhibit the highest rates of necessity motivation for women early stage entrepreneurship.

## CHALLENGES

The following paragraphs discuss the challenges faced by women entrepreneurs in starting and running their business enterprises. These challenges are discussed under four dimensions: Gender, Psychological factors, credit and finance and other problems.

### GENDER BASED CHALLENGES

**Gender Gap:** In most countries men are widely believed to be more competent than women, except when performing feminine tasks. Substantial evidence indicates that entrepreneurship is stereotypical as a masculine task (DiMaggio, 1997; Holmquist et al., 2002) therefore woman's task is often defined on the basis of her gender. Women entrepreneurs start and manage firms in areas different from men (Duchenaut, 1997; Franco and Winqvist 2002; Reynolds and White 1997). Unlike men women are mostly found in businesses of trade and service. Very few women undertake the businesses of manufacturing and construction.

A significant gender gap exists in entrepreneurship activity. In all the countries men entrepreneurial activity is higher than women entrepreneurial activity with the exception of Japan, Thailand, Peru and Brazil, where the rates of entrepreneurial activity are almost identical between men and women. Some of the other countries where gender gap is not significant are Ecuador, Finland, Hungary, South Africa and The United States (GEM, 2007; GEM, 2004).

Countries where opportunity based entrepreneurship is practiced seem to have less gender gap. These are the developed countries where due to targeted programs, cultural changes and entrepreneurial education women are getting equal opportunity as men. However there are exceptions in this regard. Developed countries like France, Greece and Spain where women practice opportunity based entrepreneurship face huge gender gap. In these countries women have access to same education and jobs as men, but important differences still exist and they seem to be shrinking at a very slow pace. Gender gap is high in developing countries where percentage of men in entrepreneurship is higher as compared to women.

**Occupational Closure and Segregation:** Occupational closure and segregation inhibit women's entrepreneurship because closure and segregation suppresses women's ability to discover all entrepreneurial opportunities as many opportunities are correlated with occupation. Occupational closure is defined as the de jure or de facto exclusion of specific groups of people from particular line of work (Cahill, 2001; Davies, 1996; Witz, 1990) what do these two terms mean here?). De jure occupational closure means legal prohibitions on women entering certain professions and occupations. For instance until 1983 women in Sweden and France were not allowed to participate in the armed forces. De jure occupational closure is almost negligible in developed countries but is quite prevalent in developing countries. In Africa and Asia religious doctrines are incorporated in the system, which prohibit women from working in certain areas. This has been reiterated in a study by Monk-Turner and Turner (2001). It has been found that South Korea business groups, through government ties and monopoly powers, exercise gender discrimination in the labour market. Similarly Rhein (1998) has found that widespread gender-based employment discrimination is prevalent both in the government and the private sectors in Russia. Thus by confining women's roles in economic development or by hindering access to occupations governments indirectly discourage entrepreneurial behaviour amongst women.

De facto occupational closure is the occupational closure or segregation, which is not legally endorsed. This is found both in developed and developing countries. In developed countries though there are no legally endorsed occupational closure, occupational segregation still exists on gender basis (Smith 2002). This affects women's ability to start and manage firms. Women world over do not have easy access to top management position (Eurostat, 2001). Glass ceiling is a phenomenon experienced by women both in developed and developing nations. This obstructs women to develop high quality management experience and professional network.

### PSYCHOLOGICAL FACTORS

The psychological factors often pose insurmountable obstacles for women even when credit, capital and skills are made available to them (Sasikumar, 2002). It has been found that women's level of optimism and self-confidence with respect to starting a business is lower than that of their male counterparts. Their perceptions are subjective and are likely to be influenced by contextual factors, such as culture and social norms. They do not appear to be correlated in any significant way with education, work status or household income (GEM, 2007). A woman's subjective perception affects her likelihood of pursuing a career in business.

The subjective perception about one's own skills, likelihood of failure and the existence of opportunities are all highly and significantly correlated to a woman's decision to start new business (Kollinger et al., 2004).

Studies have indicated that subjective perception of available opportunity has been a crucial component in starting new venture in developed countries than in developing countries. Likewise the subjective perception of having sufficient skill is high amongst women in developing countries than in developed countries (Minniti et al, 2004). Amongst developed countries the lowest belief in ones own skill is found in women of Japan and amongst developing countries the highest belief in ones own skill has been found in women of Uganda.

There is a strong negative correlation between a woman's likelihood of starting a business and her fear of failure. It has been found that women entrepreneurs all over the world are more likely to express a fear of failure compared to their male counterparts. However the survival rates of women in business in developed countries is more than the survival rates of women in developing countries. This is so because the fear of failure for women in developing countries is higher than women in developed countries due to a higher prevalence of necessity entrepreneurship among women in these regions (GEM, 2007). In necessity entrepreneurship women take up entrepreneurial venture to fulfill their financial needs, as no other source of livelihood is available to them therefore fear of failure is higher among them.

### FINANCE / CREDIT

Finance is one of the biggest problems, which women entrepreneurs face all over the world. They complain about the rigid formalities and procedures for availing credit (Ramanunny, 2003). In developing countries in particular women have limited access to material resources such as land and capital. Banks and other financial institutions are hesitant while providing finance to women entrepreneurs because they don't have property rights and security (Gerard et. at., 2004). Banks ask for guarantee from their fathers and husbands, which they seldom get. Banks also demand collateral for getting loans and as women have fewer rights to parent's and spouse's property they are unable to offer collateral which further restricts their access to bank credit (Karim, 2000). Due to weak social position, they are not allowed to seek finance themselves instead their husbands or brothers seek finance on their behalf (Mayoux, 2001).

Developed countries in comparison are better then developing countries but here too women mostly rely on own savings. They seldom depend upon external finance for their business. Exceptions to this are Ireland and US.A. Ireland is one country where majority of women entrepreneurs rely heavily on external

finance. In both these countries women do not face the problem in availing credit from external sources. Compared to developed countries women in developing countries have low savings. With a low income it is difficult to save money and hence the probability of becoming an entrepreneur diminishes as well. In developing countries in particular it is very difficult to save money for women for business purpose because at any moment a male family member (husband, brother, brother-in-law) can confiscate the accumulated capital for no other reason than that he is allowed to and there exists no protection for women in this respect (de Groot, 2001; Mayoux, 2001). The relationship between income, saving and propensity to engage in entrepreneurship is well documented in number of countries such as Sweden, UK, and US (Delmer et al, 2000; Cressy, 1996; Aldrich, 1999;Reynolds et al., 1997) where women entrepreneurship has increased at a fast pace. Thus the higher the ability to save the higher is the probability to enter into self-employment.

**MISCELLANEOUS OTHER PROBLEMS**

**Multiple roles:** Women entrepreneurs all over the world find it difficult to balance work with family. Their career is considered secondary to that of their husbands (Brannon, 1999). As they play multiple roles they are often left with less time to devote to business (Lisowska, 1996). Their duties are given priority as a wife, mother, daughter-in-law and daughter of the family. Duties as owners of small business come last in order of priority. Trying to cope up with the home front and work units is exceptionally demanding (Rao and Rao, 1985).

**Family policies and Unemployment benefits/ social security:** Balancing work and family is very important for women entrepreneurs all over the world and the role of family policy has been identified as very crucial in this regard. It is understood that with greater availability of childcare facility women tend to increase their time for participation in entrepreneurship. The developed countries in comparison to the developing countries have been more forthcoming in formulating family policies. However the childcare facility in the developed countries has had a negative response. It has been found that the Scandinavian countries (Finland, Denmark and Sweden) (Kirsi, 2005)**,** which provide child care facilities to their working women, has had lower level of entrepreneurship than US, Australia and UK which do not provide such facilities. This is because the childcare facility can be availed only by employed women and not by self-employed women. Therefore such provisions encourage high levels of women's employment and low levels of women's entrepreneurship. Similarly employment benefits or social security benefits given to the unemployed youths in developed countries often discourage them from taking up entrepreneurship as taking up self employment exposes them to the risk of losing the unemployment benefit.

**Lack of Education, knowledge and experience:** Many times women entrepreneurs are not fully conversant with the various laws, formalities and regulations prevailing in their state (Vinze, 1987). Many of them are unfamiliar with market techniques, or do not possess the experience and ability needed to expand their businesses. In developing countries of Asia and Africa women find it difficult to manage business due to their lack of business and managerial experience prior to start-up (Gerard et. al., 2004, Firdinand, 2001; Karim, 2001). Education in the area of entrepreneurship helps people to develop skills and knowledge, which can benefit them in starting, organizing and managing their own enterprise. It is interesting that while many collegiate schools of business administration are operating in developed countries, this is not the case elsewhere. In most of the educational institutions particularly universities in developing countries entrepreneurship is not taught. In general better education is expected to yield better results in entrepreneurial performance as good academic background makes women confident in dealing with the problems in business in an effective manner (Murugesan, 2005). Women lacking education also lack information, which is quite prominent in developing countries (Karim, 2000; Mayoux, 2001). As women entrepreneurs in developing countries are mostly illiterate they are prone to be financially exploited by others and tend to operate in the informal sector through out their lives. In addition women in developing countries also lack knowledge on various national support programmes. (Ferdinand, 2001)

**Physical infrastructure:** Most of the developing countries have weak infrastructure, which hampers the growth of business. Women especially in African countries have problem in accessing appropriate and affordable premises. Most of the women entrepreneurs operate their business enterprises on the street (ILO report, 2000).

**Network and Role models:** Networks are major source of knowledge about women's entrepreneurship and they are increasingly recognized as a valuable tool for its development and promotion. Networks are providers of information, possibilities and support. In developing countries women have significantly smaller networks compared to women in developed countries. Similarly there exist a strong positive correlation between the presence of role models and the emergence of entrepreneurs (Shapero and Sokol, 1982). The influence of role model is gender related. That is an individual will be more influenced by another individual of the same sex, as ones aspirations and choices tend to be more influenced by persons of the same sex (Deaux and Lafrance, 1998). Role models are found more in developed countries than in developing countries.

## SUMMARY

Women entrepreneurs in both developed and developing countries seem to be emerging from mixed background (both business and non-business) as no pattern has been found yet although a small number of second-generation women entrepreneurs have emerged in developed countries like USA and Canada.

Women in general lack technical and scientific education, which impedes their entry into more sophisticated and technology oriented business fields. Along with this they also lack experience in manufacturing, technical and financial areas. They are predominantly found in administrative/secretarial, service, education and sales related areas. However women in developed countries are more educated and have sufficient years of experience before venturing into business than their female counterparts in developing countries. As a result they enter business at a later age than women in developing country. In the developing countries women entrepreneurs in East European countries are comparatively more educated and start business late than women entrepreneurs in Asian, African and Latin American countries.

Women in both the developed and developing countries generally have small businesses which are managed either single handedly or with the help of family members. Except in US, UK and Canada women rarely expand their business as a result they do not create additional jobs. Because of the small size women entrepreneurs all over the world employ less start-up capital than their male counterparts. They generally use their own savings and family savings to start business. They hardly take bank loans or any other external source of finance.

Women entrepreneurs all over the world practice conventional entrepreneurship. US and Australia are exceptions as women entrepreneurs in these countries are venturing into new areas of construction, production, electronics, biotechnology and stock exchange and in some cases even doing better than their male counterparts.

In both developed and developing countries women more often tend to choose business due to flexibility of time and financial security. As they need to balance work with family, business gives them ample opportunity to fix working hours according to their own convenience. Along with this there are other factors, which motivate women to choose business. In developed countries in particular women see business as an opportunity. On the other hand in developing countries women see business as a means to fulfill their necessities, the basic necessities of life such as food, shelter, clothing etc. Therefore opportunity entrepreneurship is widely practiced in developed countries whereas necessity entrepreneurship is practiced in developing countries.

Women entrepreneurs face more problems than men entrepreneurs in addition women entrepreneurs in developing countries face additional problems compared to women entrepreneurs in developed countries. Gender based problem is one such problem which is universal in nature. Gender gap seems to be less in developed countries than in developing countries. De jure occupational closure is present in developing countries and almost negligible in developed countries. In contrast De facto occupational closure is found both in developing and developed countries. Women world over do not have easy access to top management position. Glass ceiling is a phenomenon experienced by women both in developed and developing nations, which obstructs women to develop high quality management experience and professional network.

Most of the developing countries have weak infrastructure, which hampers the growth of business in these countries. Women especially in African countries have problem in accessing appropriate and affordable premises. In addition women in developing countries have significantly smaller networks, role models and less geographical mobility than women in developed countries.

The psychological factors often pose obstacles for women even when credit, capital and skills are made available to them. Subjective perception of available opportunity has been a crucial component in starting new venture in developed countries than in developing countries. Similarly the subjective perception of having sufficient skill is an important factor in starting a new venture. Majority of women in developed nations do not believe they have the skills and knowledge

necessary to start a new business. The reverse is true for developing countries where almost half of them believe that they possess such skills. Fear of failure and entrepreneurship are negatively related. It has been found that majority of women entrepreneurs in both developed as well as developing countries do not possess the fear of failure.

Women often complain of rigid formalities and discrimination in availing credit from banks. Women in developing countries face additional problems to women in the developed countries. Women in developing countries often do not have property rights, which prohibit them from taking loan on collateral basis. They also lack information on credit facilities. In addition they have low level of savings.

The governments of various countries have devised family policies such as providing day care centers for children of working women and employment benefits for the unemployed. The developed countries in comparison to the developing countries have been more forthcoming in formulating such policies and it has been found that instead of being a facilitating factor these policies have become an obstruction in the growth of entrepreneurship.

In developing countries of Asia and Africa major problems faced by women entrepreneurs are lack of education, knowledge and experience prior to start-up. While entrepreneurship education is provided in educational institutions in the developed countries this is not the case in developing countries.

## DISCUSSION

It is found that countries with higher men entrepreneurship also have higher number of women entrepreneurship and vice versa. This raises a couple questions. Don't women tend to follow professions and occupations which men do? Therefore can we think of the possibility of increasing women entrepreneurship by increasing the number of men entrepreneurs as increase in number of men entrepreneurs will automatically have a tickle down effect on women entrepreneurship? As a result do women entrepreneurs really require special privileges to succeed? If men entrepreneurship will sooner be followed by women entrepreneurship then is it not more rewarding to frame policies and measures, which can benefit overall entrepreneurship irrespective of gender?

Countries have defined women entrepreneurs differently. There is still no consensus at to what constitutes women entrepreneurs. This makes data comparison very difficult. For instance does self-employed labor class in developing countries come within the realm of women entrepreneurs? These women are the domestic servants, vegetable vendors, sweepers and constructions workers. They are mostly illiterate and very poor. As they comprise a large section of working women their inclusion or exclusion can have a significant impact in the study of women entrepreneurship. As this class is almost negligible in the developed countries it becomes very difficult for the researchers to compare women entrepreneurs on an equal footing. Similarly social entrepreneurship has gained popularly and emerged in both the developed and developing countries. Do women entrepreneurs include only business entrepreneurs or do they also include social entrepreneurs as well?

Another problem, which the researcher may find is the non-availability of data. The data is lopped sided, which makes the comparison between developed and developing countries very difficult. Data is more on women entrepreneurs in developed than in developing countries. Most of the studies on women entrepreneurship have been carried out in the developed countries. The reports given by some of the international organizations like OECD, European Union, APEC, UNCTAD, ILO and GEM have focused their research primarily on women entrepreneurs in the developed countries. They have focused on developed countries of North America, West Europe, Australia, New Zealand and Japan. Amongst the developing countries they have mostly covered the countries of East Europe, East Asia and Latin America. They have hardly covered the countries of North Africa and the Middle East, Sub-Saharan Africa and South Asia. The Asian and African countries covered by them are miniscule compared to the American and European countries. It is not wrong to say that study on women entrepreneurship is not complete until studies are undertaken in the developing countries as they constitute the majority of the world population. Thus there is a need for the international organizations to undertake entrepreneurship study in countries of Asia and Africa, which have been underrepresented till now. This will give researchers a new dimension to women entrepreneurship and also facilitate a more balanced comparison between women entrepreneurs in developed and developing countries.

Most of the studies have been carried out to find the difference between men and women entrepreneurs. Studies on the difference between women entrepreneurs in developed countries and developing countries is still inadequate. Though studies have revealed that women entrepreneurship is high in some countries and low in another yet they haven't given the exact factors responsible for this difference. If the factors responsible for high level of entrepreneurship in some of the developed countries are high educational level, high income, high saving level, good physical infrastructure, prior experience and networking then why is there a high level of women entrepreneurship in developing countries of Nepal, Uganda, Peru and Ecuador in the absence of these factors? This gives rise to various questions. Is it the perception of an individual, which affects entrepreneurial development or the socio-economic and political conditions prevailing in the society, which makes ground for entrepreneurial venture? Can a standard mechanism for the encouragement of women entrepreneurship be formulated? Will it have a universal appeal or a mechanism has to be devised which is country specific depending on its socio-economic and political environment? For example can the success obtained by the Grameen Bank and its founder Muhammad Yunus in Bangladesh be obtained in other developing countries as well using the same technique as they did? These are some questions, which require further research into the area of women entrepreneurship.

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# AN EVALUATIVE STUDY OF THE CAUSES OF DIFFERENTIAL FDI INFLOWS IN ROADS & BRIDGES LEADING TO INEQUALITY IN REGIONAL ECONOMIC GROWTH IN INDIA

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**ABSTRACT**

*This paper empirically examines, using ANOVA model with the help of average data for the period 2004-2010, that significant disparity in regional economic growth in India exists. Moreover, disparities in economic growth exist among regions but not across political affiliations. Interestingly, we found in our study using interaction dummy that political affiliation has significant say in the east in making growth different there compared to NWC region as well as south. However, in our study, using ANCOVA model, we have found FDI in roads & bridges, statistically to be a cause of this disparity in regional economic growth. Differential inflows of FDI in roads & bridges across regions could be because of per capita income (measured in terms of per capita NSDP), average road density and population density (size of the region), of which average road density has greater impact on differential inflow, though insignificant, during the study period 2004-2010. As a policy prescription, the Govt. should complement general policy prescription along with strategic discretionary state policy measures to reduce regional economic growth inequality.*

**KEYWORDS**

FDI in roads & bridges in India, ANOVA & ANCOVA model, Inequality in regional economic growth.

## 1. INTRODUCTION

The issues of regional economic growth and inequality have drawn considerable attention among researchers, planners and policy makers. Taking care of regional imbalances has been one of the main targets of the Indian planning. It has also been felt that the disparities among regions have been increasing steadily and the benefits of the rapid growth have not been able to reach all parts of the country in an equitable manner. Growth to be 'more inclusive' nationwide, it is practically necessary that the benefits of economic growth be shared equally by all the regions of the country. It has been argued that because of reforms, income disparities among states are widening (see, for example, Bhattacharya & Sakthivel, 2004; Das & Barua, 1996; Ghosh, 2008; Kar & Sakthivel, 2007). However, Ahluwalia (2000) and Ahluwalia (1996) argue that implementation of these reforms programmes has led to substantial growth in India after 1992, and both the rich and poor states have experienced the benefits of the economic reforms.

Economists have found various factors that have close association with the regional development levels. Infrastructure is conjectured to be more important among them. There are large inter-state disparities in all types of infrastructures, such as physical, social and financial infrastructures in all the years between 1971-72 and 1997-98. While most of the states, initially better endowed in each type of infrastructure, strived to maintain their relative positions. The poor-endowed states were poor performers in infrastructure development during the period 1971-72 till 1997-98. While the good performing states in one or multiple categories of infrastructures were largely successful in achieving higher income, the poor performing states in infrastructure development were lagging in income growth. This reveals the fact that regional disparities in physical, social and financial infrastructures have close association with regional distribution of income.

The growth content of FDI in India may also be maligned by the concentration of FDI in relatively advanced locations (Aggarwal 2005). To the extent that greater openness to FDI in the post-reform era has lead to further agglomeration, FDI may have fuelled regional divergence, rather than promoting convergence. The Schumpeterian growth model presented by Aghion et al. (2006) provides an explanation why more FDI may promote growth in relatively advanced regions, while leaving growth almost unaffected in poorer regions. FDI flows to India are heavily concentrated in a few states. Measured by the amount of approved FDI in 2001-2005, almost 26 percent of overall FDI was located in Maharashtra, followed by Delhi (13.6 percent), Karnataka (11.3 percent), Gujarat (8.3 percent) and Tamil Nadu (6.3 percent), which vouches regional concentration of FDI inflows in India.

## 2. LITERATURE REVIEW

India has experienced wide regional imbalance in achieving development goals. Whether such imbalances have widened over the years or not, have been studied by various researchers. Their conclusions however, diverge. Williamson (1965 and 1968) did the pioneering work in this regard and concluded that regional inequalities in India increased during the 1950s. This conclusion was refuted first by Dhar and Sastry (1969) and then by Mahajan (1982). Others claiming for a narrow down of regional disparity are Gupta (1973), Lahiri (1969) and Rao (1972). More or less converging results have been reported by Majumdar (1970), Nair (1982), Ganguli and Gupta (1976) and Mathur (1983 and 1987). As against this thought, there have been studies that either show a rise in regional inequality or do not at all find any evidence to reveal significant narrowing down of the gap. Venkataramiah (1969), Rao (1973), Nair (1973), Chaudhry (1974), Sampath (1977) and Mohapatra (1978) belong to this thought who argue that regional imbalances in India have increased over the years. Such disagreement, regarding inequality in regional income growth, has mainly been due to the short span of these studies and the sensitivity of the conclusion towards choice of initial and terminal years. Also, majority of these studies have used aggregate regional income (or consumption) levels, making development a uni-dimensional factor, captured by income or consumption level alone. Mathur (2000) has covered, in one long sweep, the issues of National and Regional

Growth experiences in India from 1950-51 to 1996-97 and in some cases up to 2000, using not only overall state per capita income, but also sectoral per capita income and concluded that regional disparities had decreased till mid-sixties but have increased thereafter.

Published studies on infrastructure in the Indian context have been sparse and researchers who have studied availability of infrastructural facilities in India and its regional variation include Shah (1970), Shri Prakash (1977), Gulati (1977) and Arunkumar & Upendranath (1993). The relationship between development and infrastructure has been studied by Tewari (1983 and 1984), Amin (1990), Dadibhavi (1991), Gayithri (1997) and Ghosh & De (1998). Most of them have concluded that the relation between them is positive and significant and a major part of the regional disparity in development can be attributed to regional imbalance in physical infrastructure. Alagh (1987) studied various dimensions of infrastructural planning in India using empirical analysis of different models and projects.

## 3. MOTIVATION

Multitude of literature suggest that while the role of FDI in infrastructure in widening regional income inequality has received increasing interest from academic scholars of late, yet these studies have focused on the general level of infrastructure i.e., physical, social and financial infrastructure. This evinced our special interest to go in for study relating to the factors responsible for differential inflow of FDI in roads & bridges in India leading to regional economic growth disparity, in particular, to fill in the gap and thus supplementing the growing literature on FDI in infrastructure, in general.

## 4. OBJECTIVE

To see whether different regions and/or different political affiliations enjoy differential economic growth performances because of FDI in roads & bridges or not and what are the factors that impact differential FDI inflows in roads & bridges in different regions.

## 5. METHODOLOGY

Per Capita NSDP at factor cost (at current price) has been obtained from the CSO website as on 01.03.2012 and average per capita NSDP is computed by the researchers from the data. Average road density data is computed by the researchers from the Report **'Basic Road Statistics of India'**, Government of India, Ministry of Road Transport & Highways, Transport Research Wing, July 2010 (Page 34-35) and August 2012 (Page 5-6). Population Density data is based on Census 2011, obtained from *wikipedia.org/wiki/list-of-states-and-union-territories-of-India-by-population* as on 10/05/2012. Information regarding ruling political party or coalition is obtained from *http://en.wikipedia.org/wiki/List_of_Chief_Ministers_in_India*. D2 & D3 are the region dummies (where reference region is North-West-Central) and D4 is political affiliation (either ruling party or in coalition) dummy. All data relate the period 2004-2010.

**REGION-WISE DATA ON AVERAGE ROAD DENSITY, AVERAGE FDI, AVERAGE PER CAPITA NSDP AND POPULATION DENSITY**

| Region | Dummy 2 (South) | Dummy 3 (East) | Dummy 4 (Political Affiliation) | Average Road Density (Per 100 sq.km of Area) | Average Per Capita NSDP (Rs.) | Average FDI in roads & bridges (Rs.) | Population Density (/km2) |
|---|---|---|---|---|---|---|---|
| **New Delhi** | 0 | 0 | 1 | 728.72 | 192066.5 | 1873.363 | 12698 |
| **Mumbai** | 0 | 0 | 1 | 143.68 | 61393.66 | 4372.267 | 3232 |
| **Kolkata** | 0 | 1 | 1 | 105.66 | 295872.66 | 195.878 | 1576 |
| **Hyderabad** | 1 | 0 | 1 | 80.21 | 43912 | 3078.133 | 308 |
| **Chennai** | 1 | 0 | 1 | 349.745 | 132013.17 | 167.186 | 3153 |
| **Bangalore** | 1 | 0 | 0 | 129.4 | 45143.33 | 72.77 | 319 |
| **Bhopal** | 0 | 0 | 0 | 54.71 | 54585.33 | 10.9 | 425 |
| **Kochi** | 1 | 0 | 1 | 514.98 | 51189.83 | 0.733 | 2872 |

Note: The states covered under the regions are New Delhi (Delhi, part of UP and Haryana), Mumbai (Maharashtra, Dadra & Nagar Haveli, Daman & Diu), Kolkata (West Bengal, Sikkim, Andaman & Nicobar Island), Hyderabad (Andhra Pradesh), Chennai (Tamil Nadu, Pondicherry), Bangalore (Karnataka), Bhopal (Madhya Pradesh, Chattisgarh) and Kochi (Kerala, Lakshadweep).

Sources:

(I) Average Per Capita NSDP is computed by the Researchers from the data (Per Capita NSDP at factor cost at current price for 2004-2010) obtained from the CSO website as on 01.03.2012

(II) Average Road Density data is computed by the researchers from the Report 'Basic Road Statistics of India', Government of India, Ministry of Road Transport & Highways, Transport Research Wing, July 2010 (Page 34-35) and August 2012 (Page 5-6).

(III) Population Density data is based on Census 2011 obtained from Wikipedia.org/wiki/list-of-states-and-union-territories-of-India-by-population (10/05/2012)

(IV) Information regarding ruling political party or coalition is obtained from http://en.wikipedia.org/wiki/List_of_Chief_Ministers_in_India

(V) D2 & D3 are region dummies (where reference region is North-West-Central) and D4 is political affiliation (either ruling party or in coalition) dummy

Here, first, we want to test whether there is any significant difference between the mean per capita NSDP between the regions, i.e., between reference region (north-west-central region) and south or east. Since, here the regions are expressed in terms of binary variables, the model being one of dummy variable regression. A regression model, which contains quantitative regressand and all qualitative regressors, is known as **Analysis of Variance (ANOVA)**. The Eviews 6 output is as shown below;

$NSDP = ß_0 + ∂_0 * D_2S + ∂_1 * D_3E + u$

$\widehat{NSDP} = 102681.8 - 34617.25 * D_2S + 193190.8 * D_3E$

SE = (34147.25) (45172.56) (68294.49)

t = (3.007031)** (-0.766334) (2.828791)**

(F-Statistic = 5.966348) ($R^2$ = 0.704713)

Here we see that the intercept coefficient is 102681.8. This means that per capita NSDP of the north-west-central (NWC) region, where NWC region is the reference region, is Rs. 102681.8. This value is significant also. Per capita NSDP of south differs from NWC region and is lower by Rs. 34617.25, though this difference is not statistically significant. Per capita NSDP of east differs from NWC region and is higher by Rs. 193190.8, which is statistically significant also. Here, we see that though per capita NSDP of south does not statistically differ from NWC region but that of east statistically differs from NWC region. Though per capita NSDP differs from that of south by Rs. (193190.8 - 34617.25) = Rs. 158573.5, but its statistical significance cannot be tested. To test statistical significance of this difference, we have to use either east or south as reference region. On using east as the reference region, we get the Eviews 6 output as follows;

$NSDP = ß_0 + ∂_0 * D_2S + ∂_1 * D_3NWC + u$

$\widehat{NSDP} = 295872.7 - 227808.1 * D_2S - 193190.8 * D_3NWC$

SE = (59144.76) (66125.86) (68294.49)

t = (5.002517)*** (-3.445068)*** (-2.828791)***

(F-Statistic = 5.966348) ($R^2$ = 0.704713)

Here when we use east as the reference region, we see that all the three coefficients are statistically significant. The intercept is the per capita NSDP of east and it significantly differs from that of south as well as NWC region. Thus we see that so far as economic growth performances of the regions are concerned, differential exists between east and south as well as east and NWC region but not between south and NWC region.

This regional differential in per capita NSDP might be because of multitude of factors, out of which FDI in roads & bridges is one, for when there is FDI in roads & bridges that will lead to construction of roads and thus in turn ensure better connectivity and mobility of factors of production. The smooth flow of factors of production will ensure higher productivity and supply of goods & services on time to warrant higher economic growth. If we want to see whether FDI in roads & bridges has any role in regional differential of per capita NSDP or not, we have to go *ceteris paribus* i.e., holding FDI in roads & bridges constant we have to see the regional differences in per capita NSDP to observe change in the new estimates from the earlier ones. If the difference between east & south and east & NWC region lowers in the new estimation then FDI in roads & bridges could be pinned down to be one of the causes of regional differential in per capita NSDP.

A regression model which is an admixture of quantitative as well as qualitative variables, i.e., the regressand is quantitative and the regressors are qualitative as well as quantitative (control variable or covariate) in nature, the model is known as **Analysis of Covariance (ANCOVA)**. Here, FDI in roads and bridges is the covariate and holding this covariate constant we want to see the regional differences in per capita NSDP. On using east as the reference region, we get the Eviews 6 output as follows;

$NSDP = ß_0 + ∂_0 * D_2S + ∂_1*D_3NWC + ß_1*FDI + u$

$\widehat{NSDP} = 296819.3 – 224745.0* D_2S – 184058.8*D_3NWC – 4.832683*FDI$

SE = (65477.59) (73836.25) (81474.71) (16.18278)

t = (4.533143)*** (-3.043830)*** (-2.259092)** (-0.298631)*

(F-Statistic = 3.282723) ($R^2$ = 0.711153)

Here, in this new estimation we see that though the differences between per capita NSDP of east & south and per capita NSDP of east & NWC are still significant, but the differences have been lowered, meaning thereby that ceteris paribus regional per capita NSDP differences are smaller, which leads to statistical strengthening of economic reasoning of the role of FDI in roads & bridges in growth performances (measured in terms of per capita NSDP) differential. Moreover, the coefficient for FDI is negative (– 4.832683) and marginally significant, that is to say, if FDI in roads & bridges increases by Re.1, per capita NSDP decreases by Rs. 4.832683, establishing a negative relationship between FDI in roads & bridges and per capita NSDP. Since, the gestation period of roads & bridges construction is longer and since FDI in roads & bridges in India started being reported from the year 2004, therefore the period 2004-2010, seven years is not sufficient enough to translate the benefits of FDI in roads & bridges into economic growth, which accounts for the negative relationship.

Sometimes, per capita NSDP might vary across political leaderships also. Generally, it has been observed that inflow of FDI in all the sectors, in general, and FDI in infrastructure (including roads & bridges), in particular, fructify after approval in all those regions where the party which is ruling at the centre or the coalition, being in power, governs the region. So, presumably, the reign of ruling party or the coalition government has always had a favourable impact on regional economic growth. To see whether, political affiliation has had any impact on the regional per capita NSDP differential or not, we use political affiliation dummy, as given in the dataset. On using east as the reference region, we get the Eviews 6 output as follows;

$NSDP = ß_0 + ∂_0 * D_4PA + u$

$\widehat{NSDP} = 49864.33 + 79543.64 * D_4PA$

SE = (64382.67) (74342.70)

t = (0.774499) (1.069959)

(F-Statistic = 1.144812) ($R^2$ = 0.160230)

From the above output we see that per capita NSDP differential because of political affiliation though exists i.e., per capita NSDP of politically affiliated regions is more than that of not-affiliated regions by Rs. 79543.64 but, this difference is not statistically different from zero. Hence, we can nullify per capita NSDP, in this study, varying across political affiliations, as data doesn't support it.

Sometimes, regions and political affiliations interact within them and become jointly the significant cause of per capita NSDP differential, which singly, perhaps, they cannot be. To see how far it is true, we have to use interaction dummy between region as well as political affiliation to see whether political affiliation depends on region and vice´- versá or not. When we consider NWC region as the reference region where the intercept implies political non-affiliation in NWC region, the Eviews 6 output is as follows;

$NSDP = ß_0 + ∂_0 D_2S* D_4PA + ∂_1 D_3E* D_4PA + u$

$\widehat{NSDP} = 88297.20 - 12592.20 D_2S* D_4PA + 207575.5 D_3E* D_4PA$

SE = (31042.72) (47418.54) (69413.64)

t = (2.844377)*** (-0.265554) (2.990413)***

(F-Statistic = 5.183323) ($R^2$ = 0.674620)

Here we see that, in the south, political affiliation statistically does not trigger much difference in economic growth performance as compared to non-affiliation in the NWC region, but political affiliation in the east statistically makes difference from non-affiliation in NWC region. That is to say, regional difference in economic growth depends on political affiliation in the east, but not in south. When we consider east as the reference region where the intercept implies political non-affiliation in east, we see that political affiliation does not have any bearing on region, as shown in the Eviews 6 output as follows;

$NSDP = ß_0 + ∂_0 D_2S* D_4PA + ∂_1 D_3NWC* D_4PA + u$

$\widehat{NSDP} = 131867.1 - 56162.11 D_2S* D_4PA - 5137.027 NWC* D_4PA$

SE = (59839.45) (84625.77) (94614.48)

t = (2.203682) * (-0.663653) (-0.054294)

(F-Statistic = 0.256971) ($R^2$ = 0.093208)

From the above discussion, it becomes clear that political affiliation has a little role and that too in east in making differential in economic growth performance, but hardly has any role in the south as well as the NWC region. Thus we see that growth performance though varies between regions but the same barely varies between political affiliations and if political affiliation at all plays any role, it is in the east.

Since we have pinned down FDI in roads & bridges as one of the important causes of differential in economic growth performance across regions and since inflows of FDI in roads & bridges in different regions are different, we now try to find significant factors causing differential FDI in roads & bridges. Inflow of FDI in roads & bridges depends on a multitude of factors, of which conjecturally some critical factors are, existing level of development (measured in terms of per capita NSDP), road density and population density. The relationship between FDI in roads & bridges and existing level of development is such that if development is there, more investment and more production will be there. Higher investment and higher production will require smooth logistics (physical distribution of factors of production as well as finished products), which in turn, requires optimum roads, highways and ports etc. That is to say, if existing level of development is high in any region, inflow of FDI in roads & bridges will be higher, resulting in a positive relationship. But, in case of India, growth rate of population over the years has notably been higher than the growth rate of NSDP, making per capita NSDP fall, thus making the relationship between FDI in roads & bridges and per capita NSDP inverse. The relationship between FDI in roads & bridges and road density is such that lesser the road density, higher will be the scope for FDI in roads & bridges, as the return for investment will be higher, resulting in a negative relationship. The relationship between FDI in roads & bridges and population density is such that higher the population density, there will be more pressure onto existing roads. Road congestion will increase as result of which, free flow of logistics will be at jeopardy. In order to cure this problem, more FDI in roads & bridges will flow into, resulting in a positive relationship. In order to see the impact of these factors on FDI in roads & bridges empirically, we regress FDI in roads & bridges onto these factors. Eviews 6 output, is as given below.

$FDI = ß_0 + ß_1*NSDP + ß_2*ARD + ß_3*PD + u$

Where, NSDP = per capita NSDP, ARD = Average Road Density and PD = Population Density

$\widehat{FDI} = 2655.345 – 0.009438 *NSDP – 8.740075 *ARD + 0.618869 *PD$

SE = (1147.176) (0.007305) (5.027775) (0.319622)

t = (2.314680)* (-1.291925) (-1.738358) (1.936254)

(F-Statistic = 1.365896) ($R^2$ = 0.506032)

Here we see that though every slope coefficient has their right sign but no slope coefficient is significant, which means that though during the study period 2004-2010, all the factors had their expected impact on FDI in roads & bridges, but the impacts were not significant. Thus we see from the results of the study period that the relationships between per capita NSDP and two key such policy variables as average road density and population density are such that if average road density increases, FDI in roads & bridges fall, if FDI in roads & bridges falls per capita NSDP increases and if population density increases, FDI in roads & bridges increases, if FDI in roads & bridges increases per capita NSDP falls.

Now, the Govt. has adopted various policy measures as well as offered special incentives, such as tax exemption, bearing the cost of project feasibility study, duty-free import of modern roads construction equipments etc., which are equally applicable for all the states across India. But, as a policy prescription, Govt. should differentiate these measures in accordance with the impact of the policy variables considered in this study on per capita NSDP to reduce inequality in regional economic growth.

## 6. CONCLUSION

From the above results, we see that significant disparity in regional economic growth exists, though between east & NWC region and east & south, but not between NWC region & south. Moreover, disparities in growth exist among regions but not among political affiliations. That is to say, growth does not enjoy any political affiliation premium. On the contrary, interestingly, political affiliation has some say in the east in making growth significantly different there from NWC region as well as south. However, in our study we have found FDI in roads & bridges to be statistically a cause of this disparity in regional growth. FDI in roads & bridges have varied across regions and this differential could be because of per capita income (measured in terms of per capita NSDP), average road density and population density (size of the region), of which average road density has greater impact on this disparity, though insignificant, during the study period 2004-2010. Thus we see from the results of the study period that the relationships between per capita NSDP and two key such policy variables as average road density and population density are such that if average road density increases, FDI in roads & bridges fall, if FDI in roads & bridges falls per capita NSDP increases and if population density increases, FDI in roads & bridges increases, if FDI in roads & bridges increases per capita NSDP falls.

Therefore common policy prescriptions adopted by the Govt. across all states in India should be complemented with a strategic discretionary policy measures, keeping in view the impact of the policy variables considered in this study on per capita NSDP to reduce inequality in regional economic growth, leading to all-inclusive growth for whole of India.

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# AN ECONOMETRIC ANALYSIS OF ENERGY CONSUMPTION IN INDIA

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**ABSTRACT**

*This paper attempts to explore the causal nexus between energy consumption and economic growth in India using Granger (1969) Causality framework. The analysis was carried out for the period 1970-71 to 2011-12. The empirical results showed a unidirectional causal flow from energy consumption to economic growth. This result in the Indian context is quite contrast to the findings of Ghosh (2005), that consumption demand for energy is driven by higher rate of economic growth in the economy. Therefore, the present study suggests that India should conserve energy or consume more energy for attaining higher growth rate in the economy. There is an urgent need to conserve energy and reduce energy requirements by demand-side management and by adopting more efficient technologies in all sectors of the economy.*

**KEYWORDS**

Energy Consumption, Economic Growth, Unit root test, Causality test.

## INTRODUCTION

Energy is one of the most important building blocks in human development, and, as such, acts as a key factor in determining the economic development of all countries. In an effort to meet the demands of a developing nation, the Indian energy sector has witnessed a rapid growth. Areas like the resource exploration and exploitation, capacity additions, and energy sector reforms have been revolutionized. However, resource augmentation and growth in energy supply have failed to meet the ever increasing demands exerted by the multiplying population, rapid urbanization and progressing economy. Hence, serious energy shortages continue to plague India, forcing it to rely heavily on imports.

Energy has been universally recognized as one of the most important inputs for economic growth and human development. There is a strong two-way relationship between economic development and energy consumption. On one hand, growth of an economy, with its global competitiveness, hinges on the availability of cost-effective and environmentally benign energy sources, and on the other hand, the level of economic development has been observed to be reliant on the energy demand. Energy intensity is an indicator to show how efficiently energy is used in the economy. The energy intensity of India is over twice that of the matured economies, which are represented by the OECD (Organization of Economic Co-operation and Development) member countries. India's energy intensity is also much higher than the emerging economies—the Asian countries, which include the ASEAN member countries as well as China. However, since 1999, India's energy intensity has been decreasing and is expected to continue to decrease.

The indicator of energy–GDP (gross domestic product) elasticity, that is, the ratio of growth rate of energy to the growth rate GDP, captures both the structure of the economy as well as the efficiency. The energy–GDP elasticity during 1953–2001 has been above unity. However, the elasticity for primary commercial energy consumption for 1991–2000 was less than unity (Planning Commission 2002). This could be attributed to several factors, some of them being demographic shifts from rural to urban areas, structural economic changes towards lesser energy industry, impressive growth of services, improvement in efficiency of energy use, and inter-fuel substitution.

The energy sector in India has been receiving high priority in the planning process. The total outlay on energy in the Tenth Five-year Plan has been projected to be 4.03 trillion rupees at 2001/02 prices, which is 26.7% of the total outlay. An increase of 84.2% is projected over the Ninth Five-year Plan in terms of the total plan outlay on energy sector. The Government of India in the mid-term review of the Tenth Plan recognized the fact that under-performance of the energy sector can be a major constraint in delivering a growth rate of 8% GDP during the plan period. It has, therefore, called for acceleration of the reforms process and adoption of an integrated energy policy. In the recent years, the government has rightly recognized the energy security concerns of the nation and more importance is being placed on energy independence.

## DEMAND AND SUPPLY SCENARIO

India's energy consumption has been increasing at one of the fastest rates in the world due to population growth and economic development. Primary commercial energy demand grew at the rate of six per cent between 1981 and 2001 (Planning Commission 2002). India ranks fifth in the world in terms of primary energy consumption, accounting for about 3.5% of the world commercial energy demand in the year 2003. Despite the overall increase in energy demand, per capita energy consumption in India is still very low compared to other developing countries.

India is well-endowed with both exhaustible and renewable energy resources. Coal, oil, and natural gas are the three primary commercial energy sources. India's energy policy, till the end of the 1980s, was mainly based on availability of indigenous resources. Coal was by far the largest source of energy. However, India's primary energy mix has been changing over a period of time.

Despite increasing dependency on commercial fuels, a sizeable quantum of energy requirements (40% of total energy requirement), especially in the rural household sector, is met by non-commercial energy sources, which include fuel wood, crop residue, and animal waste, including human and draught animal power. However, other forms of commercial energy of a much higher quality and efficiency are steadily replacing the traditional energy resources being consumed in the rural sector. Resource augmentation and growth in energy supply has not kept pace with increasing demand and, therefore, India continues to face serious energy shortages. This has led to increased reliance on imports to meet the energy demand.

### COAL

India now ranks third amongst the coal producing countries in the world. Being the most abundant fossil fuel in India till date, it continues to be one of the most important sources for meeting the domestic energy needs. It accounts for 55% of the country's total energy supplies. Through sustained increase in investment, production of coal increased from about 70 MT (million tonnes) (MoC 2005) in early 1970s to 382 MT in 2004-05. Most of the coal production in India comes from open pit mines contributing to over 81% of the total production while underground mining accounts for rest of the national output (MoC 2005). Despite this increase in production, the existing demand exceeds the supply. India currently faces coal shortage of 23.96 MT. This shortage is likely to be met through imports mainly by steel, power, and cement sector (MoC 2005). India exports insignificant quantity of coal to the neighbouring countries. The traditional buyers of Indian coal are Bangladesh, Bhutan, and Nepal. The development of core infrastructure sectors like power, steel, and cement are dependent on coal. About 75% of the coal in the country is consumed in the power sector (MoC 2005).

### POWER

Access to affordable and reliable electricity is critical to a country's growth and prosperity. The country has made significant progress towards the augmentation of its power infrastructure. In absolute terms, the installed power capacity has increased from only 1713 MW (megawatts) as on 31 December 1950 to 118 419 MW as on March 2005 (CEA 2005). The all India gross electricity generation, excluding that from the captive generating plants, was 5107 GWh (gigawatt-hours) in 1950 and increased to 565 102 GWh in 2003-04 (CEA 2005).

Energy requirement increased from 390 BkWh (billion kilowatt-hours) during 1995/96 to 591 BkWh (energy) by the year 2004-05, and peak demand increased from 61 GW (gigawatts) to 88 GW over the same time period. The country experienced energy shortage of 7.3% and peak shortage of 11.7% during 2003/04. Though, the growth in electricity consumption over the past decade has been slower than the GDP's growth, this increase could be due to high growth of the service sector and efficient use of electricity.

Per capita electricity consumption rose from merely 15.6 kWh (kilowatt-hours) in 1950 to 592 kWh in 2003-04 (CEA 2005). However, it is a matter of concern that per capita consumption of electricity is among the lowest in the world. Moreover, poor quality of power supply and frequent power cuts and shortages impose a heavy burden on India's fast-growing trade and industry.

**OIL AND NATURAL GAS**

The latest estimates indicate that India has around 0.4% of the world's proven reserves of crude oil. The production of crude oil in the country has increased from 6.82 MT in 1970-71 to 33.38 MT in 2003-04 (MoPNG 2004b). The production of natural gas increased from 1.4 BCM (billion cubic metres) to 31.96 BCM during the same period. The quantity of crude oil imported increased from 11.66 MT during 1970-71 to 81 MT by 2003-04. Besides, imports of other petroleum products increased from 1 MT to 7.3 MT during the same period. The exports of petroleum products went up from around 0.5 MT during 1970-71 to 14 MT by 2003-04. The refining capacity, as on 1 April 2004, was 125.97 MTPA (million tonnes per annum). The production of petroleum products increased from 5.7 MT during 1970-71 to 110 MT in 2003-04.

India's consumption of natural gas has risen faster than any other fuel in the recent years. Natural gas demand has been growing at the rate of about 6.5% during the last 10 years. Industries such as power generation, fertilizer, and petrochemical production are shifting towards natural gas. India's natural gas consumption has been met entirely through domestic production in the past. However, in the last 4 to 5 years, there has been a huge unmet demand of natural gas in the country, mainly required for the core sectors of the economy. To bridge this gap, apart from encouraging domestic production, the import of LNG (liquefied natural gas) is being considered as one of the possible solutions for India's expected gas shortages. Several LNG terminals have been planned in the country. Two LNG terminals have already been commissioned: (1) Petronet LNG Terminal of 5 MTPA (million tonnes per annum) at Dahej, and (2) LNG import terminal at Hazira. In addition, an in-principle agreement has been reached with Iran for import of 5 MTPA of LNG.

**RENEWABLE ENERGY SOURCES**

Renewable energy sources offer viable option to address the energy security concerns of a country. Today, India has one of the highest potentials for the effective use of renewable energy. India is the world's fifth largest producer of wind power after Denmark, Germany, Spain, and the USA. There is a significant potential in India for generation of power from renewable energy sources—small hydro, biomass, and solar energy. The country has an estimated SHP (small-hydro power) potential of about 15 000 MW. Installed combined electricity generation capacity of hydro and wind has increased from 19,194 MW in 1991-92 to 31,995 MW in 2003-04, with a compound growth rate of 4.35% during this period (MoF 2005). Other renewable energy technologies, including solar photovoltaic, solar thermal, small hydro and biomass power are also spreading. Greater reliance on renewable energy sources offers enormous economic, social, and environmental benefits.

The potential for power production from captive and field-based biomass resources, using technologies for distributed power generation, is currently assessed at 19,500 MW including 3500 MW of exportable surplus power from bagasse-based cogeneration in sugar mills (MNES 2005).

**ENERGY CONSUMPTION-GROWTH NEXUS**

Increasing pressure of population and increasing use of energy in different sectors of the economy is an area of concern for India. As regard the relative consumption of various sources of energy as percent of the world total, India occupies the third place following China and Japan among the emerging Asian economies. This raises the question whether India's energy consumption levels commensurate with levels of economic growth similar to other high as well as low energy consuming economies of the Asian region. In this context, this paper attempts to investigate the impact of energy consumption on economic growth rate in India. The prime motivation of the study relates to addressing the puzzle of the increasing levels of energy consumption to induce economic growth in the event of the increasing cost associated with it as well as apprehensions regarding its sustained supply in future. Therefore, the study undertakes an empirical analysis, towards verifying this nexus of energy consumption and economic growth and suggesting policies that strikes a balance between consumption and conservation of energy in sustaining and speeding up the growth momentum of the economy.

## METHODOLOGY AND DATA

Augmented Dickey-Fuller (1979) test was employed to verify the stationarity of the data series. Further, the necessary lag length of the data series was selected on the basis of Akaike (1974) Information Criterion (AIC). Besides, the Granger (1969) causality test was employed to examine the short-run relationship between energy consumption and gross domestic product. Granger (1969) causality test regresses a variable y on a lagged value of itself and another variable x. If x is significant; it means that it explains some of the variance of y that is not explained by lagged values of y itself. This indicates that x is causally prior to y and said to dynamically cause or Granger cause y. The model can be specified as follows:

$$y_t = \sum_{j=1}^{m} \alpha_j y_{t-j} + \sum_{j=1}^{m} \beta_j x_{t-j} + u_t \quad \text{..... (1)}$$

The model specification for the study is presented below:

$$\Delta lnEC_t = c_1 + \sum_{k=1}^{n} \alpha_{1i} \Delta lnEC_{t-k} + \sum_{k=1}^{n} \beta_{2i} \Delta lnGDP_{t-k} + u_{1t} \quad \text{.....(2)}$$

$$\Delta lnGDP_t = c_2 + \sum_{k=1}^{n} \beta_{1i} \Delta lnGDP_{t-k} + \sum_{k=1}^{n} \alpha_{2i} \Delta lnEC_{t-k} + u_{2t} \quad \text{.....(3)}$$

where, $\Delta$ is the first difference operator and $u_{1t}$ and $u_{2t}$ are white noise disturbance terms. $EC_t$ and $GDP_t$ represents energy consumption and gross domestic product at time t, respectively.

The time series database on energy consumption and real gross domestic product (GDP) were on annual basis and it covers from the period 1970-71 to 2011-12. The study considers aggregate energy consumption that comprises coal, natural gas, crude petroleum and electricity. The energy consumption variable is expressed as a ratio to GDP in order to measure them as per unit of output. Growth rate of GDP is defined as the change in the GDP in two consecutive periods divided by its initial period value. The necessary information on aggregate energy consumption and GDP were collected from the various issues of www.indiastat.com and Central Statistical Organisation (CSO).

## EMPIRICAL RESULTS AND DISCUSSION

As for the preliminary steps of the analysis, the present study tested the underlying stochastic process that generated the series assumed to be invariant with respect to time. If the stochastic process is stationary then one can model the process with an Ordinary Least Square (OLS) regression and the fixed coefficient can be estimated from the present data. The investigation of stationary in a time series is closely related to the unit roots test. For that the study employed Augmented Dickey Fuller (1979) test for unit roots. The results of the unit root are shown in Table 1. According to the Augmented Dickey Fuller test results shown in Table 1, the null hypothesis of a unit root for all the variables is not rejected in the case of levels. However, when the series are first differenced, the coefficient of all the variables is significant at one per cent level. Further, the optimal lags for unit root test are selected through Akaike (1974) Information Criterion (AIC). From the above Augmented Dickey Fuller test result we conclude that both the series are found to be stationary.

**TABLE 1: AUGMENTED DICKEY-FULLER TEST FOR UNIT ROOTS**

| Sr. No. | Variables | Constant | Constant & Trend | Without Constant & Trend |
|---|---|---|---|---|
| **I Levels** | **$EC_t$** | -0.353 | -0.348 | 0.002 |
| | | (3.100) | (3.032) | (0.192) |
| | **$GDP_t$** | -0.021 | -0.640 | 0.001 |
| | | (1.143) | (1.305) | (1.813) |
| **II First Difference** | **$EC_t$** | -1.692 | -2.698 | -2.689 |
| | | (13.004)* | (12.985)* | (13.031)* |
| | **$GDP_t$** | -1.879 | -1.877 | -1.742 |
| | | (7.967)* | (7.930) | (7.509)* |

Note: Parenthesis shows t-value, * (**) – indicates statistical significance at the one and five per cent level respectively, Critical values for t-statistics are followed from Dickey and Fuller (1979), optimal lag-length, is determined by the Akaike (1974) Information Criterion (AIC). $EC_t$ and $GDP_t$ represents energy consumption and gross domestic product at time t, respectively.

Source: Author's own computation.

The Granger (1969) causality test was employed to examine the short-run relationship between energy consumption and gross domestic product and its results are presented in Table-2. The Granger causality test result showed that there is a causal influence of energy consumption to GDP growth rate. This result in the Indian context is quite contrast to the findings of Ghosh (2005), that consumption demand for energy is driven by higher rate of economic growth in the economy. Therefore, the present study suggests that India should conserve energy or consume more energy for attaining higher growth rate in the economy. There is an urgent need to conserve energy and reduce energy requirements by demand-side management and by adopting more efficient technologies in all sectors of the economy.

**TABLE 2: PAIR-WISE GRANGER CAUSALITY TESTS**

| Null Hypothesis: | F-Statistic | Probability |
|---|---|---|
| GDP does not Granger Cause EC | 1.86397 | 0.11395 |
| EC does not Granger Cause GDP | .46769* | 0.00133 |

Source: Author's own computation.

Notes: $EC_t$ and $GDP_t$ represent energy consumption and gross domestic product at time t, respectively. *-significance at one percent level.

## CONCLUDING REMARKS

This paper attempts to explore the causal nexus between energy consumption and economic growth in India using Granger (1969) Causality framework. The analysis was carried out for the period 1970-71 to 2011-12. The empirical results showed a unidirectional causal flow from energy consumption to economic growth. This result in the Indian context is quite contrast to the findings of Ghosh (2005), that consumption demand for energy is driven by higher rate of economic growth in the economy. Therefore, the present study suggests that India should conserve energy or consume more energy for attaining higher growth rate in the economy. There is an urgent need to conserve energy and reduce energy requirements by demand-side management and by adopting more efficient technologies in all sectors of the economy.

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# BOARD MEMBERSHIP AND THE SOCIAL SECURITY BENEFITS: A COMPARATIVE STUDY OF KERALA AND TAMIL NADU

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**ABSTRACT**

*This paper focuses on the district wise analysis of various benefits distributed by the Kerala Building and Other Construction Workers Welfare Fund Board (KBOCWWFB) among its members. Since the Board membership is primarily meant for protecting the members and to act as a helping hand to them, it is imperative to analyze how a worker is benefited on becoming a member of the Board especially through its social security schemes. In order to fine tune the effectiveness of various schemes offered by the Kerala Board, an attempt is also made to compare it with Tamil Nadu Construction Workers Welfare Fund Board (TNCWWFB). In order to avail benefits of the various schemes, a member of KBOCWWFB has to contribute a fixed amount of Rs 20/- every month apart from his registration fee of Rs 25/-. However, a member can pay Rs 60/- at a stretch for a period of 3 months. A comparison of the working of Tamil Nadu Board and Kerala Board revealed that under Tamil Nadu Board the member need not pay the monthly contribution in order to be eligible to get the benefits of various schemes. Due to the peculiar nature of trade union movement in the state, Kerala Board is providing more benefits to its members. However, certain benefits provided by Tamil Nadu Board are unique in nature and is more effective in its implementation.*

**KEYWORDS**
Construction workers, Welfare benefits, Social security schemes, Kerala, Tamil Nadu.

## INTRODUCTION

In the last five decades, considerable progress in extension of social security cover at both State and Central levels has been made. State Governments like Kerala, Tamil Nadu and West Bengal have introduced social security schemes providing insurance and other benefits to certain occupational groups in the unorganized sector. However, there is considerable controversy about the social and economic effects of social security. Social security is said to discourage people from working and saving; and encourage people to withdraw from the labour market prematurely. On the other hand, social security can also be seen to have a number of very positive economic effects. Provision of social assistance will enhance their ability to contribute to the nation as well as their emotional security which leads to increase their efficiency and productivity and enable them to tide over periods of unemployment, sickness, accident or death coupled with the promise of an assured monthly income to them and their family in old age.

Social security in India was traditionally the responsibility of the family or community in general. With the gradual process of industrialization and urbanization, break up of the joint family set up and weakening of family bondage, the need for institutionalized and State-cum-society regulated social security arrangement to address the problem in a planned manner, has been felt necessary. Eradication of poverty incidence remains a major challenge for the planned economic development and the experience of India shows that different states followed varied policies and principles for poverty reduction and economic growth. The states like Punjab and Haryana followed the path of agricultural growth and succeeded in reducing poverty and Kerala focused on human resource development. Though the state lags behind many of the Indian states in the matter of economic growth, Kerala has a leading position among the development experience of other states in India which is reflected in high Physical Quality Life Index (PQLI), long life expectancy, low-infant mortality, low-birth-death rate, high literacy rate, *etc.*

## STATEMENT OF THE PROBLEM

Social Welfare Scheme has a place of paramount importance in the national economy in securing the financial security of their members. Social security for workers in the unorganized sector is a subject that has received growing research attention in India. The available studies mainly cover the formal social security programmes. The concept of social security in the informal sector is of recent origin. Very few studies have been made and that too on a restricted basis. The published literature on the subject is limited to a few government reports and articles only. It may be noted that though studies on social security in general are numerous, studies on the impact of Welfare Fund Boards on the workers are scanty. The studies highlight the general socio economic background of the construction workers and the nature and functioning of construction labour markets. In Kerala, despite the burgeoning construction and related activities, surprisingly very few studies have been made to analyze the different dimensions of the construction industry as a major form of economic activity. The present study is an attempt to examine the implementation of various social security schemes of KBOCWWFB and its impact on the construction workers in Kerala.

## OBJECTIVES OF THE STUDY

1. To expose the socio economic conditions of construction workers in Kerala.
2. To analyze and compare the structure and functioning of Kerala Building and Other Construction Workers Welfare Fund Board (KBOCWWFB) and Tamil Nadu Construction Workers Welfare Fund Board (TNCWWFB).
3. To analyze the consequences of the implementation of the scheme and evaluate the role of the Board in uplifting the socio economic conditions of its members.
4. To attempt an empirical investigation of the nature and trend of benefits to the registered members of the Board.
5. To analyze whether the members are satisfied with the service of the Board.
6. To examine critically the role of trade unions and its leaders in enrolment and disbursement of the benefits of the Board.
7. To identify aberrations, if, any, in the working of the Board and to make suggestions in the light of findings to improve the work efficiency and services of the Board.

## REVIEW OF LITERATURE

As the State has implemented more than 20 welfare schemes for the unorganized sector and spent huge amount on various social security schemes, certain attempts have been made to study the characteristic features of construction industry and the effectiveness of Social Security Schemes for the workers in the unorganized sector in Kerala.

A study on unemployment by Dolly Sunny (2000) found that in Kerala high priority was given for expansion of social and general services while production and employment-oriented projects were either neglected or ignored.

Padmajan K (2001) wrote a series in 'Mathrubhumi' daily narrating the problems in the construction sector in Kerala; especially in the context of restrictions and regulations in the sand taking from the riverside.

Kurien, John and Paul, Antonyoto (2001) attempt to explain the provision of social security in the fisheries sector of Kerala. It enumerates the salient achievements and the problems faced by the state in providing concrete social security measures for fish workers.

Kurien P.H (2001) outlined the salient features of welfare schemes for different sections of the working classes in Kerala and lists the problems of the schemes especially the disproportionate distribution of benefits under various schemes. There is no rationale for having different types of benefits to different professionals in the informal sector and also it is unfair to underestimate a particular worker group, which contributes equally to the national economy. This class difference can create social conflict. He suggested the government to consider unified comprehensive social security coverage.

Report of the working group on social security for the tenth Five Year Plan (2002-2007), Government of India; Planning Commission- 2001 took a stock of the existing frame work of social security schemes and the constraints both in the organized sector and unorganized sector.

Kannan K. P. (2002) in his working paper on the welfare fund model of social security for informal workers examined the evolution of the institution of 'Welfare Funds' for informal sector workers in Kerala and viewed that the ever-increasing demand for Welfare Funds for each and every sub-sector of the informal sector may be viewed as a desperate reaction of the workers for a measure of social security in an unprotected labour market.

Ignatius Pereira (2003) discussed reports about the seriousness of the role of labour mafia with the backing of powerful trade unions. He observed that trade unions are compelling to give employment to the workers given in the list supplied by them in some parts of the state of Kerala.

John C.P (2004) through a socio-psychological analysis of the pensioners of the KBOCWWFB showed that the breakdown of the joint family system and the emergence of the nuclear family system create socio-psychological tensions in the lives of the elderly population. Personal and family liabilities compel a good proposition of the elderly construction workers to engage in some kind of economic activities. Programmes will have to be developed to promote family values and invigilate the young generation on the necessity and desirability of inter-generational bonding and continuity. He offers some comments and suggestions to improve the welfare of the construction workers and the activities of KBOCWWFB.

Rosa K.D in her study (2004) found that wage rates in the construction sector are very high in Kerala ranging from Rs 100/- to Rs 150/- per day for women and Rs 150/- to Rs 200/- for men. For skilled workers it is as high as Rs 275/- per day.

## RESEARCH METHODOLOGY

To analyze the regional differences, a district wise comparison was made. To pinpoint the impact of KBOCWWFB on its members, a comparison of Tamil Nadu Construction Workers Welfare Fund Board (TNCWWFB) and Kerala Board on selected parameters were tried.

Both primary and secondary data were used for the present study. A well-drafted interview schedule was used to collect data from the respondents. Pre-testing of the schedule was conducted by administering it on a small sample in Malappuram district. The interview schedule was modified in the light of the suggestions received. The first part of the interview schedule evaluates the socio–cultural, educational and family background of the construction workers and the second part is entirely devoted to questions, which indirectly measure the impact of the Board on its members. Primary data for the study were collected from the members. The primary data were supplemented by collecting information through interviews with trade union leaders, contractors, architects and engineers who are associated with construction work. In addition, information was also gathered by holding discussions with members and Chairman of the Managing Committee of the Board and other Officials.

The performance and functioning of the Board was primarily analyzed by collecting secondary data from the offices of Kerala Building and Other Construction Workers Welfare Fund Board, Tamil Nadu Construction Workers Welfare Fund Board, offices of other Welfare Fund Boards in Kerala, Labour department; Government of Kerala, the publications and records of various trade unions, Department of Economics and Statistics, Kerala Planning Board and other related agencies.

Four districts were selected for the purpose of the study. The districts selected were Thiruvananthapuram as the capital of the state, Ernakulam as the district in which construction activities take place on a mass scale, Malappuram as the district where the people spent a major portion of their earnings from gulf countries on construction activities and Wayanad as the district having least construction activities and lowest number of membership in the Welfare Fund Board. Stratified random sampling technique was used for the purpose of the sampling. The sample size is selected under proportional allocation method. As the districts having construction activities on a large scale, equal number of members and non members (300 each) were selected from the districts of Thiruvananthapuram, Ernakulam and Malappuram, and as a district having the least construction activity, only 100 members each were selected from Wayanad.

For the purpose of analysis of the collected data, simple mathematical and statistical techniques like percentages, averages, CAGR, Standard Deviations etc were used. For analytical purpose of primary data Microsoft Excel and *Statistica* software programme have been used. The statistical technique of Chi-square test was used to analyze the significant difference of various parameters among different districts.

The period of this study covers the whole life of the Board since its inception in 1990. However, the fieldwork for the study was conducted during 2005-2007.

**DEFINITIONS OF THE TERMS USED**

1. The Board: The Kerala Building and Other Construction Workers Welfare Fund Board, constituted as per The Building and Other Construction Workers (Regulations of Employment and Conditions of Service) Kerala Rules[4] 1998.
2. Member: A construction worker who has enrolled to The Kerala Building and Other Construction Workers Welfare Fund Board
3. Non-member: A construction worker who has not enrolled to The Kerala Building and Other Construction Workers Welfare Fund Board.
4. Welfare Fund Schemes: Welfare Fund Schemes under the Kerala Building and Other Construction Workers Welfare Fund Board for the construction workers.
5. Construction Worker: Any person who is employed for wages to do any work in connection with a construction work and who gets his wages directly or indirectly from an employer or from a contractor including supply of materials for construction works.

## DATA ANALYSIS AND INTERPRETATION

**PENSION BENEFIT**

On retirement at the age of 60, a member is entitled to get monthly pension apart from the refund of his monthly contribution along with the interest accumulated there on. A member who has been working as a building worker for not less than one year is eligible for pension. However, it is heartening to note that a worker under the Tamil Nadu Board, in order to be eligible for pension benefits should have a minimum of 5 years registered experience under the Board. The minimum pension amount is fixed at Rs 200/- per month; an additional amount of Rs 20/- per month will be added to the pension for every additional year of service. However, the maximum pension amount is restricted to Rs 400/- per month. It was noted in the study that the TNCWWFB provides pension at a flat rate of Rs 400/- per month irrespective of the length of membership in the Board. It is high time that the pension amount under KBOCWWFB is to be increased in the changed circumstances.

[4]. Published in Kerala Gazette Ex No-1366 dt 17-8-1998, as SRO No 720/93 & G O (P)No.53/98/LBR dt 14-8-1998.

The study (Table 1) show that 35 members of the sample received pension. The average amount of pension received by these pensioners was Rs 9998.51 with a standard deviation of Rs 5875.96.

**TABLE 1: PENSION AMOUNT**

| District | Number | Mean | SD |
|---|---|---|---|
| Ernakulam | 25 | 12987.20 | 3793.69 |
| Malappuram | 2 | 3394.00 | 1405.73 |
| Wayanad | 0 | 0.00 | 0.00 |
| Thiruvananthapuram | 8 | 2310.00 | 2480.71 |
| **Total** | **35** | **9998.51** | **5875.96** |

Source: Survey Data

In addition to the Superannuation pension the Board also provides family pension and invalid pension. The number of Family pensioners as on 31st March 2007 was 2857 and that of invalid pensioners was 602.

The growth of pension disbursement over the years is indicated in Table 2. It can be seen that, as of March 2007, about 79309 registered workers were enjoying this benefit. In that year pensioners constituted almost 82 per cent of the total beneficiaries and payment of pensions amounted to 88.89 per cent of the total amount of benefits disbursed. Thus the Board is incurring a substantial expenditure towards pension payment and this is increasing rapidly.

**TABLE 2: GROWTH OF PENSION BENEFICIARIES AND AMOUNT OF PENSION DISBURSED**

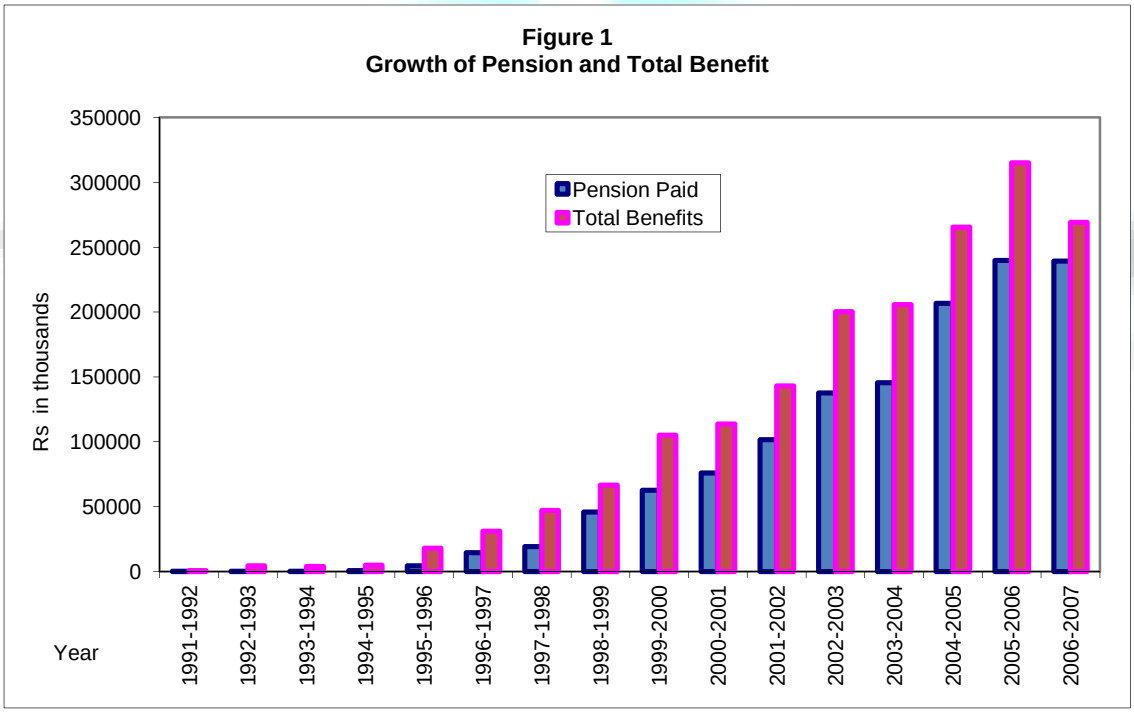
| Years | Pension Paid | | Total Benefits | Pension as a percentage of total benefits |
|---|---|---|---|---|
| | Number | Amount Rs | Rs | |
| 1991-1992 | 1 | 150 | 597250 | 00.02 |
| 1992-1993 | 47 | 49425 | 4350275 | 01.14 |
| 1993-1994 | 241 | 216975 | 3788380 | 05.73 |
| 1994-1995 | 715 | 675939 | 4903227 | 13.80 |
| 1995-1996 | 4047 | 4473880 | 18004877 | 24.85 |
| 1996-1997 | 8418 | 14475262 | 30968542 | 46.74 |
| 1997-1998 | 11491 | 19134220 | 46960412 | 40.75 |
| 1998-1999 | 17794 | 45824418 | 66563730 | 68.84 |
| 1999-2000 | 24384 | 62644967 | 104960635 | 59.68 |
| 2000-2001 | 37730 | 75876223 | 113664703 | 66.75 |
| 2001-2002 | 31338 | 101494543 | 143101693 | 70.92 |
| 2002-2003 | 39841 | 137502649 | 200316943 | 68.64 |
| 2003-2004 | 45792 | 145610338 | 205842218 | 70.74 |
| 2004-2005 | 59514 | 206609370 | 265411363 | 77.84 |
| 2005-2006 | 73860 | 239859688 | 314941164 | 76.16 |
| 2006-2007 | 79309 | 239241832 | 269148664 | 88.89 |
| **TOTAL** | **434522** | **1293689879** | **1793524076** | **72.13** |
| **CAGR** | **112.13** | **159.13** | **50.28** | |

Source: Annual Reports of KBOCWWF.

From the Table 2, it can also be found that while the total benefits paid show a compound annual growth rate (CAGR) of 50.28 percent, the number of pensioners showed a growth rate of 112.13 per cent and the amount of pension benefits showed 159.13 per cent of growth rate.

In the initial years, pension was only a small percentage of the total benefit, 0.02 percent in 1991-1992, which reached to 88.89 per cent of the total benefit during 2006-2007. It was less than 25 per cent of total benefits up to the year 1995-1996. From 1994-1995 onwards, many members became eligible for pension on superannuation and the pension liability of the Board increased at a higher rate; *i.e.,* 13.80 per cent of the total benefit. From 1998-1999 onwards, pension amount constitute more than 50 per cent of the total benefits and it reached above 70 per cent from 2003-2004 onwards.

**FIGURE 1: SHOWS THE GROWTH OF PENSION AMOUNT AND TOTAL BENEFITS.**



**ADEQUACY OF PENSION AMOUNT**

It is quite natural that people would like to get an increase in the benefits they get from others especially from government. This is also true in the case of construction workers.

Table 3 shows that more than 50 per cent of the members viewed the present pension amount is inadequate. They suggest increase ranging from Rs 500/- to 1000/-. 8.20 per cent of the members not responded to this question, which may be mainly due to their lack of awareness about the pension amount. The remaining 40.30 per cent of the members are satisfied with the existing pension amount. The district wise analysis reveals that 61.33 per cent of the sample workers from the Malappuram district, 58.67 per cent of members from Ernakulam district, 40 per cent of the members from the Thiruvananthapuram district and 35 per cent of the members from the Wayanad district are not satisfied with the existing rate of pension. On the other hand around 50 per cent of members from Wayanad and Thiruvananthapuram districts are satisfied with the prevailing pension amount. About 15 per cent of the members from Wayanad district and 10.67 per cent from the Malappuram district not responded to this question.

**TABLE 3: ADEQUACY OF EXISTING BENEFITS**

| Pension Amount | Adequacy | District | | | | Total |
|---|---|---|---|---|---|---|
| | | Ernakulam | Malappuram | Wayanad | Thiruvananthapuram | |
| | Adequate | 38.00 | 28.00 | 50.00 | 51.67 | 40.30 |
| | Not adequate | 58.67 | 61.33 | 35.00 | 40.00 | 51.50 |
| | No response | 3.33 | 10.67 | 15.00 | 8.33 | 8.20 |
| | Total | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** |
| Family Pension | Adequate | 37.00 | 50.67 | 28.00 | 31.00 | 38.40 |
| | Not Adequate | 63.00 | 42.67 | 68.00 | 69.00 | 59.20 |
| | No response | 0.00 | 6.67 | 4.00 | 0.00 | 2.40 |
| | Total | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** |
| Invalid pension | Adequate | 23.67 | 31.33 | 37.00 | 24.00 | 30.20 |
| | Not adequate | 76.33 | 62.67 | 59.00 | 76.00 | 67.60 |
| | No response | 0.00 | 6.00 | 4.00 | 0.00 | 2.20 |
| | Total | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** |
| Medical benefit | Adequate | 37.33 | 49.67 | 28.00 | 37.33 | 40.10 |
| | Not adequate | 62.67 | 42.33 | 39.00 | 62.33 | 54.10 |
| | No response | 0.00 | 8.00 | 33.00 | 0.33 | 5.80 |
| | Total | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** |
| Maternity Benefit | Adequate | 37.00 | 50.67 | 28.00 | 35.67 | 39.80 |
| | Not adequate | 63.00 | 42.33 | 63.00 | 64.00 | 57.10 |
| | No response | 0.00 | 7.00 | 9.00 | 0.33 | 3.10 |
| | Total | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** |
| Marriage Benefit | Adequate | 37.00 | 53.33 | 32.00 | 34.00 | 40.50 |
| | Not adequate | 61.67 | 39.67 | 68.00 | 66.00 | 57.00 |
| | No response | 1.33 | 7.00 | 0.00 | 0.00 | 2.50 |
| | Total | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** |
| Educational Assistance | Adequate | 37.00 | 51.33 | 28.00 | 45.67 | 43.00 |
| | Not adequate | 63.00 | 42.67 | 72.00 | 54.00 | 55.10 |
| | No response | 0.00 | 6.00 | 0.00 | 0.33 | 1.90 |
| | Total | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** |
| Housing Loan | Adequate | 37.00 | 51.67 | 32.00 | 34.33 | 40.10 |
| | Not adequate | 63.00 | 42.33 | 67.00 | 65.67 | 58.00 |
| | No response | 0.00 | 6.00 | 1.00 | 0.00 | 1.90 |
| | Total | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** |
| Death Benefit | Adequate | 37.00 | 52.00 | 28.00 | 31.00 | 38.80 |
| | Not adequate | 63.00 | 42.00 | 64.00 | 69.00 | 58.60 |
| | No response | 0.00 | 6.00 | 8.00 | 0.00 | 2.60 |
| | Total | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** |
| Funeral Assistance | Adequate | 37.00 | 50.67 | 28.00 | 31.00 | 38.40 |
| | Not adequate | 63.00 | 43.33 | 68.00 | 69.00 | 59.40 |
| | No response | 0.00 | 6.00 | 4.00 | 0.00 | 2.20 |
| | Total | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** |

Source: Survey Data

**FAMILY PENSION AMOUNT**

In the event of death of a pensioner or of a member who attained the age of 60 and becomes eligible for pension, the surviving spouse is eligible for family pension at the rate of 50 percent of the pension received by the pensioner (Rule 301). The minimum amount of family pension is Rs 100/- and the maximum amount is limited to Rs 200/-.

Table 3 also shows the concern of the members regarding the pension amount, which their family gets after their death. Only 38.40 per cent of the members agree that the existing family pension is sufficient; 59.20 per cent of the members are ready to say that the family pension is not adequate and there was no response from 2.40 per cent of the members regarding adequacy of the family pension.

The district wise analysis of the data shows that while 50.67 per cent of sample members from Malappuram district are satisfied with the existing family pension amount; only 28 per cent of the members from Wayanad district are satisfied. It can also be seen that only 6.67 per cent of members in Malappuram district and 4 per cent members from Wayanad district were not responded to this question. The percentage of members who are not satisfied with the prevailing family pension amount is 69 per cent in the case of Thiruvananthapuram, 68 per cent in the case of Wayanad district and 63 per cent in the case of Ernakulam district.

**INVALIDITY PENSION**

After one-year service in the Board whenever a worker is unable to work due to disease or accident he/she is entitled to an invalidity pension based on the certificate from the Medical Board. Invalidity pension is fixed at the rate of Rs 150/- per month and is disbursed through a money order. Further, an ex-gratis payment is made up to Rs 10,000/-, according to the degree of disability. As stated earlier the Board now pays invalidity pension to 602 members.

The survey data also revealed that only 30.20 per cent of the members, 31.33 per cent from Malappuram district and 37 per cent from Wayanad district, 23.67 per cent from Ernakulum district and 24 per cent from the Trivandrum district are satisfied with the existing amount of invalid pension. Majority of the members, 67.60 per cent, are not satisfied with the prevailing invalid pension amount and state that the invalid pension needs revision.

**MEDICAL ASSISTANCE**

Medical benefit is yet another important aspect that attracts the workers in the construction sector to the Welfare Fund Board. The Board may sanction financial assistance to the beneficiaries who are hospitalized for five or more days due to accident or any disease. The medical assistance given at present is very meager especially in the wake of the increasing medical expenses.

Presently the assistance is Rs 300/- for 5 days and Rs 50/- for every additional day subject to a maximum of Rs 5000/-. In the case of personal disability, the maximum assistance is extended to Rs 10,000/. Apart from these the Board also organizes special medical camps occasionally. This facility could be availed by all those who come under the purview of the Board. During the survey members suggested that the Board should bear the hospital expense in full, considering the nature of the work and the risk of accidents involved in it.

The Board has recognized a number of government as well as private hospitals in every district as approved hospitals for members' use. The medical benefit received by the sample members in various districts is portrayed in Table 4.

**TABLE 4: MEDICAL ASSISTANCE**

| District | Number | Mean | SD | P-level |
|---|---|---|---|---|
| Ernakulam | 35 | 2928.57 | 916.70 | 0.000000 |
| Malappuram | 22 | 1405.00 | 1139.48 | |
| Wayanad | 19 | 2131.58 | 573.54 | |
| Thiruvananthapuram | 14 | 2000.00 | 0.00 | |
| **Total** | **90** | **2243.44** | **1031.64** | |

Source: Survey Data

From the survey it was found that out of a sample of 1000 members, only 90 members received medical benefits, which constitute only 9 per cent of the sample. The Table 4 shows that the average amount received by these beneficiaries was only Rs 2243.44 with a standard deviation of Rs 1031.64.

The district wise analysis of the survey data reveals that the members from Ernakulam district received more medical assistance compared to other sample districts. It was seen that 11.67 per cent of the sample members of the district (35 members out of 300) received medical assistance; while in the case of Malappuram 7.33 of the sample (22 out of 300); and in Thiruvananthapuram it is only 4.67 per cent (14 out of 300).

The average amount of assistance received is highest in Ernakulam district, *i.e.* Rs 2928.57 with a standard deviation of 916.70. But the standard deviation of Malappuram district is 1139.48, which is highest among other sample districts. The standard deviation of the medical assistance received by the members of Thiruvananthapuram district is zero and that of Wayanad district is 573.54.

It may be noted that as per Tamil Nadu Board there is no practice of providing medical benefit for the Board members. The medical benefit distributed by the Kerala Board is shown in Table 5.

**TABLE 5: MEDICAL BENEFITS DISTRIBUTED**

| Year | No of beneficiaries | Amount sanctioned Rs | Total benefit paid Rs | Expenditure as a per cent of total welfare benefits |
|---|---|---|---|---|
| 1991-1992 | - | - | 597250 | - |
| 1992-1993 | 93 | 67200 | 4350275 | 01.54 |
| 1993-1994 | 342 | 248260 | 3788380 | 06.51 |
| 1994-1995 | 441 | 289780 | 4903227 | 05.91 |
| 1995-1996 | 1314 | 747430 | 18004877 | 04.14 |
| 1996-1997 | 1918 | 1196390 | 30968542 | 03.86 |
| 1997-1998 | 245 | 1749944 | 46960412 | 03.72 |
| 1998-1999 | 2639 | 1693847 | 66563730 | 02.54 |
| 1999-2000 | 9253 | 4665382 | 104960635 | 04.44 |
| 2000-2001 | 6237 | 3073179 | 113664703 | 02.70 |
| 2001-2002 | 4211 | 4338750 | 143101693 | 03.03 |
| 2002-2003 | 6153 | 8725066 | 200316943 | 04.36 |
| 2003-2004 | 5121 | 7487230 | 205842218 | 03.64 |
| 2004-2005 | 6982 | 10130353 | 265411363 | 03.82 |
| 2005-2006 | 5466 | 5298766 | 314941164 | 01.68 |
| 2006-2007 | 1720 | 1897922 | 269148664 | 00.71 |
| **Total** | **52135** | **51609499** | **1793524076** | **02.88** |
| **CAGR** | **23.1695** | **26.9511** | **50.2873** | |

Source: *Annual Reports of KBOCWWFB.*

Although this is an important source of relief for the disabled and sick workers, the amount spent on this item constituted only a small proportion of the total welfare benefits sanctioned by the Board each year. During the year 2006-2007, medical benefit constitutes only 0.71 per cent of total benefits. As a percentage of total benefit, it was found maximum during the year 1993-1994 as in that year it accounts 6.50 per cent of the total benefits.

Table 5 also shows the annual growth rate of the number and amount of medical benefit given. The number of beneficiaries shows an annual growth of 23.17 percent, while the amount of medical benefits shows an annual growth of 26.95 per cent against 50.29 per cent of total benefits growth rate.

**ADEQUACY OF MEDICAL BENEFIT**

The Board in Tamil Nadu insures all registered construction workers under Group Personal Accident Insurance Scheme of ICICI Insurance Company, but Kerala Board has not implemented this scheme since the premium payable to the insurance company is found to be much higher than the benefits derived there from. Consequently, the medical and death benefits are paid out of the resources of the Board.

The study also reveals the opinion of members regarding the adequacy amount of medical benefit given by the Board. Table 3 shows that only 40.10 per cent of the members are satisfied with the medical assistance provided by the Board; 54.10 per cent of members are not satisfied with the existing medical benefit and the remaining 5.80 per cent of the members, due to their lack of knowledge regarding the benefit, not disclosed their opinion regarding the adequacy of medical benefit.

**MATERNITY BENEFIT**

This is an important social security benefit enjoyed by women workers in the sector who have completed one year of membership in the Board. Construction is a sector where a large number of women workers are engaged, but the enrollment of these workers in to the Board is not satisfactory.

The Board provides for payment of maternity benefit of Rs 3000/- to women members for their two deliveries. However, the percentage of female employees who received this benefit so far is very low.

As given in Table 6 the survey data revealed that only 14 members of Thiruvananthapuram district received this benefit. It was observed that most of the female members were not aware of the existence of these benefits. Even the members who are aware of the scheme are reluctant to apply for the same considering the lengthy and complicated procedural formalities involved in it.

The average amount of assistance received by the sample workers of Thiruvananthapuram district was Rs 2357.14 with a standard deviation of Rs 497.25.

**TABLE 6: MATERNITY BENEFITS**

| District | Number | Mean | SD |
|---|---|---|---|
| Ernakulam | 0 | 0.00 | 0.00 |
| Malappuram | 0 | 0.00 | 0.00 |
| Wayanad | 0 | 0.00 | 0.00 |
| Thiruvananthapuram | 14 | 2357.14 | 497.25 |
| **Total** | **14** | **2357.14** | **497.25** |

Source: Survey

The amounts so far disbursed by the Board on this account are shown in the Table 7.

**TABLE 7: MATERNITY BENEFIT DISBURSED BY THE BOARD**

| Year | No of beneficiaries | Amount sanctioned Rs | Total benefit paid Rs | Expenditure as a per cent of total welfare benefits |
|---|---|---|---|---|
| 1991-1992 | 3 | 900 | 597250 | 0.20 |
| 1992-1993 | 148 | 47600 | 4350275 | 1.10 |
| 1993-1994 | 244 | 115200 | 3788380 | 3.02 |
| 1994-1995 | 595 | 196400 | 4903227 | 4.00 |
| 1995-1996 | 447 | 189200 | 18004877 | 1.05 |
| 1996-1997 | 609 | 551500 | 30968542 | 1.78 |
| 1997-1998 | 1196 | 931500 | 46960412 | 1.98 |
| 1998-1999 | 976 | 976000 | 66563730 | 1.48 |
| 1999-2000 | 1486 | 1486000 | 104960635 | 1.42 |
| 2000-2001 | 1506 | 1521000 | 113664703 | 1.34 |
| 2001-2002 | 1597 | 2940000 | 143101693 | 2.05 |
| 2002-2003 | 2843 | 5685000 | 200316943 | 2.84 |
| 2003-2004 | 2706 | 5409000 | 205842218 | 2.63 |
| 2004-2005 | 2089 | 4177000 | 265411363 | 1.57 |
| 2005-2006 | 2783 | 5560000 | 314941164 | 1.77 |
| 2006-2007 | 1248 | 2496000 | 269148664 | 0.93 |
| **Total** | **20476** | **32282300** | **1793524076** | **1.80** |

Source: Annual Reports of KBOCWWFB.

Women constitute on an average 23 per cent of the registered workers in the state as a whole, yet the amount of maternity benefit disbursed by the Board is less than 2 per cent of the total welfare benefits disbursed each year. This is due to the fact that most of these women have crossed the normal reproductive age group and have grown-up children, even of marriageable age. This benefit is found maximum as a percentage of total benefit during the year 1994-1995, 4 per cent of total benefits.

However, a women worker under TNCWWFB is eligible at the rate of Rs 1000/- per month for a period of 6 months. Thus, in Tamil Nadu the maternity benefit is double than that given by KBOCWWFB. Further, in Tamil Nadu women members get Rs 1000/- per month for 3 months, in case of miscarriage or termination. But, there is no such provision under Kerala Board.

**ADEQUACY OF MATERNITY ASSISTANCE**

From Table 3, it was found that only 39.80 per cent of the members; 50.67 per cent from Malappuram district and 35.67 per cent from Thiruvananthapuram districts are satisfied with maternity assistance offered by the Welfare Fund Board. It has been seen that 57.10 per cent of the members; 63 per cent from Ernakulam and Wayanad districts and 64 per cent from Thiruvananthapuram districts viewed that the maternity benefit is insufficient and has to be enhanced. There was no response to this from 3.10 per cent of the members.

**MARRIAGE ASSISTANCE**

After three continuous years of live membership, a member is eligible for marriage benefit for himself/herself and for his/her sons and daughters. Women workers and daughters of members receive Rs 3,000/-, while male members and sons of members receive only Rs 2,000/- under this scheme. In both the cases, these benefits are limited to the marriage of two children only.

It is evident from the data in Table 8 that during the initial years the amount disbursed under this benefit was small. But it gathered momentum form 1996-97 and by 2001-02 it constituted 16 per cent of the total benefits disbursed. In the year 2004-2005 there was a decline in the marriage assistance as a percentage of total benefit; reduced to 13.33 per cent of the total benefit. During 2005-2006, the percentage of marriage assistance has risen to 17.19 per cent of the total benefit; but in 2006-2007, it is only 7.57 per cent of the total benefit.

**TABLE 8: MARRIAGE ASSISTANCE GIVEN BY THE BOARD**

| Year | No of beneficiaries | Amount disbursed Rs | Total benefit paid Rs | Expenditure as a per cent of total welfare benefits |
|---|---|---|---|---|
| 1991-1992 | - | - | 597250 | - |
| 1992-1993 | - | - | 4350275 | - |
| 1993-1994 | 5 | 25000 | 3788380 | 00.65 |
| 1994-1995 | 504 | 252000 | 4903227 | 05.10 |
| 1995-1996 | 1021 | 548500 | 18004877 | 03.00 |
| 1996-1997 | 2639 | 4240500 | 30968542 | 13.70 |
| 1997-1998 | 4463 | 8925500 | 46960412 | 19.00 |
| 1998-1999 | 4914 | 9828500 | 66563730 | 14.90 |
| 1999-2000 | 8249 | 16497600 | 104960635 | 13.70 |
| 2000-2001 | 7043 | 15653685 | 113664703 | 13.50 |
| 2001-2002 | 9321 | 23401600 | 143101693 | 16.00 |
| 2002-2003 | 13223 | 39431000 | 200316943 | 19.68 |
| 2003-2004 | 12929 | 40004000 | 205842218 | 19.43 |
| 2004-2005 | 13184 | 35394000 | 265411363 | 13.33 |
| 2005-2006 | 20470 | 54141000 | 314941164 | 17.19 |
| 2006-2007 | 7651 | 20372000 | 269148664 | 07.57 |
| **Total** | **105616** | **268714885** | **1793524076** | **14.98** |

Source: Annual Reports of KBOCWWFB.

The survey data (Table 9) reveals that 93 members received this assistance and the average amount received by them is Rs 3043.01 with a standard deviation of Rs 965.87.

**TABLE 9: MARRIAGE ASSISTANCE**

| District | Number | Mean | SD |
|---|---|---|---|
| Ernakulam | 35 | 3714.29 | 1177.52 |
| Malappuram | 37 | 2729.73 | 450.23 |
| Wayanad | 5 | 3000.00 | 0.00 |
| Thiruvananthapuram | 16 | 2312.50 | 478.71 |
| **Total** | **93** | **3043.01** | **965.87** |

Source: Survey Data

**ADEQUACY OF MARRIAGE ASSISTANCE**

As shown in Table 3, the percentage of members satisfied with the amount of marriage assistance provided by the Welfare Fund Board is 40.50; more than 50 percentage of members from Malappuram district and about one third of the members from the remaining sample districts. The members not responded to this come only 2.50 percent. The survey also revealed that 57 per cent of the members are not satisfied with the present assistance; 39.67 per cent from Malappuram district and about two-third of the members from the remaining sample districts.

**EdUCATIONAL ASSISTANCE**

It is a known fact that most of the workers in the construction sector are educationally backward. Realizing this fact, the Board included provision for payment of scholarships and cash awards to various courses from high school to post graduate studies. The details of various scholarships and its eligibility criteria are given in Table 10.

Children of registered construction workers who have completed one year of live membership are eligible for scholarships for various post-metric studies. A cash award is also granted to the children of members who secure the highest marks for SSLC examination in each district.

**TABLE 10: RATE OF SCHOLARSHIPS GIVEN BY THE BOARD FOR VARIOUS COURSES**

| Sl. No. | Name of Courses | Rate of scholarships (Rs per year) |
|---|---|---|
| 1 | School Final | 250 |
| 2 | Plus 2/VHSE/THC/TTC/Certificate courses, Nursery Teachers Training | 600 |
| 3 | ITI/ITC/JTS | 720 |
| 4 | Poly technique courses/JDC | 900 |
| 5 | Computer courses/PG courses, Nursing diploma (General), B.Ed./M.Ed.? HDC/CA/Journalism | 1200 |
| 6 | PGDCA/Paramedical courses, Professional courses/MBA/ MCA/Health Inspector course/LLB | 2400 |
| 7 | Degree courses/DTP/MBT | 840 |

Source: Survey Data

The analysis of the scholarships to the sample respondents is given in Table 11.

**TABLE 11: CASH AWARDS AND SCHOLARSHIPS**

| District | Number | Mean | SD |
|---|---|---|---|
| Ernakulam | 11 | 681.82 | 183.40 |
| Malappuram | 59 | 495.42 | 332.92 |
| Wayanad | 0 | 0.00 | 0.00 |
| Thiruvananthapuram | 56 | 1322.32 | 1767.17 |
| **Total** | **126** | **879.21** | **1260.60** |

Source: Survey Data

A comparison of the scheme with that of Tamil Nadu Board showed that while the Kerala Board was providing Rs 250/- to Rs 2400/- as the educational assistance, the Tamil Nadu Board provides Rs 1000/- to Rs 6000/-. This shows that the amount provided by the Kerala Board is too meager. Kerala is a state that claims to be cent percent literate and gives much incentive for educational purpose. Thus, it is suggested that the amount under this scheme of the Board is to be increased to a minimum of Rs 1000/-.

**ADEQUACY OF EDUCATIONAL ASSISTANCE**

The Table 3 shows that the percentage of members satisfied with the prevailing scholarship amount is 43 and out of the remaining members 55.10 per cent is not satisfied with the existing rate of scholarships. Among the members of Thiruvananthapuram district 54 per cent of the members are not satisfied with the prevailing rate of scholarship given by the Board and in the case of Wayanad district 72 per cent of the members are not satisfied with the Welfare Fund Board's assistance of education. It can be seen that 42.67 per cent of members from the Malappuram district and 63 per cent of the members from Ernakulam express their dissatisfaction regarding the amount of assistance provided by the Board.

**HOUSING LOAN GRANTED BY THE WELFARE FUND BOARD**

The Board has formulated different schemes at different times for solving the housing problem of the members. After five years of service plus another 15 years for superannuation, a registered member is eligible for a house-building advance of Rs 50,000/- for the construction of residential house. It can be drawn in two installments, and carries a nominal rate of interest. But the Board insists the surety of two government employees and therefore, many members are not getting this advance, as they are not capable of producing this surety. Even though a novel scheme 'Nirmal Bhavan Padhathi' was introduced by the Board; it could not be implemented due to many practical difficulties. As shown in Table 12, maximum number of members received this assistance was during the year 1999-2000; 452 members. During 2003-2004 only 12 members received this assistance. The Board has not paid any house-building advance from 2004-2005 onwards.

**TABLE 12: HOUSE BUILDING ADVANCE**

| Year | No | Amount in Rs |
|---|---|---|
| 1998-1999 | 204 | 5107810 |
| 1999-2000 | 452 | 16607760 |
| 2000-2001 | 39 | 13910000 |
| 2001-2002 | 242 | 8360000 |
| 2002-2003 | 75 | 3450000 |
| 2003-2004 | 12 | 340000 |
| 2004-2005 | 0 | Nil |
| **Total** | **1024** | **47775570** |

Source: Annual Reports of KBOCWWFB.

The number, average and standard deviation of the amount of House Building Advance distributed among the respondents in the sample districts are given in Table 13.

**TABLE 13: HOUSE BUILDING ADVANCE**

| District | Number | Mean | SD |
|---|---|---|---|
| Ernakulam | 1 | 10000.00 | 0.00 |
| Malappuram | 5 | 18000.00 | 4472.14 |
| Wayanad | 0 | 0.00 | 0.00 |
| Thiruvananthapuram | 13 | 26538.46 | 13751.46 |
| **Total** | **19** | **23421.05** | **12478.05** |

Source: Survey Data

The survey data reveals that more than 20 per cent of the respondents do not have houses of their own. Only 19 members (1.90 per cent of the sample) constructed houses with the assistance of the Board and the mean of the assistance received by them was Rs 23421.05 with a standard deviation of Rs 12478.05.

It may be noted that under Tamil Nadu Welfare Fund Board, this facility of housing loan is not granted to its members.

**ADEQUACY OF HOUSING LOAN**

The study as given in Table 3 shows that 40.10 per cent of the members agree with the amount advance given by the Board to build houses; 51.67 per cent from Malappuram district and around 1/3 of members from the other sample districts. The members express their concern over the legal requirements to get advance from the Board. It could also be seen that 1.90 per cent of the respondent does not express any opinion regarding the amount of house building advance and 67 per cent from Wayanad district, 65.67 per cent from Thiruvananthapuram district, 63 per cent from Ernakulam district and 42.33 per cent from Malappuram district state that the existing house building scheme has to be liberalized.

It was also observed that the members are not well aware of the existence of a scheme of providing house building advance and even those who are aware, were not ready to take this due to the difficulties and legal complications involved in it like the insistence of the surety of two government employees, which would be difficult to the common people like construction workers.

**DEATH BENEFIT**

If registered member dies before reaching the age of 60, an amount of Rs 15,000/- is paid to the nominees of the deceased worker. If the death results from an accident at work, his/her nominee is eligible for Rs 1,00,000/- as accidental death relief. A member who is permanently disabled as a result of an accident at work is entitled to Rs 50,000/-. If the member has not filed a proper nomination, family members are entitled to receive benefit, in the following order:

1. Wife/Husband
2. Minor son/daughter
3. Unmarried son /daughter
4. Dependent parents
5. Widowed daughter
6. Widowed daughter- in- law

The amounts disbursed by the Board on this account for various years are shown in Table 14.

**TABLE 14: DISBURSEMENT OF DEATH BENEFITS**

| Year | No of beneficiaries | Amount disbursed Rs | Total benefit paid Rs | Expenditure as a per cent of total welfare benefits |
|---|---|---|---|---|
| 1991-1992 | 56 | 560000 | 597250 | 93.80 |
| 1992-1993 | 393 | 3925000 | 4350275 | 90.20 |
| 1993-1994 | 295 | 2950000 | 3788380 | 77.40 |
| 1994-1995 | 226 | 2241333 | 4903227 | 45.70 |
| 1995-1996 | 898 | 8145522 | 18004877 | 45.20 |
| 1996-1997 | 523 | 6188590 | 30968542 | 20.00 |
| 1997-1998 | 1678 | 7995020 | 46960412 | 17.00 |
| 1998-1999 | 3085 | 12087269 | 66563730 | 18.40 |
| 1999-2000 | 1084 | 16757050 | 104960635 | 16.30 |
| 2000-2001 | 1371 | 18713375 | 113664703 | 15.20 |
| 2001-2002 | 1691 | 20038136 | 143101693 | 14.30 |
| 2002-2003 | 1956 | 23214430 | 200316943 | 11.59 |
| 2003-2004 | NA | NA | 205842218 | - |
| 2004-2005 | 2741 | NA | 265411363 | - |
| 2005-2006 | 1966 | NA | 314941164 | - |
| 2006-2007 | NA | NA | 269148664 | - |
| **Total** | **17963** | **122815725** | **1793524076** | **6.85** |

Source: Annual Reports of KBOCWWFB.

Death benefit in the Table 14 also includes the benefits paid for fatal accidents, which happened while at work. In the initial years of the functioning of the Board, death benefit was one of the major items for which relief was provided and hence expenditure on this item constituted a major part of the welfare benefit. During the period 1991-1992 to 1993-1994, this benefit constituted more than 75 per cent of the total benefits. In 1996-1997 this benefit constitutes only 20 per cent of the total benefits. When other welfare measures such as marriage assistance, maternity benefit, and scholarship/cash awards were started, the proportion of expenditure on this item fell to less than 15 per cent.

**ADEQUACY OF DEATH BENEFIT**

From the survey, as shown in the Table 3, it can be seen that only 38.80 per cent of the respondents are satisfied with the present death relief, while 58.60 per cent of the members are not satisfied with the relief amount on death and 2.60 per cent of the members did not respond to this question. Among the districts, 69 per cent from Thiruvananthapuram, 64 per cent from Wayanad, 63 per cent from Ernakulam and 42 per cent of members from Malappuram district state that the death benefit is inadequate.

**FUNERAL ASSISTANCE**

Dependents of a deceased worker get funeral assistance of Rs 1000/- and it has recently increased to Rs 2000/-. As on 31st March 2007, 8642 dependents of members have benefited out of this scheme. As shown in Table 15, in every year the Board gives this benefit to the dependents of more than 1000 members. This also shows the number of members dying in every year. This benefit was paid to the maximum members dependents during the year 2002-2003; as number of beneficiaries during that year is 1823. In 1999-2000, the number of beneficiaries of this benefit is only 1162, *i.e.* the lowest during the past 10 years. The amount of funeral assistance given by the Tamil Nadu Board is also the same i.e. Rs 2000/-.

**TABLE 15: FUNERAL ASSISTANCE**

| Year | Number | Amount Rs |
|---|---|---|
| 1998-1999 | 1452 | 1014500 |
| 1999-2000 | 1162 | 1162000 |
| 2000-2001 | 1366 | 1366000 |
| 2001-2002 | 1284 | 1284000 |
| 2002-2003 | 1823 | 1822500 |
| 2003-2004 | 1555 | 1555000 |
| 2004-2005 | 1529 | 1528500 |
| 2005-2006 | 1674 | 1673500 |
| 2006-2007 | 1346 | 1346000 |
| **Total** | **13191** | **12752000** |

Source: Annual Reports of KBOCWWFB.

**ADEQUACY OF FUNERAL ASSISTANCE**

As the amount of funeral assistance given is very less (Table 3), 59.40 per cent of the sample is not satisfied with the existing amount of assistance. Only 38.40 per cent of the members; 50.67 per cent from Malappuram district, 37 per cent from the Ernakulam district, 31 per cent from Thiruvananthapuram district and 28 per cent from the Wayanad district are satisfied with the existing Funeral assistance.

**TOTAL BENEFITS**

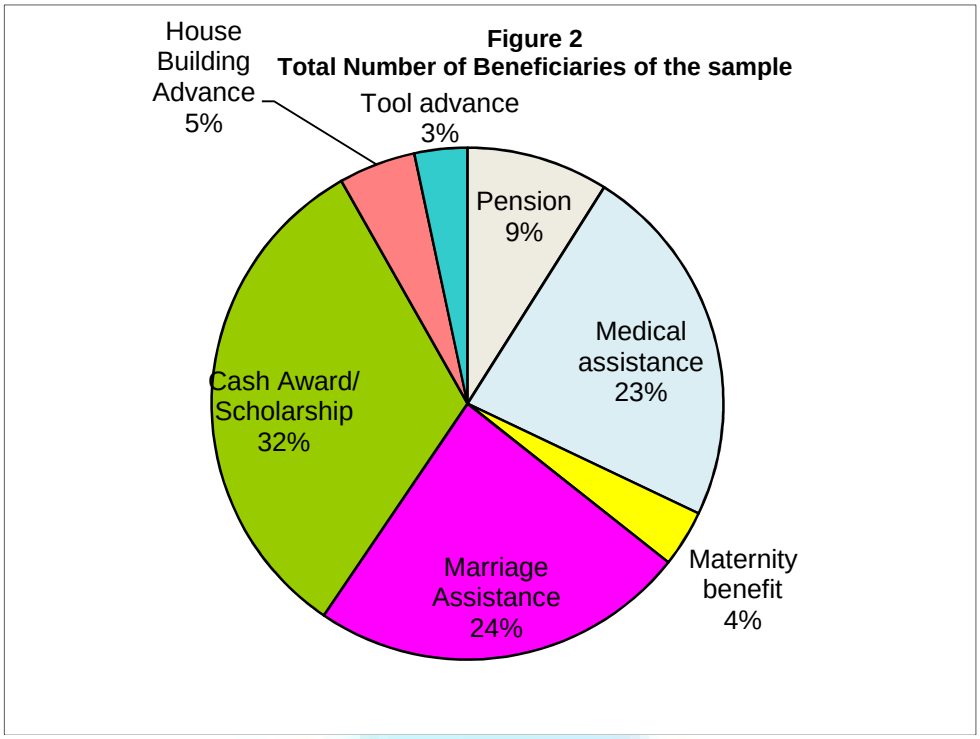
Even though the Board gives more than a dozen of benefits, significant difference exist in the type of assistance, number of beneficiaries and amount of assistance. Table 16 shows that 39 per cent of the sample members get some type of assistance from the Board. However, around one-third of the members received cash award or scholarship for the education of their children; the average amount of benefit received by way of cash award or scholarship is only Rs 879.21.

**TABLE 16: TOTAL BENEFITS**

| Sl. No. | Type of assistance | No of beneficiaries | Percentage of beneficiaries | Average assistance | Standard deviation |
|---|---|---|---|---|---|
| 1 | Pension | 35 | 3.50 | 9998.51 | 5875.96 |
| 2 | Medical assistance | 90 | 9.00 | 2243.44 | 1031.64 |
| 3 | Maternity benefit | 14 | 1.40 | 2357.14 | 497.25 |
| 4 | Marriage Assistance | 93 | 9.30 | 3043.01 | 965.87 |
| 5 | Cash Award/Scholarship | 126 | 12.60 | 879.21 | 1260.60 |
| 6 | House Building Advance | 19 | 1.90 | 23421.05 | 12478.05 |
| 7 | Tool advance | 13 | 1.30 | 2769.23 | 438.53 |
| **Total** | | **390** | **39.00** | | |

Source: Survey Data

**FIGURE 2: SHOWS THE NUMBER OF BENEFICIARIES OF THE SAMPLE**




As given in the Table 17, the district wise analysis of the total benefits shows that the beneficiaries as a per cent of sample is highest in Malappuram district (42.67 per cent) and lowest in Wayanad district (24.00 per cent). The beneficiaries as a percentage of the sample in the case of Thiruvananthapuram district (40.33 per cent) is also more than the state average of 39.00 per cent; and in the case of Ernakulam district, it is equal to the state average.

**TABLE 17: BENEFICIARIES AS A PERCENTAGE OF SAMPLE MEMBERS IN THE DISTRICT**

| District | Number | Total sample | Beneficiaries as a per cent of sample | Mean | SD |
|---|---|---|---|---|---|
| Ernakulam | 117 | 300 | 39.00 | 5928.24 | 4977.50 |
| Malappuram | 128 | 300 | 42.67 | 2295.03 | 3695.98 |
| Wayanad | 24 | 100 | 24.00 | 2921.05 | 1397.05 |
| Thiruvananthapuram | 121 | 300 | 40.33 | 5199.32 | 9814.38 |
| **Total** | **390** | **1000** | **39.00** | **4305.72** | **6610.85** |

Source: Survey Data

From the survey it can be found that the average amount of total benefit received is highest (Rs 5928.24) in Ernakulam district with a standard deviation of Rs 4977.50.

Though the Board offers various benefit schemes, it was reported during the survey that members expressed a lot of difficulties in getting the benefits sanctioned to them. The role of intermediaries like political and trade union leaders was the most important hurdle reported by the members. The survey showed that out of those who received the benefits 50.74 per cent faced this difficulty in receiving benefits. The maximum difficulty in getting benefit was faced by the members of Wayanad district (about 74 per cent). The members of the Capital District Thiruvananthapuram faced lesser difficulty in receiving benefits as they have easy access to the Board office, since the Board Head Quarters is situated at Thiruvananthapuram.

**OTHER SCHEMES AND BENEFITS**

Apart from the schemes and benefits discussed above, the Board has introduced some new schemes for the benefit of the Board members and their family. New schemes include Advanced Building Technology Institute, *Sneha Sadan* (Old age Home) and *Nirmal Bhavan Padhathi* (House Building Scheme). Since the recent data on these schemes are not available, an attempt is made here to ascertain the extent of awareness about these new schemes among the members. The study reveal that more than half of the members (52.40 percent) are not aware of these new schemes and only 13.60 per cent of the members are aware of all schemes. The percentage of the members who are aware of the schemes like Advanced Building Technology Institute, Old Age Home (Sneha Sadan) and Nirmal Bhavan Padhathi are only 7.90 percent, 8.10 per cent and 4.60 per cent respectively. It was also observed that the Board has not effectively implemented the *Nirmal Bhavan Padhathi* and therefore the members were not aware of the scheme.

**AWARENESS OF THE WELFARE SCHEMES OF THE BOARD**

Though the Board is providing numerous benefits to its members, surprisingly many of the members are not aware of these schemes. It is a fact that many of the members are not even aware that they are members of the KBOCWWFB. The study shows that 37.10 per cent of the members are not fully aware of the welfare schemes of the Board. It is especially so in backward districts. Table 18 shows that in Wayanad district only 39 per cent of the members are fully aware of the welfare schemes of the Board.

**TABLE 18: AWARENESS OF THE WELFARE SCHEMES OF THE BOARD (in percentage)**

| | District | | | | Total |
|---|---|---|---|---|---|
| | Ernakulam | Malappuram | Wayanad | Thiruvananthapuram | |
| Aware | 61.33 | 63.33 | 39.00 | 72.00 | 62.90 |
| Not Aware | 38.67 | 36.67 | 61.00 | 28.00 | 37.10 |
| **Total** | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** |

Source: Survey Data

**EXPANSION OF BOARD ACTIVITIES**

The future of any scheme depends on the scope for expansion of its activities. Since the formation of the Board, the membership as well as the funds collected by the Board shows an increasing trend. Keeping this fact in mind, about four-fifth (81 per cent) of the members has scope for expansion of the activities of the Board. The expansion is in the form of training the members in order to update the technological change, undertaking construction activity directly by the Board, establishment and running of banks, hospitals, educational institutions, *etc*.

Table 19, shows the areas in which the Board has scope for expansion of its activities.

**TABLE 19: AREAS IN WHICH THE BOARD HAS SCOPE FOR EXPANSION**

| Expansion programmes | Number | Percentage of Members |
|---|---|---|
| Training centres or institutes | 284 | 35.02 |
| Under taking construction activity or contract | 212 | 26.14 |
| Banking activity | 437 | 53.88 |
| Sub contracting | 275 | 33.91 |
| Running of hospitals | 351 | 43.28 |
| Running educational institutions | 171 | 21.09 |
| Others | 47 | 5.80 |

Source: Survey Data

**PERIOD OF MEMBERSHIP IN THE WELFARE FUND BOARD**

The KBOCWWFB has been working in Kerala for the past 18 years. Accordingly, many of the members have a long-standing experience in the Board. In order to analyze the benefits received by the members, this factor should also be taken in to account. Thus, it is interesting to see the period of membership of the sample members (Table 20).

**TABLE 20: PERIOD OF MEMBERSHIP IN THE BOARD**

| Years of Experience | District | | | | Total |
|---|---|---|---|---|---|
| | Ernakulam | Malappuram | Wayanad | Thiruvananthapuram | |
| Below 4 | 22.67 | 11.00 | 72.00 | 27.00 | 25.40 |
| 4-7 | 20.67 | 50.33 | 19.00 | 31.67 | 32.70 |
| 8-12 | 36.00 | 26.33 | 9.00 | 34.67 | 30.00 |
| Above 12 | 20.67 | 12.33 | 0.00 | 6.67 | 11.90 |
| **Total** | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** |

Source: Survey Data

**SOURCE OF INFORMATION ABOUT THE BOARD**

How the members came to know about the Board was also looked into during the survey (Table 21).

**TABLE 21: INFORMATION ABOUT THE WELFARE FUND BOARD**

| Existence of the Welfare Fund Board | District | | | | Total |
|---|---|---|---|---|---|
| | Ernakulam | Malappuram | Wayanad | Thiruvananthapuram | |
| From trade union leaders | 59.33 | 75.67 | 12.00 | 49.67 | 56.60 |
| From board officials | 17.00 | 1.00 | 0.00 | 13.67 | 9.50 |
| Co -workers | 20.33 | 17.67 | 15.00 | 21.00 | 19.20 |
| Friends /relatives | 3.33 | 5.00 | 73.00 | 15.33 | 14.40 |
| Others | 0.00 | 0.67 | 0.00 | 0.33 | 0.30 |
| **Total** | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** |

Pearson Chi-square: 400.041, df = 12, p = 0.00000

Source: Survey Data

The survey data point out that all districts except Wayanad, majority of members got information about the Board from the trade union leaders only. This shows the significant role played by the trade union leaders in the functioning and enrolment of the Board. The members who came to know the existence of the Welfare Fund Board through trade union leaders are 59.33 per cent in Ernakulam district, 75.67 per cent in Malappuram district, 12.00 per cent in Wayanad district and 49.67 per cent in Thiruvananthapuram district. Those who got information from Board officials were 17 per cent in Ernakulam district and only 1 per cent in Malappuram district. The Board officials in the Wayanad district has not encouraged to take membership as no one in the district of Wayanad has taken membership on the persuasion of Board officials. It was also found that co-workers also play a dominant role in encouraging workers in taking membership in the Board.

**PROBLEMS FACED IN GETTING MEMBERSHIP**

Though the Board claims that 80–85 per cent of the construction workers have already registered with it, much of the workers are still out of the purview of the Board. The members reported various problems (Table 22) for getting membership in the Board.

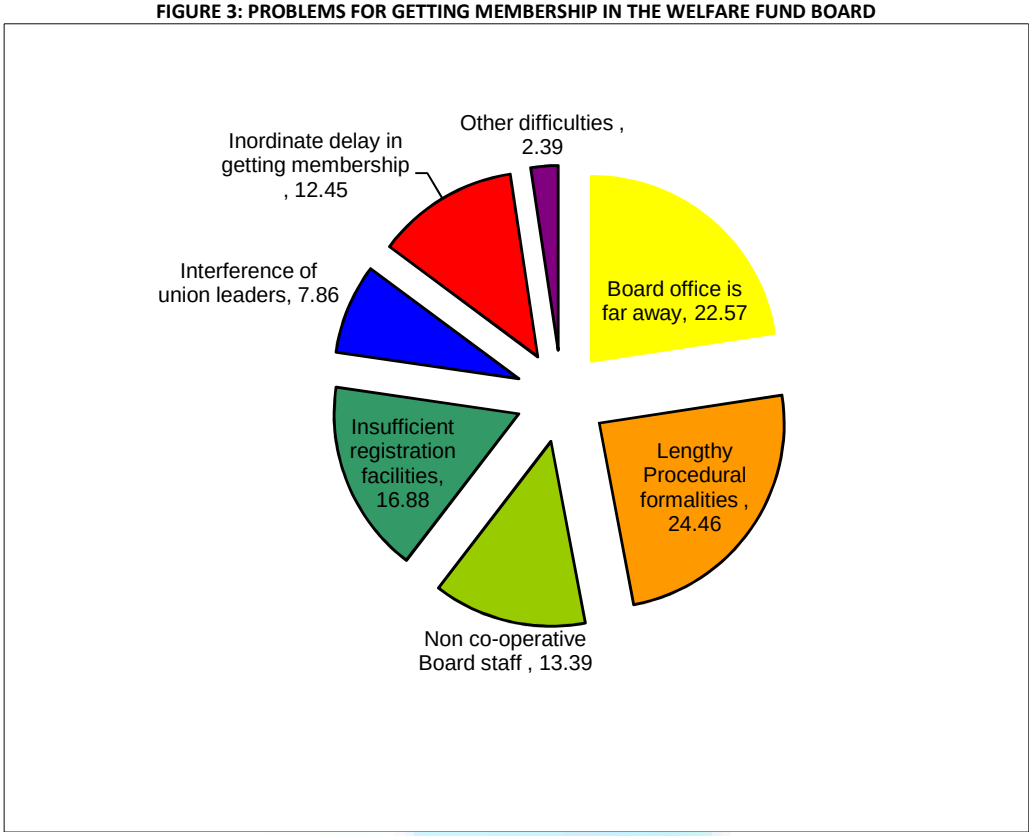
**TABLE 22: TYPE OF PROBLEMS FACED IN GETTING BOARD MEMBERSHIP**

| Problems | Percentage of Members |
|---|---|
| Board office is far away | 22.57 |
| Lengthy Procedural formalities | 24.46 |
| Non co-operative Board staff | 13.39 |
| Insufficient registration facilities | 16.88 |
| Interference of union leaders | 7.86 |
| Inordinate delay in getting membership | 12.45 |
| Other difficulties | 2.39 |
| **Total** | **100.00** |

Source: Survey Data

The study found that only 31.40 per cent of the members faced some problems in getting membership. However, many of the members are of the view that there is no difficulty in getting membership in the Board. According to them as the membership in the Board is given through trade unions, the workers are not likely to face any problem. The trade union leaders take all steps to solve the problems of the workers for getting the membership. The problems encountered by the workers for getting membership in the Welfare Fund Board are shown in Figure 3.

FIGURE 3: PROBLEMS FOR GETTING MEMBERSHIP IN THE WELFARE FUND BOARD




**GENERAL IMPROVEMENT**

The success of any scheme depends on the general improvement of its beneficiaries. The study tried to find out the general improvement of the members after enrolling in to the welfare scheme (Table 23).

**TABLE 23: GENERAL IMPROVEMENT**

| General improvement | District | | | | Total |
|---|---|---|---|---|---|
| | Ernakulam | Malappuram | Wayanad | Thiruvananthapuram | |
| Improved | 87.00 | 78.00 | 88.00 | 77.00 | 81.40 |
| Not improved | 13.00 | 22.00 | 12.00 | 23.00 | 18.60 |
| **Total** | **100.00** | **100.00** | **100.00** | **100.00** | **100.00** |

Pearson Chi-square: 15.2176, df = 3, p = .001642

Source: Survey Data

## PROBLEMS

1. There is complaint that undue delay takes place in distributing benefits to the members. Some disbursements require confirmation from the Head Office, which may result delay in disbursement and increase the administrative cost.
2. The Building Technology Institute set up by the Board at Thiruvananthapuram is not effective in providing training to the members and their dependents.
3. The functioning of the Board has resulted in intensifying the trade union activities among construction workers.
4. There is no Progress Monitoring team to review the progress of the implementation of the schemes of the Board.
5. In the KBOCWWFB, unlike that of Motor Transport WWFB, there is no practice of diverting a certain percentage of the funds for the purpose of pension.
6. Even though the Board offers a number of schemes, the workers have limited knowledge about the various benefits of the Board.
7. The incentives or benefits offered by the Board are not a major motivational factor for undertaking construction activity.

## SUGGESTIONS

1. For the systematic and effective implementation of the welfare schemes of the workers in the unorganized sector a separate wing or section under the labour or social welfare department has to be constituted.
2. The Board must institute awareness programmes among the members as well as trade union leaders about the importance of the Board as a social security measure to its members.
3. The Board must constitute a public relations wing to undertake wide publicity and awareness campaign about the various benefits given by the Board to the workers. This should be done in association with local authorities, trade unions, contractors and labour department.
4. As the labour department is already overburdened with other duties, in order to make the cess collection effective it must be entrusted to the local authorities as done in Tamil Nadu or it should be entrusted to the Board officials.
5. The present investment pattern of fund is not at all encouraging. A major portion of the investments is in the form of fixed deposits in Banks that are low yielding. Therefore, the Board must formulate a viable investment portfolio by using the services of Financial Management Experts. The political consideration should be disregarded in this respect.
6. Awareness camps to be conducted among the political and trade union leaders to ensure that only the genuine construction workers are enrolled to the Board.
7. The Board has to think of some insurance schemes so as to reduce its financial burden especially on account of its members death, illness, accident, *etc.*
8. Grievance Cell should be constituted to handle complaint about enrollment and disbursement of benefits
9. The amount of medical assistance available under the scheme has to be increased. The Board should endeavor to provide better access to modern medical facilities to the enrolled employees under the Scheme. For this purpose the Board may collaborate with insurance companies or hospitals in the State.
10. The State Government should evolve a policy for the Unified and beneficial management of funds of Welfare Boards in Kerala.

11. The Board should introduce new welfare schemes like Bonus, Holy day pay, Advance or loan for emergency purposes, *etc*.

## CONCLUSIONS

The study reveals that though there are many flaws in the implementation of various schemes of the Kerala Board, it has resulted in uplifting the economic status of construction workers. Though instituted under different Acts, both Kerala and Tamil Nadu Boards were established with more or less same objectives. Both the Boards have their own plans and policies depending on the regional differences in the labour demands. It was found that due to the peculiar nature of trade union movement in the state, Kerala Board is providing more benefits to its members. However, certain benefits provided by Tamil Nadu Board are unique in nature and is more effective in its implementation.

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# WORK LIFE BALANCE: A STUDY ON UNIVERSITY FACULTY OF SRI PADMAVATHI MAHILA VISVAVIDYALAYAM, TIRUPATI

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**ABSTRACT**

*This paper is about the 'work–life balance' issues that affect faculty working in SRI PADMAVATHI MAHILA VISVAVIDYALAYAM, Tirupati. It is concerned with those factors that influence faculty ability to achieve harmony between their preferred contribution to Teaching, Research on one side of the balance, and with their roles, responsibilities and activities in private life on the other. In this paper, Faculty was defined as those working as Assistant professors, Associate Professors and Professors in Sri Padmavathi Mahila Visvavidyalayam, Tirupati. The objective of this research is to study the work life balance and to study the stressors faced by faculty in Sri Padmavathi Mahila Visvavidyalayam, Tirupati. It also attempts to study the factors that contribute to satisfaction and factors that detract from satisfaction on career progression. The research was conducted among faculty members with Reference to Sri Padmavathi Mahila Visvavidyalayam, Tirupati. Work life balance entails attaining equilibrium between professional work and other activities, so that it reduces friction between official and domestic life. Work life balance enhances efficiency and thus, the productivity of an employee increases. The findings of this study reveal the majority of the faculty members feel comfortable in their work place irrespective of their minor personal and work place irritants. The Primary data was collected through questionnaire survey and analyzed with the help of various statistical tools. This paper attempts to identify the various factor which helps to maintain work life balance among faculty employees in Sri Padmavathi Mahila Visvavidyalayam, Tirupati.*

**KEYWORDS**
Emotional balance, Job Satisfaction, Personal life, Professional life, Work life balance, Work pressure.

## INTRODUCTION

Work-life balance is about creating and maintaining supportive and healthy work environments, which will enable employees to have balance between work and personal responsibilities and thus strengthen employee loyalty and productivity. Today's workers have many competing responsibilities such as work, children, housework, volunteering, spouse and elderly parent care and this places stress on individuals, families and the communities in which they reside. Benefits of maintaining work-life balance for both employees and the organization are obtaining better productivity from employees.

Work life balance is about effectively managing the juggling act between paid work and the other activities that are important to people. . Work-life balance has been a concern of those interested in the quality of working life and its role in the broader quality of life. Two factors that can influence work-life balance are autonomy in the workplace and family building. Times have changed, from the time the husband earned, and the wife stayed at home to the time now, when the husband earns and the wife earns too. But the wife still cooks and washes and runs the house. So, how does she balance her work with life at home? Today's career women are continually challenged by the demands of full-time work and when the day is done at the office, they carry more of the responsibilities and commitments to home. The majority of women are working 40-45 hours per week and 53% are struggling to achieve work/life balance. The interest in work-life balance issues began in the 1980s as more women entered the workplace and focused primarily on helping employees balance work and family responsibilities by offering family-friendly benefits. These practices are now aimed a work-life balance, which is a more encompassing term that reflects the desire of nearly every employee for more flexibility in their work in order to manage the competing demands of work and life outside of work. Educational institutions are regarded as knowledge industry and these are related to creation of knowledge for future generation. All other activities and industries will be meaningless, if knowledge is not created by educational institutions or faculty, people. The persons engaged in creation and imparting knowledge are very important ones for all societies and countries in the world. Effectiveness and efficiency of these persons depend upon the balance of their work life and family and personal life. People engaged in imparting education have to play a vital role in the society. In this paper an endeavour has been made to discuss about how the balance of the work life and family life of the academics working in SRI PADMAVATHI MAHILA VISVAVIDYALAYAM, Tirupati can help to be effective and efficient in their performance and achieving productivity

## REVIEW OF LITERATURE

Mohd Noor, Stanton& Young, 2009 conducted a study on work life balance. The study concedes that the ability to balance between workplace needs and personal life need is perceived as an important issue among workers globally and academics in higher education institutions.

Dundas (2008) argues that work life balance is about effectively managing the juggling act between paid work and all other activities that are important to people such as family, community activities, voluntary works, personal development and leisure and recreation.

Eikhob, Warhurt & Hauns child, 2007 examined that the articulation of work and life, cast as work-life balance, has become a key feature of much current government, practitioner and academic debate

According to a major Canadian study conducted by Lowe (2005), 1 in 4 employees experience high levels of conflict between work and family, based on work-to-family interference and caregiver strain. If role overload is included, then close to 60 percent of employees surveyed experience work-family conflict.

Broers (2005) observed that balancing a successful career with a personal or family life can be challenging and impact on a person's satisfaction in their work and personal life's role.

Guest (2002) has analysed that the work life balance has always been a concern of those interested in the quality of working life and its relation of broader quality of life.

Parasuraman and Simmers (2001) studied that how work and family role features affected work-family conflict. He also studies indicators of psychological well being among males and female workers who are self employed or organizationally employed.

Sobhavatamma (1991) examined that there are many difficulties in meeting demands of dual roles, majority of the respondents opined that office work and family work both are enjoyable. Only 30% of them felt that the time spent on children was sufficient

## NEED FOR THE STUDY

Work-life balance is about creating and maintaining supportive and healthy work environments, which will enable employees to have balance between work and personal responsibilities and thus strengthen employee loyalty and productivity. Today's women have many competing responsibilities such as work, children, housework, volunteering, spouse and elderly parent care and this places stress on individuals, families and the communities in which they reside.

Sri Padmavathi Mahila Visvavidyalayam, Tirupati is a women's state university actively functioning with different designations. The need of the study is confined to work life balance about the roles and responsibilities playing by the selected faculty members. The scope of the study is extended to the following related aspects VIZ., to know the socio-cultural profile, the level of work life balance and the factors act as stressors and by giving valuable suggestions for improvement in the University.

## RESEARCH METHODOLOGY

This study is designed to explore the work life balance of women faculty and factors that derives satisfactionThe study was conducted among faculty of Sri Padmavathi Mahila Visvavidyalyam, Tirupati, Chittoor Dt, Andhra Pradesh, India. This study is based on both primary and secondary data. Total 50 questionnaires were distributed to the who were the target respondents of this study. Only 40 responses were received. By administering self-made questionnaire to the sample units (40) generated the primary data with regard to work-life balance levels of women faculty. This study is based on exploratory analysis and the required data for analysis were collected through a well structured questionnaire that has questions on demographic profile of the respondents, factors which contribute most to the satisfaction and factors that act as stressors. In the study, non-probability sampling (convenience sampling) method has been used. The secondary data are collected from the books, journals, websites etc. A

### AREA OF THE STUDY

The study covered the faculty members of various designations like Professors, Associate Professors, Assistant Professors of Sri Padmavathi Mahila Visvavindyalaya, Tirupati.

### SAMPLING TECHNIQUE

This study is an empirical research based on the survey method. The information was collected from the sample respondents with the help of an interview schedule. The primary data was collected by taking 40 sample respondents

### STATISTICAL TOOLS

In this study the tabulated data were formulated using the statistical tools of simple percentage analysis, ranking analysis and chi-square to interpret the data.

## STATEMENT OF THE PROBLEM

In recent years there has been an increasing trend in balancing the work life of women employees. As an academicians in an University, women faculty is having various works related to research, teaching, administration work and in personal life women has to play various roles like wife, mother, daughter-in-law to look after their spouse, in-laws, dependants and children. In between these dual roles, how faculty members working in university are balancing their work life.

It is identified that there is a need for research work in this field about the women faculty working in Sri Padmavathi Mahila Visvavidyalayam, Tirupati. The research deals with the following questions like

1. What is the demographic profile of the Faculty?
2. Whether the faculty is balancing their work life?
3. What are the factors that act as stressors?

## OBJECTIVES OF THE STUDY

1. To know the socio-cultural characteristics of the faculty of Sri Padmavathi Mahila Visvavidyalayam
2. To analyze the factors that contribute most to satisfaction and factors that detract from satisfaction with current job or career progression
3. To find out the relationship between the demographic characteristics and level of work life balance

## HYPOTHESIS OF THE STUDY

1. There is no significant relationship between the age group and level of work life balance
2. There is no significant relationship between the Designation and level of work life balance
3. There is no balancing in work life of the faculty in SRI PADMAVATHI MAHILA VISVAVIDYALAYAM

## ANALYSIS AND INTERPRETATION

The collected data were analyzed using the appropriate statistical tools mentioned in the research methodology. The objective-wise analysis and their interpretation are presented in this section

### PERCENTAGE ANALYSIS

The various socio-economic characteristics considered for this study are respondent's age group, marital status, designation and experience.

**TABLE 1: DISTRIBUTION OF SAMPLE RESPONDENTS ACCORDING TO THEIR AGE**

| Sl.No. | Age in Group | Respondents | Percentage |
|---|---|---|---|
| 1 | 21-30 years | 02 | 5 |
| 2 | 31-40 years | 12 | 30 |
| 3 | 41-50 years | 18 | 45 |
| 4 | 50 & above | 08 | 20 |

Source: Primary Data

From the above table 1, it is inferred that 45% of the respondents are between 41-50 years age group, whereas 30% of the respondents are between 31-40 years and 20% of the respondents are in the age group of 50 & above, only 5% of the respondents are in 21-30 years age group.

**TABLE 2: DISTRIBUTION OF SAMPLE RESPONDENTS ACCORDING TO THEIR MARITAL STATUS**

| Sl.No. | Marital status | Respondents | Percentage |
|---|---|---|---|
| 1 | Married | 28 | 70 |
| 2 | Unmarried | 04 | 10 |
| 3 | Divorced | 01 | 3 |
| 4 | Widowed | 07 | 17 |

Source: Questionnaire

**From the above table 2, it is fou**nd that 70% of the respondents are married, 17% of the respondents are widowed and 10% are unmarried and only 3% are divorced

**TABLE 3: DISTRIBUTION OF SAMPLE RESPONDENTS ACCORDING TO THEIR DESIGNATION**

| Sl.No. | Designation | Respondents | Percentage |
|---|---|---|---|
| 1 | Professor | 20 | 50 |
| 2 | Associate professor | 16 | 40 |
| 3 | Assistant Professor | 04 | 10 |

Source: Questionnaire

The above table 3 shows that 50% of the respondents are Professors, 40 % of the respondents are Associate Professors and 10% are Assistant Professors.

**TABLE 4: DISTRIBUTION OF SAMPLE RESPONDENTS ACCORDING TO THEIR EXPERIENCE**

| Sl.No. | Experience | Respondents | Percentage |
|---|---|---|---|
| 1 | 7-10 years | 04 | 10 |
| 2 | 10-20 years | 24 | 60 |
| 3 | More than 20 years | 12 | 30 |

Source: Questionnaire

From the above table 4, it is clear that 60% of the respondents are having more than 10-20 years of experience, 30 % of the respondents are having more than 20 years of experience and 10% of the respondents are having 7 to 10 years of experience.

**TABLE 5: DISTRIBUTION OF SAMPLE RESPONDENTS ACCORDING TO THEIR NATURE OF THE FAMILY**

| Sl.No. | Nature of the family | Respondents | Percentage |
|---|---|---|---|
| 1 | Nuclear family | 36 | 90 |
| 2 | Joint family | 04 | 10 |

Source: Questionnaire

The above table 5 shows that 90% of the respondents belong to nuclear family and 10% of the respondents are belong to joint family.

**TABLE 6: DISTRIBUTION OF SAMPLE RESPONDENTS ACCORDING TO THE TYPE OF DEPENDANTS IN THE FAMILY**

| Sl.No. | Dependants | Respondents | Percentage |
|---|---|---|---|
| 1 | Older people | 8 | 20 |
| 2 | Dependent adults | 5 | 12 |
| 3 | Adults with disabilities | 2 | 5 |
| 4 | Children with disabilities | 2 | 5 |
| 5 | None | 23 | 58 |

Source: Questionnaire

From the above table 6, it is inferred that 20% of the respondents are having older people and 12% of the respondents are having dependant adults, whereas 4% are having adults and children with disabilities and 58% are having no dependents.

**TABLE 7: DISTRIBUTION OF SAMPLE RESPONDENTS ACCORDING TO THE TYPE OF DEPENDANTS IN THE FAMILY**

| Sl.No. | Number of children | Respondents | Percentage |
|---|---|---|---|
| 1 | One | 10 | 27 |
| 2 | Two | 24 | 67 |
| 3 | Three | 2 | 6 |

Source: Questionnaire

From the above table 7, it is observed that 67% of the respondents are having two children and 27% of the respondents are having one child and 6% are having three children. Only 36 respondents responded to this question as 4 respondents are unmarried in this study.

**RANKING ANALYSIS**

In this section simple rank analysis is used to measure the factors that contribute most satisfaction with current job or career progression.

**TABLE 8: RANKING OF THE FACTORS THAT CONTRIBUTE MOST TO SATISFACTION**

| Sl.No. | Factors | R1 | R2 | R3 | R4 | R5 | Total | Rank |
|---|---|---|---|---|---|---|---|---|
| 1 | Contributions in the area of Research | 6 | 10 | 9 | 7 | 8 | 119 | II |
| 2 | Contributions in the area of Teaching | 5 | 5 | 3 | 6 | 21 | 87 | V |
| 3 | Experience/Expertise | 2 | 2 | 10 | 18 | 8 | 92 | IV |
| 4 | Contributions in the area of Administrative work | 10 | 6 | 13 | 3 | 8 | 127 | I |
| 5 | Hardwork / Commitment | 6 | 7 | 8 | 10 | 9 | 111 | III |

Source: Questionnaire

From the above table 8, it is found that the maximum respondents selected first rank for the contribution in the area of administrative work (127). Second rank is to the contributions in the area of research (119). Then the third rank is to be hardwork/commitment (111). Forth rank is toward experience / Expertise (92) and fifth rank is for the contributions in the area of teaching.

**TABLE 9: RANKING OF THE FACTORS THAT DETRACT FROM SATISFACTION WITH CURRENT JOB**

| Sl.No. | Factors | R1 | R2 | R3 | R4 | R5 | Total | Rank |
|---|---|---|---|---|---|---|---|---|
| 1 | Over Workload | 12 | 4 | 7 | 5 | 11 | 118 | II |
| 2 | Lack of Recognition /appreciation | 11 | 4 | 2 | 5 | 8 | 95 | V |
| 3 | Difficulties with administrators | 7 | 7 | 6 | 8 | 2 | 99 | IV |
| 4 | Difficulties with colleagues | 16 | 6 | 3 | 2 | 2 | 119 | I |
| 5 | Teaching burden | 9 | 9 | 5 | 4 | 2 | 106 | III |

Source: Questionnaire

From the above table 9 , it is found that the maximum respondents selected the first rank is to be difficulties with colleagues (119) whereas second rank is to over workload(118). Then the third rank is to be teaching burden (106). Forth rank is to be difficulties with administrators (99) and fifth rank is to be lack of recognition/appreciation (95)

**TABLE 10: RANKING OF THE FACTORS THAT ACT AS STRESSORS**

| Sl.No. | Factors | R1 | R2 | R3 | R4 | R5 | Total | Rank |
|---|---|---|---|---|---|---|---|---|
| 1 | Over Workload | 5 | 4 | 10 | 6 | 7 | 90 | IV |
| 2 | Lack of Recognition /appreciation | 3 | 8 | 7 | 7 | 11 | 93 | III |
| 3 | Difficulties with administrators | 5 | 7 | 4 | 4 | 8 | 81 | V |
| 4 | Difficulties with colleagues | 14 | 5 | 2 | 2 | 3 | 103 | I |
| 5 | Teaching burden | 5 | 5 | 13 | 6 | 0 | 96 | II |

Source: Questionnaire

The above table 10 shows that the maximum respondents selected the first rank is to be difficulties with colleagues (103) whereas second rank is to teaching burden (96). Then the third rank is to be lack of recognition/appreciation (93). Forth rank is to be over workload (90) and fifth rank is to be difficulties with administrators (81).

**CHI-SQUARE ANALYSIS**

**CHI-SQUARE VALUE OF THE RESPONDENTS AGE GROUP VS LEVEL OF WORK LIFE BALANCE**

**HYPOTHESIS**

$H_O$ : There is no significant relationship between the age group and the level of work life balance

$H_1$ : There is significant relationship between the age group and the level of work life balance

**TABLE 11: CHI-SQUARE VALUE OF THE RESPONDENTS AGE GROUP Vs LEVEL OF WORK LIFE BALANCE**

| Sl.No. | Age | High | Moderate | Low | Total |
|---|---|---|---|---|---|
| 1 | 21-30 years | 0 | 1 | 1 | 2 |
| 2 | 31-40 years | 3 | 5 | 4 | 12 |
| 3 | 41-50 years | 3 | 12 | 3 | 18 |
| 4 | 50 & above | 6 | 2 | 0 | 8 |
| | Total | 12 | 20 | 7 | 40 |

Source: Questionnaire

| Age | Value | df | significance | Result |
|---|---|---|---|---|
| Pearsons Chi square value | 13.000 | 6 | 0.043 | Ho Rejected |

Source: Questionnaire

From the above table 11 Pearson Chi-square test, the actual value is 13.000 for level of balance and the age of the respondents.As the actual value is less than the table value. Ho is rejected. So there is significant relationship between the level of balance and age of the respondents.

**CHI-SQUARE VALUE OF THE RESPONDENTS DESIGNATION VS LEVEL OF WORK LIFE BALANCE**

**HYPOTHESIS**

$H_O$ : There is no significant relationship between the designation and the level of work life balance

$H_1$ : There is significant relationship between the designation and the level of work life balance

**TABLE 12: CHI-SQUARE VALUE OF THE RESPONDENTS DESIGNATION Vs LEVEL OF WORK LIFE BALANCE**

| Sl.No. | Designation | High | Moderate | Low | Total |
|---|---|---|---|---|---|
| 1 | Professors | 9 | 8 | 3 | 20 |
| 2 | Associate Professors | 3 | 11 | 2 | 16 |
| 3 | Assistant Professors | 0 | 1 | 3 | 4 |
| | Total | 12 | 20 | 8 | 40 |

Source: Questionnaire

| Designation | Value | df | significance | Result |
|---|---|---|---|---|
| Pearsons Chi square value | 12.150 | 4 | 0.016 | Ho Rejected |

Source: Questionnaire

From the above table 11 Pearson Chi-square test, the acquired value is 12.150 for level of balance and the designation of the respondents. As the actual value is less than the table value, Ho is rejected. So there is significant relationship between the level of balance and designation of the respondents.

**CHI-SQUARE VALUE OF THE RESPONDENTS EXPERIENCE VS LEVEL OF WORK LIFE BALANCE**

**HYPOTHESIS**

$H_O$ : There is no significant relationship between the experience and the level of work life balance

$H_1$ : There is significant relationship between the experience and the level of work life balance

**TABLE 13: CHI-SQUARE VALUE OF THE RESPONDENTS EXPERIENCE Vs LEVEL OF WORK LIFE BALANCE**

| Sl.No. | Experience | High | Moderate | Low | Total |
|---|---|---|---|---|---|
| 1 | 7-10 years | 2 | 1 | 0 | 3 |
| 2 | 10-20 years | 9 | 10 | 6 | 25 |
| 3 | More than 20 years | 1 | 9 | 2 | 12 |
| | Total | 12 | 20 | 8 | 40 |

Source: Questionnaire

| Experience | Value | df | significance | Result |
|---|---|---|---|---|
| Pearsons Chi square value | 6.556 | 4 | 0.161 | Ho Accepted |

Source: Questionnaire

From the above table 11 Pearson Chi-square test, the acquired value is 6.556 for level of balance and the experience of the respondents.

As the actual value is greater than the significance value, Ho is accepted. So there is significant relationship between the level of balance and experience of the respondents.

## FINDINGS

Based on the above analysis, the following are the major findings of the study

1. Majority of the respondents (45%) are belonging to 41-50 years age group
2. Majority of the respondents (70%) are married

3. Majority (60%) of the respondents are professors in this study
4. Majority (605%) of the respondents are having more than 10 years of experience
5. Majority (90%) of the respondents are belonging to nuclear family.
6. Majority (90%) of the respondents are having old people as dependent.
7. Majority (65%) of the respondents are having two children
8. Maximum number of respondents selected first rank to the factor ie., contributions to the area of administration work (127) that derives satisfaction
9. Maximum number of respondents selected first rank to the factor i.e., difficulties with colleagues (119) that distracts from the satisfaction
10. Maximum number of respondents selected first rank to the factor i.e., difficulties with colleagues (103) acts as a stressor

## SUGGESTIONS

This section contains suggestion based upon the findings of the study.

1. Maximum number of respondent's openied that contributions in the area of administration work is giving much satisfaction in the current job. But it is to be suggested that there is a great need for contributions in the area of teaching as well
2. Hardwork/Commitment also gives productivity in work, which in turn gives some sort of satisfaction that leads to managing balance in work life
3. Difficulties with colleagues is a major factors that is distracting the respondents from satisfaction. Institution should see that the difficulties can be lessen among the faculty, which in turn builds the cordial and friendly relation with colleagues
4. Workload should also be reduced. So that they can balance their academics and family life.

## CONCLUSIONS

Women is struggling with the demand of their jobs and satisfying the family needs. In order to balance their work life, faculty should be provided with training and counseling on work-life balance. The training and counseling can be given by educational institutions, corporate enterprises and specialized training organizations. This study reveals that the experienced faculty is balancing their work well when compared to the age and designation. It would be very helpful if experienced faculty can guide and help their colleagues in work life balance. That can be definitely helpful for the faculty to reduce difficulties in work life balance.

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# ELECTRONIC GOVERNMENT SERVICES AND BENEFITS IN THE PRIVATE AND PUBLIC CONTEXT: A JORDANIAN CASE STUDY

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**ABSTRACT**

*The study was selected for its theoretical and practical importance in the field of E-government services . This importance arises from that the E-government services has the potential to involve citizens in the governance process by engaging them in interaction with policymakers throughout the policy cycle and at all levels of government. The population of the study is all employees working with electronic government in Amman City in Jordan. A stratified proportional-random sample of total population is selected in order to answer the questions posed in the questionnaire. Total of (250) useable questionnaires were obtained with a response rate of (70.8%).The questionnaire consists of two parts: The first part included general data of personal variables (management level, service period, sector, gender, and age) The second part included (21) items representing benefits of E-Government services . The five- point Likert scale was used for each item in the questionnaire. Statistical Package for Social Sciences (SPSS) which is usually used in the social sciences studies was chosen to analyze the collected data. The main results and conclusions of this study are summarized as follows: There are significant statistical evidences those differences between employees in the benefits of e-government due to the following factors: management level, service period, sector, gender, and age.*

**KEYWORDS**
E-Government Services , Private and Public Context,and Jordan.

## INTRODUCTION

Since the early seventies of the last Century, the subject of work stress, its causes, effects E-government is not simply a matter of giving government officials computers or automating old practices. Neither the use of computers nor the automation of complex procedures can bring about greater effectiveness in government or promote civic participation. Focusing solely on technological solutions will not change the mentality of bureaucrats who view the citizen as neither a customer of government nor a participant in decision-making. (Helle and Andersen, 2008).

Understood correctly, e-government utilizes technology to accomplish reform by fostering transparency, eliminating distance and other divides, and empowering people to participate in the political processes that affect their lives.

Governments have different strategies to build e-government services. Some have created comprehensive long-term plans. Others have opted to identify just a few key areas as the focus of early projects. In all cases, however, the countries identified as most successful have begun with smaller projects in phases on which to build a structure. (Nathan and Wamukoya 2007)

E-Government services are intangible products involving deeds , performances or efforts that cannot be physically possessed : it is differentiate from goods on three key dimensions that must be considered in successful ,intangible , inseparability and variability.

Electronic Government Service is not unique to any country. In developed countries around the world, more and more of the total economic well being is dependent on services. As nations become more sophisticated, the demand for electronic government services grows. E-government services face several challenges when assessing the competitive environments, such as price competition and legal services.

In evaluating its competitive environment, E-government needs to find ways to differentiate its services from those of direct competitors.

## PROBLEM OF THE STUDY

There should be more effective linkages between citizens and government through e-government services which can be done in phases and costs of implementation depend on current infrastructure availability, supplier and user capabilities, and mode of service delivery. The more complicated and sophisticated the kind of services the government wants to offer, the more expensive it is.

## RELATED LITERATURE REVIEW

**(Nripendra and Others, 2013)** the purpose of this paper is to empirically examine the performance of the alternative IS/IT adoption models used more frequently in the citizen centric adoption of e-government systems. Such analysis will not only provide a trend about the models and subsequent constructs being utilized in this area of research but also guides us toward laying a foundation for the formulation of an alternative integrated model for citizen centric adoption of e-government services. The findings of this research indicate that TAM is by far the best suited model for analyzing citizen centric adoption of e-government services. It was also found that although diffusion of innovation innovation diffusion theory (DOI|IDT) is the second highly used model, only three of its constructs (i.e. compatibility, complexity, and relative advantage) were in use across various studies. Moreover, it was visualized that constructs such as drivability and observables were never used in the e-government context. Similarly, the constructs from TPB have not been used up to the presence of the model across various studies. All the constructs (i.e. performance expectancy, effort expectancy, and social influence) of the UTAUT model, except facilitating conditions, have been used quite regularly.

**(Brendan, 2013)** the aim of this paper is to examine the benefits and the status of e-government in Nigeria, the barriers to the accomplishment of the goal, and some ways out.The study finds that e-government would provide faster access to government information, lower administrative costs, increase transparency in government ministries, and reduce bribery and corruption, among others. These opportunities are threatened by low bandwidth and internet penetration, inadequate ICT infrastructure and technicians, incessant power outages, technological obsolescence, and other barriers. The Nigerian government should carry out a SWOT analysis of the e-government project in the country, strengthen the e-government infrastructure and ensure steady power supply before embarking on the e-government project again.

(**Fang and Others ,2012)**the purpose of this paper is to identify and study the key issues and challenges facing e-government services from an integrative perspective, and to provide strategies and policy recommendations to address them in a broad and holistic way.The authors have identified a variety of important issues and challenges facing e-government development in Dubai. Of them, they focus on language issues on websites, e-integration, uptake of e-government services and the digital divide, and quality of Dubai e-government websites and e-services.

Given that Dubai was ranked the number one eCity in the Arab World and the eighteenth in the world in e-government implementation, this insightful case study has wider implications. It contributes to a better understanding of the key issues in e-government development in the Arab nations. The broad and holistic strategies developed through this study address the root causes of the issues, which could help governments not only in Dubai but also in other countries in their policy making.

**(Hassan and others, 2011)** aims to thoroughly review the research literature concerning e-service in the public sector (2000-2009) for the purpose of summarizing and synthesizing the arguments and ideas of the main contributors to the development of e-service research and explore the different perspectives. In addition, the paper attempts to identify the key characteristics of e-service; and to gather conceptual perspectives on the nature, scope, and transformation to e-service.

The paper develops a clear articulation of the concept, nature; boundaries, components, and elements of e-service which is significant in order to understand the e-service research better and manage e-service in the public sector. With a rapid growth in the volume of research output on the topic of e-service, the paper considers different viewpoints, theories, and methods in e-service research to date to draw conclusions about current status and possible future directions for e-service in the public sector.

**(Fang-Ming and others ,2009)** investigate the efficiency and satisfaction of electronic records management systems (ERMS), which has been of interest to archivists and records managers, in electronic government (e-government) agencies in Taiwan.

Also applies data envelopment analysis to measure the relative efficiency and satisfaction in different types of e-government agencies. After conducting a large-scale survey of e-government agencies in Taiwan, a matrix of efficiency and satisfaction is developed and show that the efficiency of ERMS in central agencies exceeds that in local agencies, and the efficiency in upper level agencies exceeds that in lower level agencies. The efficiency in business agencies exceeds that in administration agencies and public schools. Additionally, ERMS user's satisfaction in e-government agencies is linearly related to ERMS efficiency.

**(Habin and others, 2008)** contributes to the literature by enriching the views on e-government services and their evaluation via introducing a reference model concept. The CEES project will be the first attempt to apply the reference model concept in the information systems evaluation domain. Despite the wide adoption of reference models in software process, software design, and business process automation, the concept is yet to be applied to the IS evaluation domain.

**(Yousef Elsheikh and others, 2008),** examines the challenges encountered in e-government implementation, as well as the potential opportunities available in the context of Jordanian society.

The findings and implications of this study reveal Jordan is still lagging behind in utilizing information and communication technologies for delivering government services online.

An understanding of the current status of e-government in Jordan can help policy makers in the country pursue development of the public sector organisations on the one hand, and would be of importance for Jordan's economic future success on the other.

**(Nathan and Wamukoyo ,2007),** indicate that, with the proliferation of information communication technologies (ICT), electronic records are being generated in many public sector organizations in Africa, which has resulted in many challenges hitherto never experienced by archivists and records managers. Also shows that, while various e-records readiness tools are available in the West, none of them addresses e-records readiness issues in Africa where systems and procedures for managing records both paper and electronic are inadequate.

The paper of **(Efthimios and others, 2007)** introduces a process for developing a metadata element set that will describe e-government resources in digital collections. The outcome of the process is a metadata schema that reuses as many elements as possible from existing specifications and standards (termed as an e-government metadata application profile). The use of e-government metadata is to facilitate the electronic categorization and storage of governmental resources, as well as to enhance users' electronic interactions with the public sector.

**(N Ben and Rogerson, 2006),** looks at citizen-facing e-government and considers how the non-discretionary nature of the citizen's relationship with government makes citizen-facing e-government different from business-consumer e-commerce. E-government should offer a good level of data protection and security, and has a role in educating citizens in matters of computer security. Advantages and disadvantages that may come from e-government adoption are considered, including a number of ways in which cost savings and increases in convenience may be achieved.

**(France and Hiller, 2006),** proposes a conceptual framework of the stages of electronic government that describes and integrates the unique relationship between the government and its varied constituents, and identifies and applies the global constraints that affect the implementation of e-government at each stage. The paper then provides an example of implementation of the framework by exploring the issue of privacy in electronic government. The relationships mapped the stages of e-government, affected by global motivators and constraints, are unique and complex. Policy and implementation of e-government should take account of these complexities. Privacy in e-government issues differs significantly when global motivators and constraints are viewed across the complex framework of government stages by constituency.

**(David and others, 2004)**, investigated the factors related to decision making when people consider and evaluate the usage of an online e-government delivery mechanism. The approach taken was based on a combination of attitudinal technology adoption models and the service quality concept, with data gathered via a questionnaire.

## SIGNIFICANCE OF THE STUDY

The subject of this study was selected for its theoretical and practical importance in the field of E-government services. This importance arises from that the E-government services has the potential to involve citizens in the governance process by engaging them in interaction with policymakers throughout the policy cycle and at all levels of government.

## OBJECTIVES OF THE STUDY

In general, this study aims at achieving the following objectives:

1. Compare the relationship between the management level variable and the variant study dimensions (Benefits of Electronic Government in the private and public).
2. Compare the relationship between the service period of the employee variable and the variant study dimensions (Benefits of Electronic Government in the private and public).
3. Compare the relationship between the sector variable and the variant study dimensions (Benefits of Electronic Government in the private and public).
4. Compare the relationship between the gender variable and the variant study dimensions (Benefits of Electronic Government in the private and public).
5. Compare the relationship between the age variable and the variant study dimensions (Benefits of Electronic Government in the private and public).

## TERMINOLOGY OF THE STUDY

**Electronic Government**: Refers to the use of information technology to free movement of information to overcome the physical bounds of traditional paper and physical based systems

## HYPOTHESES OF THE STUDY

In the light of the results of the previous studies and the objectives of this study, a number of basic hypotheses will be tested regarding the effect of the benefits of electronic government services and the personal variables. These hypotheses are:

1. There are statistical significant evidences that differences exist between employees to benefits of E-Government in the private and public due to the management level of employee.
2. There are statistical significant evidences that differences exist between employees to benefits of E-Government in the private and public due to service period of employee
3. There are statistical significant evidences that differences exist between employees to benefits of E-Government in the private and public due to sector of employee
4. There are statistical significant evidences that differences exist between employees to benefits of E-Government in the private and public due to gender of employee
5. There are statistical significant evidences that differences exist between employees to benefits of E-Government in the private and public due to age of employee

## LIMITATIONS OF THE STUDY

As it is expected to contribute to theoretical and practical areas, this study is limited to the following:

1. It is based only on a questionnaire that was especially developed to fulfill the objectives of the study. Therefore, the results are confined to its validity and reliability.
2. It is restricted to the employees working in Amman City.

## RESEARCH METHODOLOGY

### POPULATION AND SAMPLE

The population of the study is all employees working with electronic government services in Amman City in Jordan.

A stratified proportional-random sample representing (1%) of total population is selected in order to answer the questions posed in the questionnaire. Total of (250) useable questionnaires were obtained with a response rate of (70.8%).Table (1).

### DATA COLLECTION

The study adopts two sources of data: secondary and primary data. Secondary data are obtained from literature published in this subject including previous studies. The primary data are collected from field study conducted through a questionnaire that was developed for such purpose. The questionnaire consists of two parts: The first part included general data of personal variables (management level, service period, sector, gender, and age) .The second part included (21) items representing benefits of E-Government services. The five- point Likert scale was used for each item in the questionnaire: “strongly agree” given (5) points, “agree” given (4) points, “neutral” given (3) points, “disagree” given (2) points, “strongly disagree” given 1 point. Hence, the average of the item is three points. This average is used to disclose the significance of the causing factors of work stress. If the average of a factor super exceeds the (three), it would be considered a high significant factor, but if it was less than the (three), it would be considered a low significant factor.

### DATA ANALYSIS METHODS

Statistical Package for Social Sciences (SPSS) which is usually used in the social sciences studies was chosen to analyze the collected data. The following statistical methods for analysis are adopted: Descriptive statistics, to describe the characteristics of the sample depending on frequencies, percentages, means, and standard deviation, “t-test” and “Scheffe test” for prior comparisons, ANOVA to measure the effects of the independent variables on the dependent variable.

### VALIDITY

The questionnaire has been evaluated by instructors from the Jordanian universities. Their remarks and comments were taken into consideration. For further validity test, the responses of (28) individuals of the sample were tested and evaluated.

### RELIABILITY

Reliability with composite measures is evaluated for the internal consistency through the “Cronbach’s Alpha” measure. The Alpha’s for the items are not below (0.77). Therefore, it can be concluded that the reliability of the questionnaire is high.

### CHARACTERISTICS OF THE SAMPLE

Table (1) shows the sample distribution according to the demographic variables. Figures show that 51.6% working in middle management level and 49.2% have 10 years to less than 15 years of Service Period and 50.8% working in public sector and 54.0% male.

Table (2) shows that the employees feel strongly (mean is 4.9820) with variables 2, 3 and 15 which stated that some of the benefits of Electronic Government are: improve delivery of services to citizens, improve interface with business and industries and reduce transaction costs. Table (2) also shows that the employees do not feel strongly with variable7 (the benefit of Electronic Government is Less corruption), (mean is 4.4040).

## TESTING THE HYPOTHESES OF THE STUDY

As stated earlier, the main stream of the hypotheses of this study is to test the differences between employees according to some important variables: management level, service period, sector, gender, and age.

### HYPOTHESIS (1)

There are statistical significant evidences that differences exist between employees to benefits of E-Government services in the private and public due to the management level of employee.

To test this hypothesis, the **“independent sample t. test”** analysis was applied (summarized in Table (3)). The value of means indicates that employees feel in the variable 7 more than in variable 21. Therefore, the null hypothesis can be accepted, and it can be concluded that there is significant statistical evidence that differences between the employees exist according to their management level.

It is worth of mentioning that this result is similar to most studies done on the subject.

### HYPOTHESIS (2)

There are statistical significant evidences that differences exist between employees to benefits of E-Government services in the private and public due to service period of employee. To test this hypothesis, the ANOVA analysis was applied (shown in Table( 4)).

Therefore, the null hypothesis can be accepted, and it can be concluded that there is significant statistical evidence that differences between employees according to their service period in variables 4, 7,8,15 and 21. To recognize who feels the strength of the benefits of e-government, the **“Scheffe test”** is applied for a priori comparison. (Shown in Table (5)).

Result of the **Scheffe** test showed that those employees whose service period are 5 years to less than 10 years and the one whose service period are 10 years to less than 15 years feel the benefits of e-government more than employees whose service period are 15 years and more in variables4, 8, and15 (Empower citizens thought access to knowledge and information, Growth of Revenue and Reduce transaction costs)

To compare this result to results of other studies on the subject, it can be said that this result is similar to most studies done on the subject.

Result of the test also showed that those employees whose service period are 10 years to less than 15 years and whose service period are15 years and more feel the benefits of e-government more than employees whose service period are 5 years to less than 10 years in variables 7and21 (Less corruption and Improve services to the public)

To compare this result to results of other studies on the subject, it can be said that this result is similar to most studies done on the subject.

**HYPOTHESIS (3)**

There are statistical significant evidences that differences exist between employees to benefits of E-Government in the private and public due to sector of employee

To test this hypothesis, the **"independent sample t. test"** analysis was applied (summarized in Table(6)). The value of means indicates that employees feel in the variables 4,5,8, and 15 (**Empower citizens thought access to knowledge and information**, **More transparency** and **Growth of Revenue)** in public sector more than in private sector and employees feel in the variable 21 in private sector more than in public sector . Therefore, the null hypothesis can be accepted, and it can be concluded that there is significant statistical evidence that differences between the employees exist according to sector.

**HYPOTHESIS (4)**

There are statistical significant evidences that differences exist between employees to benefits of E-Government in the private and public due to gender of employee

To test this hypothesis, the **"independent sample t. test"** analysis was applied (summarized in Table (7)). The value of means indicates that male employees feel in the variables 5,18 and 19 more than female employees. Therefore, the null hypothesis can be accepted, and it can be concluded that there is significant statistical evidence that differences between the employees exist according to their **gender**.

Also the value of means indicates that female employees feel in the variables 20 and 21 more than male employees

**HYPOTHESIS (5)**

There are statistical significant evidences that differences exist between employees to benefits of E-Government in the private and public due to age of employee.

To test this hypothesis, the ANOVA analysis was applied (shown in Table (8)).

Therefore, the null hypothesis can be accepted, and it can be concluded that there is significant statistical evidence that differences between employees according to age in variables 6,7,9 and 10. To recognize who feels the strength of the benefits of e-government, the **"Scheffe test"** is applied for a priori comparison. [Shown in Table (9)].

Result of the **Scheffe** test showed that those employees whose age are 30-Less than 40 years feel the benefits of e-government more than employees whose age are 25- Less than 30 years and 40 years and more in variables 6,7,9, and10

To compare this result to results of other studies on the subject, it can be said that this result is similar to most studies done on the subject.

## STATISTICAL RESULTS

What are the major the benefits of e-government services? It was found that there are positive attitudes toward statements mentioned in table (2) because their means are above mean of the scale (3), also a quick review of the result in table 2 reveals clearly that variables 2, 3 and 15 has the highest mean value (4.9820) and this means that the respondents feel very strongly that some of the benefits of Electronic Government services are: improve delivery of services to citizens, improve interface with business services and industries and reduce transaction costs. This should not come as a surprise.

Variable (7) has the least mean value (the benefit of Electronic Government services is Less corruption), (mean is 4.4040).

## CONCLUSIONS

The main results and conclusions of this study are summarized as follows: There are significant statistical evidences that differences between employees exists in the benefits of e-government. These differences are due to the following factors:

Management level, service period, sector, gender, and age.

## RECOMMENDATIONS

In order to lighten benefits of e-government services, the study recommends the following:

1. The private sector should play a critical role in funding e-government projects.
2. E-government projects must be financially sustainable
3. Governments should create websites that allow users to conduct transactions online
4. E-government services should have the potential to involve citizens in the governance process by engaging them in interaction with policymakers throughout the policy cycle and at all levels of government.

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**QUESTIONNAIRE: ELECTRONIC GOVERNMENT SERVICES AND BENEFITS IN THE PRIVATE AND PUBLIC CONTEXT: A JORDANIAN CASE STUDY**

**PART ONE – PERSONAL DATA**

**1. Management Level:**
-Middle Management.
-First line management.
**2. Service Period:**
- 5 years to less than 10 years.
- 11 years to less than 15 years.
- 16 years and more.
**3. Sector:**
- Public.
- Private.
**4. Sex:**
-Male.
-Female.
**5. Age:**
- 25- Less than 30 years.
-31-Less than 40 years.
-41 years and more.

**PART TWO – QUESTIONNAIRE STATEMENTS**

**Put the sign (√) in front of each item of the following on the right column**

| No. | Electronic Government Services Benefits | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|---|---|---|---|---|---|---|
| 1 | Creating more efficient and convenient relations government to government | | | | | |
| 2 | Improve delivery of services to citizens | | | | | |
| 3 | Improve interface with business and industries | | | | | |
| 4 | Empower citizens thought access to knowledge and information | | | | | |
| 5 | More transparency | | | | | |
| 6 | Smoother flow of information | | | | | |
| 7 | Less corruption | | | | | |
| 8 | Growth of Revenue | | | | | |
| 9 | Reduction of Cost | | | | | |
| 10 | Creating more efficient and convenient relations citizen to government | | | | | |
| 11 | Allocation of resources | | | | | |
| 12 | More Public awareness | | | | | |
| 13 | Reduction in the duplication of efforts | | | | | |
| 4 | Improve competitiveness | | | | | |
| 15 | Reduce transaction costs | | | | | |
| 16 | Affordable and equitable access to online government services | | | | | |
| 17 | Security of transactions | | | | | |
| 18 | Alternative methods of service delivery | | | | | |
| 19 | Ensure the privacy and security of information and transactions | | | | | |
| 20 | Creating more efficient and convenient relations citizen to business | | | | | |
| 21 | Improve services to the public | | | | | |

**TABLE 1: SAMPLE DISTRIBUTION**

| Percent | Frequency | | |
|---|---|---|---|
| 51.6 | 129 | Middle Management. | Management Level |
| 48.4 | 121 | First line management. | |
| 100.0 | 250 | Total | |
| | | | |
| Percent | Frequency | | |
| 32.4 | 81 | 5 years to less than 10 years | Service Period |
| 49.2 | 123 | 10 years to less than 15 years. | |
| 18.4 | 46 | 15 years and more | |
| 100.0 | 250 | Total | |
| | | | |
| Percent | Frequency | | |
| 50.8 | 127 | Public | sector |
| 49.2 | 123 | Private | |
| 100.0 | 250 | Total | |
| Percent | Frequency | | |
| 54.0 | 135 | Male | gender |
| 46.0 | 115 | Female | |
| 100.0 | 250 | Total | |
| Percent | Frequency | | |
| 28.8 | 72 | 25- Less than 30 years | age |
| 30.8 | 77 | 30-Less than 40 years | |
| 40.4 | 101 | 40 years and more | |
| 100.0 | 250 | Total | |

TABLE 2: STANDARD DEVIATION AND MEAN FOR ALL VARIABLES

| Standard Deviation | Mean | variables |
|---|---|---|
| .20830 | 4.9520 | 1 |
| .20830 | 4.9820 | 2 |
| .20830 | 4.9820 | 3 |
| .20830 | 4.8720 | 4 |
| .20830 | 4.7766 | 5 |
| .20830 | 4.3741 | 6 |
| .77975 | 4.4040 | 7 |
| .20830 | 4.5118 | 8 |
| .20830 | 4.8811 | 9 |
| .20830 | 4.6771 | 10 |
| .20830 | 4.9408 | 11 |
| .20830 | 4.9720 | 12 |
| .20830 | 4.9720 | 13 |
| .20830 | 4.5252 | 14 |
| .20830 | 4.9820 | 15 |
| .20830 | 4.6251 | 16 |
| .20830 | 4.9720 | 17 |
| .20830 | 4.9720 | 18 |
| .20830 | 4.7862 | 19 |
| .20830 | 4.8890 | 20 |
| .67444 | 4.7987 | 21 |

TABLE 3: T. TEST FOR MANAGEMENT LEVEL

| Variable 21 | Variable 7 | | level |
|---|---|---|---|
| 4.5581 | 4.9457 | Mean | 1.00 |
| .83766 | .22742 | Std. Deviation | |
| 4.8760 | 4.6529 | Mean | 2.00 |
| .37794 | 1.07789 | Std. Deviation | |
| 4.7120 | 4.8040 | Mean | Total |
| 250 | 250 | N | |
| .67444 | .77975 | Std. Deviation | |

TABLE 4: ANOVA ANALYSIS FOR SERVICE PERIOD

| | Sig. | F | Mean Square | df | Sum of Squares | Variables |
|---|---|---|---|---|---|---|
| .012 | 4.502 | .190 | 2 | .380 | Between Groups | 4 |
| | | .042 | 247 | 10.424 | Within Groups | |
| | | | 249 | 10.804 | Total | |
| .000 | 9.494 | 5.404 | 2 | 10.808 | Between Groups | 7 |
| | | .569 | 247 | 140.588 | Within Groups | |
| | | | 249 | 151.396 | Total | |
| .012 | 4.502 | .190 | 2 | .380 | Between Groups | 8 |
| | | .042 | 247 | 10.424 | Within Groups | |
| | | | 249 | 10.804 | Total | |
| .012 | 4.502 | .190 | 2 | .380 | Between Groups | 15 |
| | | .042 | 247 | 10.424 | Within Groups | |
| | | | 249 | 10.804 | Total | |
| .000 | 21.084 | 8.258 | 2 | 16.517 | Between Groups | 21 |
| | | .392 | 247 | 96.747 | Within Groups | |
| | | | 249 | 113.264 | Total | |

**TABLE 5: SCHEFFE TEST FOR SERVICE PERIOD**

| Sig. | Std. Error | Mean Difference (I-J) | (J) service | (I) service | Variables |
|---|---|---|---|---|---|
| .858 | .02940 | .01626 | 2.00 | 1.00 | 4 |
| .018 | .03793 | .10870(*) | 3.00 | | |
| .858 | .02940 | -.01626 | 1.00 | 2.00 | |
| .035 | .03550 | .09244(*) | 3.00 | | |
| .018 | .03793 | -.10870(*) | 1.00 | 3.00 | |
| .035 | .03550 | -.09244(*) | 2.00 | | |
| .001 | .10796 | -.42066(*) | 2.00 | 1.00 | 7 |
| .002 | .13929 | -.49383(*) | 3.00 | | |
| .001 | .10796 | .42066(*) | 1.00 | 2.00 | |
| .854 | .13039 | -.07317 | 3.00 | | |
| .002 | .13929 | .49383(*) | 1.00 | 3.00 | |
| .854 | .13039 | .07317 | 2.00 | | |
| .858 | .02940 | .01626 | 2.00 | 1.00 | 8 |
| .018 | .03793 | .10870(*) | 3.00 | | |
| .858 | .02940 | -.01626 | 1.00 | 2.00 | |
| .035 | .03550 | .09244(*) | 3.00 | | |
| .018 | .03793 | -.10870(*) | 1.00 | 3.00 | |
| .035 | .03550 | -.09244(*) | 2.00 | | |
| .858 | .02940 | .01626 | 2.00 | 1.00 | 15 |
| .018 | .03793 | .10870(*) | 3.00 | | |
| .858 | .02940 | -.01626 | 1.00 | 2.00 | |
| .035 | .03550 | .09244(*) | 3.00 | | |
| .018 | .03793 | -.10870(*) | 1.00 | 3.00 | |
| .035 | .03550 | -.09244(*) | 2.00 | | |
| .000 | .08956 | -.57302(*) | 2.00 | 1.00 | 21 |
| .000 | .11554 | -.45867(*) | 3.00 | | |
| .000 | .08956 | .57302(*) | 1.00 | 2.00 | |
| .573 | .10816 | .11435 | 3.00 | | |
| .000 | .11554 | .45867(*) | 1.00 | 3.00 | |
| .573 | .10816 | -.11435 | 2.00 | | |

- The mean difference is significant at the .05 level.

**TABLE (6) T. TEST FOR SECTOR**

| 21 | 15 | 8 | 5 | 4 | | sector |
|---|---|---|---|---|---|---|
| 4.5354 | 4.8449 | 4.7449 | 4.5449 | 4.2449 | Mean | public |
| .85259 | .29024 | .29024 | .29024 | .29024 | Std. Deviation | |
| 4.9943 | 5.0000 | 5.0000 | 5.0000 | 5.0000 | Mean | private |
| .33420 | .00654 | .09356 | .03031 | .10927 | Std. Deviation | |

**TABLE 7: T. TEST FOR GENDER**

| 21 | 20 | 19 | 18 | 5 | | gender |
|---|---|---|---|---|---|---|
| 4.8741 | 4.8765 | 5.0000 | 4.9121 | 4.9000 | Mean | male |
| .35470 | .21099 | .304551 | .23266 | .10455 | Std. Deviation | |
| 4.5217 | 5.0000 | 4.7391 | 4.7391 | 4.6391 | Mean | female |
| .88206 | .30455 | .50455 | .30455 | .30455 | Std. Deviation | |

**TABLE 8: ANOVA ANALYSIS FOR AGE OF EMPLOYEE**

| Sig. | F | Mean Square | df | Sum of Squares | | |
|---|---|---|---|---|---|---|
| .006 | 5.248 | .220 | 2 | .440 | Between Groups | q6 |
| | | .042 | 247 | 10.364 | Within Groups | |
| | | | 249 | 10.804 | Total | |
| .018 | 4.093 | 2.429 | 2 | 4.857 | Between Groups | q7 |
| | | .593 | 247 | 146.539 | Within Groups | |
| | | | 249 | 151.396 | Total | |
| .006 | 5.248 | .220 | 2 | .440 | Between Groups | q9 |
| | | .042 | 247 | 10.364 | Within Groups | |
| | | | 249 | 10.804 | Total | |
| .006 | 5.248 | .220 | 2 | .440 | Between Groups | q10 |
| | | .042 | 247 | 10.364 | Within Groups | |
| | | | 249 | 10.804 | Total | |

**TABLE 9: SCHEFFE TEST FOR AGE OF EMPLOYEE**

| Sig. | Std. Error | Mean Difference (I-J) | (J) age | (I) age | Variable |
|---|---|---|---|---|---|
| .027 | .03358 | .09091(*) | 2.00 | 1.00 | 6 |
| 1.000 | .03159 | .00000 | 3.00 | | |
| .027 | .03358 | -.09091(*) | 1.00 | 2.00 | |
| .015 | .03099 | -.09091(*) | 3.00 | | |
| 1.000 | .03159 | .00000 | 1.00 | 3.00 | |
| .015 | .03099 | .09091(*) | 2.00 | | |
| .359 | .12627 | -.18110 | 2.00 | 1.00 | 7 |
| .018 | .11880 | -.33938(*) | 3.00 | | |
| .359 | .12627 | .18110 | 1.00 | 2.00 | |
| .399 | .11653 | -.15829 | 3.00 | | |
| .018 | .11880 | .33938(*) | 1.00 | 3.00 | |
| .399 | .11653 | .15829 | 2.00 | | |
| .027 | .03358 | .09091(*) | 2.00 | 1.00 | 9 |
| 1.000 | .03159 | .00000 | 3.00 | | |
| .027 | .03358 | -.09091(*) | 1.00 | 2.00 | |
| .015 | .03099 | -.09091(*) | 3.00 | | |
| 1.000 | .03159 | .00000 | 1.00 | 3.00 | |
| .015 | .03099 | .09091(*) | 2.00 | | |
| .027 | .03358 | .09091(*) | 2.00 | 1.00 | 10 |
| 1.000 | .03159 | .00000 | 3.00 | | |
| .027 | .03358 | -.09091(*) | 1.00 | 2.00 | |
| .015 | .03099 | -.09091(*) | 3.00 | | |
| 1.000 | .03159 | .00000 | 1.00 | 3.00 | |
| .015 | .03099 | .09091(*) | 2.00 | | |

* The mean difference is significant at the .05 level.

# EFFECT OF EMOTIONAL INTELLIGENCE ON SALESPERSON'S EMPLOYEE ENGAGEMENT AND INTENTION TO QUIT: AN EMPIRICAL STUDY

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**ABSTRACT**

*Present paper is aimed at examining relationship between emotional intelligence, employee engagement and intention to quit in field sales representatives in Indian Pharmaceutical Industry. Specifically, this paper argues that Emotional intelligence may be an important determinant of employee engagement and in turn intention to quit among pharmaceutical sales employees. Data was collected from one hundred and sixty field sales employees from pharmaceutical industry in India. The analysis of data showed that there is a high positive correlation between overall scores of emotional intelligence and employee engagement. (Pearson coefficient r=.32) .Employee engagement had a high negative correlation with Intention to quit. (Pearson coefficient r=- .4).There was no significant direct relation found between emotional intelligence and intention to quit. The first two findings support previous study of relationship between Emotional Intelligence, Employee Engagement and Intention to quit .The finding on relationship between emotional intelligence and intention to quit gives direction for further research in that area. It can be concluded from the research that the employer will have to focus on increasing emotional intelligence of employees to have high levels of employee engagement which will lower employee turnover rates.*

**JEL CODE**
M19

**KEYWORDS**
Emotional intelligence, employee engagement ,intention to quit.

## INTRODUCTION

The construct of Emotional Intelligence today is one of the most frequently researched topics in organizational study especially in context of human behavior. Research shows that emotional intelligence is associated with various organizational outcomes such as employee satisfaction, organizational commitment, high performance; improved moral to name a few Although EI has become a popular tool in organizations there is still a need for increased empirical research on the construct (Salovey, Woolery, & Mayer, 2002).

Employee engagement is another topic which has generated lot of interest among researchers in behavioural sciences.Employee engagement has been defined as emotional and intellectual commitment to the organization (Baumruk 2004, Richman 2006 and Shaw 2005) or the amount of discretionary effort exhibited by employees in their job (Frank et al 2004). Although it is acknowledged and accepted that employee engagement is a multi-faceted construct, Kahn (1990), Truss et al (2006) define employee engagement simply as 'passion for work'.

Employee turnover is the rotation of workers around the labour market; between firms, jobs and occupations; and between the states of employment and unemployment Abassi et al. (2000). Terms employee turnover and intention to quit have been used interchangeably in literatureMellor, Moore and Loquet (2004) define intention to quit as the individual who may be thinking about quitting a job. Glissmege et al (2007) define intention to quit an organization as mediating factor between attitude affecting intent to quit and quitting an organization.Turnover intention is defined as – "one's desire or willingness to leave an organization" (Thoresen et al., 2003).

There are several studies which show a significant relationship between emotional intelligence and organizational commitment and job satisfaction in organization . (Khalili 2011, Humphreys, Brunsen, and Davis 2005 ,Adeyemo 2007,Jordan, Ashkanasy, and Hartel 2002 ,Darolia and Darolia 2005) Research shows that employee engagement is related significantly with organizational commitment as well as job satisfaction.However ,there are very few studies available that explore relationship between emotional intelligence and employee engagement .

Similarly ,there are a very few studies available to establish relationship between emotional intelligence and intention to quit.

Relationship between employee engagement and intention to quit is a well researched topic .Prior research shows that there is significant negative relation between employee engagement and intention to quit . (Towers Perrin, 2005; Corporate Leadership Council 2004;The Conference Board ,2003)

Present paper is aimed at examining relationship between emotional intelligence, employee engagement and intention to quit in field sales representatives in Indian Pharmaceutical Industry. Specifically, this paper argues that Emotional intelligence may be an important determinant of employee engagement and in turn intention to quit among pharmaceutical sales employees.

## REVIEW OF LITERATURE

### EMOTIONAL INTELLIGENCE

Emotional intelligence (E.I.) refers to the ability to recognize and regulate emotions in ourselves and others (Goleman, 1998). Peter Salovey and John Mayer, who originally used the term "emotional intelligence" in published writing, initially defined emotional intelligence as 'A form of intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions (Salovey & Mayer, 1990). Later, these authors revised their definition of emotional intelligence and defined it as The ability to perceive emotion, integrate emotion to facilitate thought, understand emotions, and to regulate emotions to promote personal growth (Mayer & Salovey, 1997).

### MODELS OF EMOTIONAL INTELLIGENCE

During the first half of the 20 th century Intelligence Quotient (IQ) tests were considered adequate measures of intelligence. In 1920 Thorndike hypothesized that true intelligence was composed of not only an academic component, but also emotional and social components. Shanley, Walker, and Foley (1971) hypothesized that social intelligence was distinct from academic intelligence, but they found little empirical evidence to support social intelligence as a separate construct. Salovey and Mayer (1990) suggested social intelligence had been defined too broadly. They investigated emotional intelligence, as a specific aspect of social intelligence. Salovey and Mayer (1990) defined emotional intelligence as the "ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's own thinking and actions" .Various researcher have defined emotional intelligence in different ways and proposed models or theoretical frameworks to understand the concept of emotional intelligence .

Currently, there are three main models of EI:

- Ability EI model
- Mixed models of EI (usually subsumed under trait EI)
- Trait EI model

**EMOTIONAL INTELLIGENCE AT THE WORKPLACE**

Scholars considered emotional intelligence as a factor which consists of positive attitude,behaviours and outcomes . EI has been found to be an important predictor of various enviable organizational outcomes, such as job performance, job satisfaction, organizational citizenship behaviour, and organizational commitment (Carmeli, 2003; Sinha & Jain,2004;, Rathi and Rastogi 2009 ). Some of the recent research work in this field includes following studies :

Khalili (2011) in his study involving 142 employees in small and medium sector employees (SME) in private sector in Iran found a significant relationship between emotional intelligence as a overall construct and organizational commitment .

Humphreys, Brunsen, and Davis (2005) conducted a study on direct health care workers and observed a positive correlation between EI and organizational commitment.

In another research, conducted on public sector employees, Adeyemo (2007) found that EI is positively and significantly associated with job satisfaction.

Additionally, Jordan, Ashkanasy, and Hartel (2002) contend that individuals with high levels of EI use that capability to maintain their affective commitment to the organization

Darolia and Darolia (2005) studied the role of emotional intelligence in coping with stress and emotional control behavior. The research clearly established that emotionally intelligent people who are able to understand and recognize their emotions, manage themselves appropriately so that their impulsiveness and aggression is kept under control in stressful situations.

**EMPLOYEE ENGAGEMENT**

Kahn (1990) was the first researcher to define Employee Engagement .He defines employee engagement as "the harnessing of organization members' selves to their work roles. In engagement, people employ and express themselves physically, cognitively, and emotionally during role performances" (Kahn 1990)

The cognitive aspect of employee engagement concerns employees' beliefs about the organisation, its leaders and working conditions. The emotional aspect concerns how employees feel about each of those three factors and whether they have positive or negative attitudes toward the organisation and its leaders. The physical aspect of employee engagement concerns the physical energies exerted by individuals to accomplish their roles. Thus, according to Kahn (1990), engagement means to be psychologically as well as physically present when occupying and performing an organizational role.

Most often employee engagement has been defined as emotional and intellectual commitment to the organization (Baumruk 2004, Richman 2006 and Shaw 2005) or the amount of discretionary effort exhibited by employees in their job (Frank et al 2004). Although it is acknowledged and accepted that employee engagement is a multi-faceted construct, as previously suggested by Kahn (1990), Truss et al (2006) define employee engagement simply as 'passion for work', a psychological state which is seen to encompass the three dimensions of engagement discussed by Kahn (1990), and captures the common theme running through all these definitions. Some other researchers have defined Employee engagement in following manner

*Harter, Schmidt and Hayes (2002) define employee engagement as "the individual's involvement and satisfaction with as well as enthusiasm for work"

* Lucey, Bateman and Hines (2005) interpret the Gallup Engagement Index as measuring "how each individual employee connects with your company and how each individual employee connects with your customers" They call the opposite of this emotionally unemployed.

* DDI (2005) uses the definition "The extent to which people value, enjoy and believe in what they do" DDI also states that its measure is similar to employee satisfaction and loyalty.

* Fleming, Coffman and Harter (2005) (Gallop Organization researchers) use the term committed employees as a synonym for engaged employees.

Whilst it is acknowledged that employee engagement has been defined in many different ways, it is also argued the definitions often sound similar to other better known and established constructs such as 'organisational commitment' and 'organisational citizenship behaviour' (OCB) (Robinson et al 2004). Thus Robinson et al (2004) defined engagement as 'one step up from commitment'. As a result, employee engagement has the appearance of being yet another trend, or what some might call "old wine in a new bottle".

Broadly the definitions revolve around either one or two of the following concepts:-

The Corporate Leadership Council (2004), Blessing White (2005), and Smythe (2005) emphasize satisfaction and commitment (both cognitive concepts) and their impact on how hard an employee is willing to work. Blessing White (2005) also identifies retention as one of these behavioural outcomes.

A second group focuses on the emotional attachments. Bates (2004) and Gubman (2004) both generally refer to engagement as a heightened emotional attachment to one's work, organization, manager, or co-workers. Baumruk (2004) straddles the cognitive and emotional approaches by defining engagement as "the state in which individuals are emotionally and intellectually committed."

Finally, a third group focuses primarily on the behavioural outcomes, regardless of the causes. Shaffer (2004), refers to engagement as the employee's willingness to expend discretionary effort on the job.

**INTENTION TO QUIT**

Employee turnover is the rotation of workers around the labour market; between firms, jobs and occupations; and between the states of employment and unemployment Abassi et al. (2000). Terms employee turnover and intention to quit have been used interchangeably in literature

Mellor, Moore and Loquet (2004) define intention to quit as the individual who may be thinking about quitting a job. Glissmege et al (2007) define intention to quit an organization as mediating factor between attitude affecting intent to quit and quitting an organization.

Turnover intention is defined as – "one's desire or willingness to leave an organization" (Thoresen et al., 2003). Turnover intention is a component of withdrawal behavior (Hulin, Roznowski, & Hachiya, 1985; Lee & Mitchell, 1994) and has long been associated with negative job attitudes such as job dissatisfaction and intention to quit (Hulin et al., 1985; Mobley, 1979). Studying turnover intention is important as it is still considered to be one of the strongest predictors of actual turnover (Griffeth, Hom, & Gaertner, 2000). Similar to the formation of job satisfaction or dissatisfaction, turnover intention also develops over time.

**RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE AND EMPLOYEE ENGAGEMENT**

There are a very few research studies available to show relationship between EI and employee engagement.

Ravichndran et.al (2011) did research on 119 employees from IT industry in India and found a significant but weak (r=.37) relation between the two constructs. The reason for weak relation indicates that there are factors apart from emotional intelligence, responsible for employee engagement. Ravichndran et.al (2011)

Apart from this there are several studies which show a significant relationship between emotional intelligence and organizational commitment and job satisfaction in organization. (Khalili 2011, Humphreys, Brunsen, and Davis 2005, Adeyemo 2007, Jordan, Ashkanasy, and Hartel 2002, Darolia and Darolia 2005)

Research shows that employee engagement is related significantly with organizational commitment as well as job satisfaction

**EMPLOYEE ENGAGEMENT AND TURNOVER INTENTION**

Beginning in 2003, studies began to demonstrate a direct measurable relationship between employee engagement and the intention of employees to leave their company. Towers Perrin (2003) reported that 66 percent of highly-engaged employees reported that they had no plans to leave their company, while only 3 percent of them were actively looking or had made immediate plans to leave. This compared to 12 percent and 31 percent, respectively, for disengaged employees. Towers Perrin (2005) re-enforced this finding by reporting that 59 percent of engaged employees intended to remain with their employer. Parenthetically, Towers Perrin reasoned that the drop from 2003 to 2005 was due to improvements in the job market.

Studies then began to examine employee engagement and actual turnover behaviors. The Conference Board (2003) initiated this research, identifying a negative .43 correlation between a company's level of employee engagement and their voluntary turnover rate. The Corporate Leadership Council (2004) also found that highly engaged employees were 87 percent less likely to leave their companies than their disengaged counterparts.

The Corporate Leadership Council (2004) also sought to link turnover to the specific drivers of employee engagement. They found that, while engagement is driven dominantly by emotional factors (as noted above), the decision to leave a company was linked nearly equally to both emotional and rational factors, such as better pay and benefits. : (Kuller et al.2008)

Towers Perrin (2005) has contributed to the examination of the connection between engagement and turnover by identifying the key drivers that inspire employees to remain with their company.

Interestingly, these drivers for retention are generally parallel to the employee engagement drivers of Personal Relationship with One's Manager, Career Growth Opportunities, and Pride About the Company. (Kuller et al.2008)

## IMPORTANCE OF THE STUDY

The Pharmaceutical Industry is the third largest Industry in India by volume and it is growing at a rate of more that 10% per annum .It is already a very important industry for economy of the country .Recently the employee turnover rate of the industry for sales personnel has raised to an alarming high of 30-35 % from as low as 8-10% in past (Dhotre , 2010) Moreover it was found that very few research studies are available with focus on Organizational commitment of sales personnel in Pharmaceutical Industry in India .This is the main reason why the researcher was inspired to take up the present study.

Emotional Intelligence has emerged as a new area of interest recently .Emotional Intelligence of leaders has shown to have considerable impact on Employee Engagement and Organizational climate which in turn have impact on employee's intention to quit (Corporate leadership council 2004)

Employee engagement is other organizational factors that is found to be associated with organizational commitment and has been researched extensively (J.K.Harter,F.L.Schmidt,T.L.Hayes 2002)

Studying turnover intention is important as it is still considered to be one of the strongest predictors of actual turnover (Griffeth, Hom, & Gaertner, 2000). Similar to the formation of job satisfaction or dissatisfaction, turnover intention also develops over time.

Although a great deal has been researched about emotional intelligence, employee engagement and intention to quit , the exact manner in which these factors influence each other and in turn the development of intention to quit is still not well understood . Empirical evidence is still needed to unravel the development of organizational commitment in order to reduce employee turnover .Moreover there is hardly any research work done to study relationship in above mentioned constructs in Pharmaceutical Industry with focus on sales personnel in Indi .The present thesis will therefore add significant value in research literature in this context .

## STATEMENT OF THE PROBLEM

Recently the employee turnover rate of pharmaceutical industry for sales personnel has raised to an alarming high of 30-35 % from as low as 8-10% in past (Dhar 2010) Moreover it was found that very few research studies are available with focus on Organizational commitment of sales personnel in Pharmaceutical Industry in India .This is the main reason why the researcher was inspired to take up the present study.

On basis of past research it was felt that emotional intelligence and employee engagement could be constructs worth researching in connection with reducing employee turnover.

Present study is aimed at exploring following two research questions:

1. A significant research question that needs answer is whether there will be presumably meaningful connection between emotional intelligence and employee engagement among sales persons in pharmaceutical industry .This research question would try to explore linkages between emotional intelligence dimensions and the factors of employee engagement.
2. Another research question being explored by present study is whether high employee engagement is an indicator of high employee retention .In other words the study attempts to find whether employees who are more engaged are less likely to quit their organization .

## OBJECTIVES

The aim of present study is to explore relationship between emotional intelligence, employee engagement and intention to quit in field sales representatives in Indian Pharmaceutical Industry.

Prior research shows that emotional intelligence has a positive relation with employee engagement .On basis of the above studies following objectives were set for present study

1. To find relationship between overall emotional intelligence ,employee engagement and intention to quit .
2. To find extent to which each factor of emotional intelligence affects overall employee engagement as well as different factors of employee engagement
3. To find extent to which employee engagement as well as each factor of employee engagement affects intention to quit
4. To find direct relation between emotional intelligence and its various factors with intention to quit .

## HYPOTHESES

On the basis of above mentioned objectives, following three main hypotheses and sixteen sub hypotheses were proposed .

**HYPOTHESES 1**

**MAIN HYPOTHESIS**

H1: There is a significant relationship between emotional intelligence and employee engagement

**SUB HYPOTHESES**

The subhypotheses H1a to H1j are designed to find effect of each factor of emotional intelligence on employee enagement . Emotional Intelligence Questionnaire developed by Shanker and Sayeed (2006) was used for purpose of research .This instrument gives ten factors of emotional intelligence namely - emotionality and impulsiveness, self acceptance, problem solving orientation , self awareness, self confidence, decisiveness and independence ,personal fulfillment ,empathy,anxiety and stress,assertiveness.

Subhypotheses H1k, H1l, and H1m are designed to find effect of emotional intelligence on each factor of employee enagement. Engagement was measured using the shortened version of the Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2006). The scale consists of 9 items and was designed to measure the three components of engagement: vigor, absorption, and dedication.

H1a : There will be a significant relationship between emotionality and impulsiveness and employee engagement
H1b : There will be a significant relationship between self acceptance and employee engagement
H1c : There will be a significant relationship between problem solving orientation and employee engagement
H1d : There will be a significant relationship between self awareness and employee engagement
H1e : There will be a significant relationship between self confidence and employee engagement
H1f : There will be a significant relationship between decisiveness and independence and employee engagement
H1g : There will be a significant relationship between personal fulfillment and employee engagement
H1h : There will be a significant relationship between empathy and employee engagement
H1i : There will be a significant relationship between anxiety and stress and employee engagement
H1j : There will be a significant relationship between assertiveness and employee engagement
H1k : There will be a significant relationship between emotional intelligence and employee's vigor
H1l : There will be a significant relationship between emotional intelligence and employee's dedication
H1m : There will be a significant relationship between emotional intelligence and employee's absorption

**HYPOTHESES 2**

**MAIN HYPOTHESIS**

H2: There will be a significant relationship between employee engagement and intention to quit

**SUB HYPOTHESES**

Subhypotheses H2a, H2b,and H2c are designed to find effect of each factor of employee enagement on intention to quit .

H2a :There will be a significant relationship between vigor and intention to quit .
H2b : There will be a significant relationship between dedication and intention to quit .
H2c : There will be a significant relationship between absorption and intention to quit .

**HYPOTHESES 3**

**MAIN HYPOTHESIS**

H3: There will be a significant relationship between emotional intelligence and intention to quit

**SUB HYPOTHESES**

The subhypotheses H3a to H3j are designed to find effect of each factor of emotional intelligence on intention to quit.

H3a : There will be a significant relationship between emotionality and impulsiveness and intention to quit
H3b : There will be a significant relationship between self acceptance and intention to quit
H3c : There will be a significant relationship between problem solving orientation and intention to quit
H3d : There will be a significant relationship between self awareness and intention to quit
H3e : There will be a significant relationship between self confidence and intention to quit
H3f : There will be a significant relationship between decisiveness and independence and intention to quit
H3g : There will be a significant relationship between personal fulfillment and intention to quit
H3h : There will be a significant relationship between empathy and intention to quit
H3i : There will be a significant relationship between anxiety and stress and intention to quit
H3j : There will be a significant relationship between assertiveness and intention to quit

## RESEARCH METHODOLOGY

**SAMPLE**

The present study uses sample size of 160 .The study was conducted on sales representatives of various pharmaceutical companies in India. The respondents were asked to fill up questionnaire which was designed to record scores for the three constructs under study namely emotional intelligence, employee engagement and intention to quit. Questionnaire was distributed to 185 sales representatives and in all. 160 executives returned completely filled up questionnaires. The age of respondents varied from 20 years to more than 51 years .Most of the respondents (52%) were young in age group of 20 to 30years. The work experience ranged from 0 to 15 years and above.

**INSTRUMENTS USED**

**EMOTIONAL INTELLIGENCE**

Emotional Intelligence Questionnaire developed by Shanker and Sayeed (2006) was used for purpose of research. The authors state that scale was developed using ideas from framework Goleman (1998) ,Mayer Salovay and Caruso(2000) and Bar-On(1997,2000) . The scale consists of sixty-one statements and each statement has seven point scale. This tool has ten dimensions. The ten dimensions are given below. Alpha reliabilities for the factors were found to be in range of 0.6 to 0.91.The overall reliability of construct of emotional intelligence was found to be .83

1. Emotionality and Impulsiveness
2. Self acceptance
3. problem solving orientation
4. self awareness
5. Self Confidence
6. Decisiveness and Independence
7. Personal Fulfillment
8. Empathy
9. Anxiety and stress
10. Assertiveness

**EMPLOYEE ENGAGEMENT**

Engagement was measured using the shortened version of the Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2006). The scale consists of 9 items and was designed to measure the three components of engagement: vigor, absorption, and dedication. The 7 point response scale ranged from never to always/every day. Sample items included: "At my work, I feel bursting with energy", "I am enthusiastic about my job," and "I feel happy when I'm working intensely" (Schaufeli et al., 2006). In a study across 10 countries, Cronbach's alpha for the scale was usually found to be above .80 (Schaufeli et al., 2006). In addition, the reliabilities of three components of the shortened scale ranged between .56 and .71.

In view of the fact that there is high level of correlation between the three factors of scale ,the scale authors suggest that the total score for all 9 items of the scale be used as a measure of work engagement instead of calculating scores for the 3 different engagement components due to high correlations between the 3 components. The scale was selected for the current study because it measured all three aspects of engagement and at the same time was also short so it was not burdensome for participants to complete.

**INTENTION TO QUIT**

Intention to quit was assessed using scale from Farh,Tsui,Xin and Cheng (1998) It was a 3 item scale with the scale items rated on 7 point scale ranging from 'I agree very much to "Disagree completely. Items included, for example, "I often think of quitting my present job" and "I may leave this company and work for another company in the next year". Principal components analysis with an varimax rotation was conducted .This scale is a single factors scale .The reliability was found with cronbach's alpha which was $\alpha = .8632$.

**PROCEDURE FOLLOWED**

For purpose of this study various organizations from pharmaceutical industry which had sales representatives based all over India were approached .Either phone call or e-mail was sent to the HR department of companies where Research was done .After obtaining permission from Human Resources Division of the respective companies Survey questionnaire was administered to employees . The participants were briefed on the purpose for data collection .They were also given an assurance that the data collected would be kept confidential and would be used for research purpose only .Also the questionnaire did not ask for details like their names and departments .This was necessary since it was anticipated that the respondents will have concerns in giving an honest response to "intention to quit questionnaire'.

In order to maximize the response rate, the researcher personally met the sales representatives and their managers during their annual sales meetings held in Mumbai .Sales representatives from all over the country attend the annual sales conference .This approach ensured that the researcher got sample representing the entire country .Secondly respondents submitted the filled up the questionnaire on the same day. This approach also helped in clarifying doubts if any in minds of participants on the spot .As a result the researcher got almost 90% response rate .In all 185 questionnaires were distributed and 160 completely filled up questionnaires came back.

## RESULT AND DISCUSSION

Data analysis was carried out using statistical package for social sciences (SPSS version 16.0) for windows. Mean, variance, and standard deviation of all variables were calculated .Inter-correlation was calculated by Pearson product moment correlation coefficients to find relationship among all variables under study. Apart from this, stepwise multiple regression analysis was used to determine which among the independent variables are correlated significantly with dependent variable and are the significant predictors .The level of significance is set at p=0.01

**DEMOGRAPHICS OF THE SAMPLE**

As presented in table 1 below (Distribution of respondents according to gender ),of the 160 respondents in the study ,146 (91%) respondents are males and 14 (9%) respondents are females .The distribution of respondents according to age group is presented in table 1 below .52% respondents are between age group of 20-30 years ,40% respondents are between age group 31-40 years ,and respondents between age groups 41-50 years and 51 years and above were 4% each .As presented in table 1 –the distribution of respondents on basis of education was - undergraduates (1%), bachelor's degree (83%),post graduates 16% and Ph.D(1%).As presented in table 1 –the distribution of respondents on basis of experience indicates that 41% respondents had experience between 0 to 5years, 29% respondents were having experience between 6 and 10 years , 21% respondents were having experience between 11 and 15 years and 9% respondents were having experience above 15 years .

The majority of respondents were males ,in age group 21-30 years ,and were graduates with experience less than 5 years .

**TABLE 1: DEMOGRAPHICS OF THE SAMPLE**

| GENDER | N | % |
|---|---|---|
| MALES | 146 | 91% |
| FEMALES | 14 | 9% |

| AGE GROUP | N | % |
|---|---|---|
| 20-30 YEARS | 83 | 52% |
| 31-40 YEARS | 64 | 40% |
| 41-50 YEARS | 6 | 4% |
| 51 YEARS AND ABOVE | 6 | 4% |

| EDUCATION | N | % |
|---|---|---|
| UNDERGRADUATES | 2 | 1% |
| BACHELOR'S DEGREE | 133 | 83% |
| MASTER'S DEGREE | 26 | 16% |
| PH.D. | 2 | 1% |

| EXPERIENCE | N | % |
|---|---|---|
| 0-5YEARS | 66 | 41% |
| 6-10 YEARS | 46 | 29% |
| 11-15 YEARS | 34 | 21% |
| ABOVE 15 YEARS | 14 | 9% |

**DESCRIPTIVE ANALYSIS OF EMOTIONAL INTELLIGENCE**

Descriptive analysis in form of mean and standard deviation is presented in table 2 below. Since rating scale is likert scale for emotional intelligence competencies ranging from 1 to 7 with 1 meaning never and 7 meaning always ,the value of 4 represents mean or average score .Mean level of more than 4 can be considered as indicator of strong level of competence by the respondent .

In so doing , respondents indicate ,average level of overall emotional intelligence (mean = 3.41,s.d.= .27 ) .The scores of self acceptance (mean = 4.21,s.d.= .43) and problem solving (mean = 4.69,s.d.= .60 ) indicate a higher level of abilities in emotional intelligence .Scores of self confidence (mean = 2.4,s.d.= .82 ) and anxiety management (mean = 2.29,s.d.= 1.00 ) were found to be on lower side .

**TABLE 2: DESCRIPTIVE STATISTICS**

| | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|
| overall emotional intelligence | 2.92 | 4.38 | 3.41 | 0.27 |
| Emotionality and impulsiveness | 2.25 | 3.75 | 3.33 | 0.30 |
| Self acceptance | 2.89 | 5.33 | 4.21 | 0.43 |
| Problem solving | 2.80 | 6.00 | 4.69 | 0.60 |
| Empathy | 2.80 | 5.40 | 3.86 | 0.59 |
| Self confidence | 1.00 | 4.00 | 2.40 | 0.82 |
| Decisiveness | 2.75 | 4.00 | 3.02 | 0.48 |
| Personal fulfilment | 2.25 | 3.75 | 3.37 | 0.38 |
| Self awareness | 1.20 | 6.00 | 3.43 | 0.86 |
| Anxiety Management | 1.20 | 5.00 | 2.29 | 1.00 |

**ANALYZING EFFECT OF EMOTIONAL INTELLIGENCE ON EMPLOYEE ENGAGEMENT AND INTENTION TO QUIT**

Interco relation coefficients were calculated by means of Pearson's product moment and the results of relation between emotional intelligence ,employee engagement and intention to quit are shown in table 3 .

From table 3 it can be seen that there is a statistically significant, positive correlation between emotional intelligence and employee engagement of an employee (r=.32,p<0.05) The total variance explained by emotional intelligence in predicting employee engagement was 10.24% (100 r2 ).

Relationship between factors of emotional intelligence and overall employee engagement was further explored with help of Pearson correlation coefficients. Significant positive relationship was found between self acceptance (r=.253,p=0.01) ,decisiveness (r=0.208,p=0.008) and self awareness (r=.246,p=.002) and employee engagement.

Emotionality and impulsiveness(r=0.017,p>0.05), problem solving (r=0.128,p>0.05),empathy (r=0.009,p>0.05),self confidence (r= -0.008,p>0.05),personal fulfillment (r=0.088, p>0.05),anxiety and stress management (r=0.148, p>0.05) and assertiveness (r= -0.048, p>0.05) are the factors of emotional intelligence that have relationship with employee engagement which is not significant .

The reason for this relationship can be explained logically .Emotionally intelligent persons , especially those who score high on self acceptance and self awareness are able to accept themselves –along with their strengths and weaknesses. They are aware of their goals and also their weaknesses which can be hurdles in way of achieving their goals .They are also able to handle negative situations on the job skillfully, without letting it affect their goals .Thus they remain more engaged in their work or in other words their employee engagement is high.

On basis of above analysis Hypothesis 1 namely 'There is a significant relationship between emotional intelligence and employee engagement' is accepted.

**TABLE 3: PEARSON CORRELATION COEFFICIENTS BETWEEN EMOTIONAL INTELLIGENCE , EMPLOYEE ENGAGEMENT AND INTENTION TO QUIT (**N=160)

| | | Emotional Intelligence | Employee engagement | Intention to quit |
|---|---|---|---|---|
| Emotional Intelligence | pearson correlation | 1 | 0.32** | -0.07 |
| | significance | | 0.00 | 0.378 |
| Employee engagement | pearson correlation | 0.32** | 1 | -0.4** |
| | significance | 0.00 | | 0.00 |
| Intention to quit | pearson correlation | -0.07 | -0.4** | 1 |
| | significance | 0.378 | 0.00 | |

Note : ** indicates statistically significant at 99% level of confidence

The sub hypotheses H1b namely There will be a significant relationship between self acceptance and employee engagement ",H1d :namely -There will be a significant relationship between self awareness and employee engagement and H1f namely -'There will be a significant relationship between decisiveness and independence and employee engagement 'are accepted . Remaining sub hypotheses are rejected.

From table 3 it can be further seen that there is a significant negative relationship between employee engagement and intention to quit.(r= -0.4,p<0.05) .The variance explained by employee engagement in predicting intention to quit was 16% .

Relationship between factors of employee engagement and intention to quit was further explored with help of Pearson correlation coefficients. Significant negative relationship was found between absorption (r= -0.410,p<0.05) , dedication ( r= -.285, p<0.05) and intention to quit .

Vigor (r= - 0.09,p>0.05) is factor of employee engagement which has negative relationship with employee engagement which is not significant .

Earlier research shows that the terms employee engagement and organizational commitment have strong negative interlinks .This can be extended further to relation between Employee Engagement and Intention to Quit .The justification for this lies partially in their respective definitions.

Employee engagement has emerged as one way to measure a further alternative to measuring employee commitment to the organisation and as a way of creating a more effective workplace (Echols 2005). Towers Perrin (2003) reported that 66 percent of highly-engaged employees reported that they had no plans to leave their company, while only 3 percent of them were actively looking or had made immediate plans to leave. This compared to 12 percent and 31 percent, respectively, for disengaged employees. Towers Perrin (2005) re-enforced this finding by reporting that 59 percent of engaged employees intended to remain with their employer.

On basis of above analysis Hypothesis 2 namely There will be a significant relationship between employee engagement and intention to quit is accepted

Sub hypotheses H2b: namely 'There will be a significant relationship between dedication and intention to quit .and H2c: namely 'There will be a significant relationship between absorption and intention to quit 'was accepted and H2a was rejected.

Relationship between emotional intelligence and intention to quit was found to be different from what was expected .The relation was found to be negative but it is not significant .(r= -0.07,p>0.05)

The reason for this could be that ,since these employees are emotionally intelligent, they are able to decide –the period for which they would work for the organization .They are having vision to judge their growth potential and chances of doing well in same organization. If there are good chances of their success – they may decide to continue or else they may get into mode of intention to quit .Thus person high on emotional intelligence might be having 'intention to quit' and vice-versa .

On basis of above findings, Hypothesis 3 namely 'There will be a significant relationship between emotional intelligence and intention to quit' was rejected

**PREDICTORS OF FACTORS INFLUENCING EMPLOYEE ENGAGEMENT AND INTENTION TO QUIT**

Multiple regression analysis was carried out with variables which correlated significantly .Stepwise regression analysis was conducted in order to find out predictive relationship between factors of emotional intelligence and employee engagement. (See table 4 a and b)

**TABLE 4 a: REGRESSION ANALYSIS IN RELATION WITH EMOTIONAL INTELLIGENCE AND EMPLOYEE ENGAGEMENT**

| Emotional intelligence | R | R Square | Adjusted R Squire | Std. Error of the Estimate | Change statistics | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | R Squire change | F change | df2 | Sig. F change |
| Self acceptance | .25 | 0.064 | .058 | 4.12995 | .064 | 10.821 | 158 | .001 |
| Self awareness | .32 | 0.103 | .092 | 4.05543 | .039 | 6.86 | 157 | .01 |
| Decisiveness | .36 | 0.130 | . 113 | 4.00734 | .027 | 4.791 | 156 | .03 |

*Accepted in order of entry of variables: self acceptance, self awareness, decisiveness

**4 b: COEFFICIENT BETWEEN EMOTIONAL INTELLIGENCE AND EMPLOYEE ENGAGEMENT**

| | Standardized coefficients | T | Sig. |
|---|---|---|---|
| | Beta | | |
| Self acceptance | .188 | 2.44 | .01 |
| Self awareness | .195 | 2.54 | .01 |
| Decisiveness | .165 | 2.18 | .03 |

As revealed in Table 4a & 4b- three dimensions of emotional intelligence, namely; self acceptance, self awareness and decisiveness were positively correlated with employee engagement . Overall variance explained by the three predictors was 13%. Each predictor was positively related employee engagement. Such as self acceptance (β= .18, ρ= .01),Self awareness (β= .19, ρ= .01), Decisiveness (β= .16, ρ= .03),

Stepwise regression analysis was conducted in order to find out predictive relationship between factors of employee engagement and intention to quit .(see table 5 a and b) .

Table 5 presents the results of stepwise regression analysis that is carried out to determine significant predictors of Intention to quit .The results show that there are two important factors of employee engagement that predict 'intention to quit'. These factors are :Absorption and dedication .Overall variance explained by these factors in predicting intention to quit was 20% .Each predictor was negatively related with 'Intention to quit 'as can be seen from coefficients of the relation . Such as Absorption (β= .36, ρ= .00) ,dedication (β= .17, ρ= .02)

**TABLE 5 a: REGRESSION ANALYSIS IN RELATION WITH EMPLOYEE ENGAGEMENT AND INTENTION TO QUIT**

| Employee Engagement | R | R Square | Adjusted R Squire | Std. Error of the Estimate | Change statistics | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | R Squire change | F change | df2 | Sig. F change |
| Absorption | .41 | 0.17 | .166 | 2.215 | .171 | 31.2 | 151 | .00 |
| Dedication | .45 | 0.200 | .190 | 2.182 | .029 | 5.48 | 150 | .02 |

*Accepted in order of entry of variables: absorption, dedication

**TABLE 5 B: COEFFICIENT BETWEEN EMPLOYEE ENGAGEMENT AND INTENTION TO QUIT**

| | Standardized coefficients | T | Sig. |
|---|---|---|---|
| | Beta | | |
| Absorption | -.362 | 4.75 | .00 |
| Dedication | -.179 | 4.34 | .021 |

## FINDINGS

In this study, the above analysis shows that for sales employees in pharmaceutical industry, the emotional intelligence and employee engagement have significant positive relation .In other words, as emotional intelligence of employee increases, employee enagement will increase. Also employee engagement construct is significantly, negatively correlated with intention to quit .This means that higher the level of employee engagement, lower the possibility of employee leaving the organization or having intentions to quit.

Whereas emotional intelligence and intention to quit are not directly significantly related.

These findings are tabulated in table 6 below

**TABLE 6: FINDINGS OF RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE, EMPLOYEE ENGAGEMENT AND INTENTION TO QUIT**

| Dependent variable | Independent variable | Relationship | Important factors |
|---|---|---|---|
| Employee engagement | Emotional Intelligence | Significant positive | Self acceptance ,Self Awareness, Decisiveness |
| Intention to quit | Employee Engagement | Significant Negative | Absorption, Dedication. |
| Intention to quit | Emotional Intelligence | Not Significant | Not applicable |

## CONCLUSION

Present research had one of its objectives as –To find impact of emotional intelligence on employee engagement .Very few prior studies have been conducted in this area to establish such a relationship. The findings of present study indicate that there is a significant but weak correlation between emotional intelligence and employee engagement. (r=.32).The weak correlation indicates that there are factors apart from emotional intelligence ,responsible for employee engagement .This finding is very much in accordance with prior research ( Ravichndran et.al 2011). Among the factors of emotional intelligence – self acceptance ,decisiveness and self awareness were found to have significant positive impact on employee engagement .The logical reason for this could be that –person with good understanding of self ,especially strengths and weaknesses would be able to 'engage' oneself in activities which are suitable to his/her strengths .Such person will also have high level of self acceptance .He or she will have realistic expectations in terms of reward or promotion in organization. This will facilitate coping with challenging or unfavorable situations in work easily. This will in turn improve his/her emotional bonding with work or employee engagement.

Second objective of present research was to find effect of employee engagement on intention to quit .Substantial research has been conducted in past to establish the link between employee engagement and intention to quit (The corporate leadership council, 2004 ;Tower Perins ,2005 ).These studies show that there is high significant relation between these two constructs . The findings of present study are very much in accordance with the prior research .Among factors of employee engagement, absorption and dedication were found to be important factors responsible for reducing tendency of intention to quit. With all the above analysis we can conclude that the relationship between employee engagement and Intention to quit in organization was negative and significant.

Third objective of present research was to find effect of emotional intelligence on' intention to quit'. Very few prior studies have been conducted in this area to establish such a relationship. The findings of present study show that the relation was found to be not significant.

On basis of above findings it can be concluded that emotional intelligence does play an important role in determining employee engagement in organization. However despite of employee engagement being an important determinant of intention to quit , emotional intelligence was not found to be significant predictor of intention to quit .Therefore further research is recommended to explore factors responsible for employee's intention to quit.

This research concludes that emotional intelligence is an important factor in workplace .Empirical evidence appears to support the view that employees with higher emotional intelligence –especially understanding of self are able to "engage' themselves better on the job .This improves "employee engagement' .On the other hand, having employees with high emotional intelligence is not an assurance of low levels of "intention to quit 'and in turn employee turnover.

## LIMITATIONS

The findings of this study should be viewed with few limitations in mind. .Self reported measures were used to measure constructs .It is a well known fact that this may cause common method variance challenges.

Another limitation can be – This study explores the impact of emotional intelligence on employee engagement of frontline sales executives in Pharmaceutical Industry. The responses of questions therefore are likely to be industry specific .Hence it may not representative of employees working in all Industries.

Another limitation can be that the emotional intelligence scores of sample were on lower side. For example overall Emotional intelligence scores were with minimum score 2.92, maximum score 4.38 and mean 3.41. Similarly empathy scores were minimum 2.8, maximum 5.4 and mean 3.86. The results of similar study may be different in sample with higher mean emotional intelligence scores.

## SCOPE FOR FURTHER RESEARCH

On basis of present research, it is recommended that sales employees in pharmaceutical industry should be given training in emotional intelligence. This would help the employees in improving their understanding of themselves and others around them .This would also help the organization by improving 'employee engagement' of employees.

As a recommendation for further research , the results of the present study should be cross-validated in India as well as in other countries. It seems as if the result of the present study give only limited , and somewhat contradictory information on the role of emotional intelligence in organizations. Further exploration of this phenomenon is needed. Since very few studies are available with research done in Pharmaceutical Industry, further research is recommended in relationship between different constructs to add to empirical research in this field.

In this research specific statistical sample and four demographic factors are chosen (gender, age, education level and experience).This research was also limited to sales persons in pharmaceutical industry. While upcoming studies can be done by testing multiple populations ,along with occupation, ethnicity, gender, age and also within various levels in organization in different industries. It is suggested that this research may be replicated with larger sample size ,in different settings.

Final recommendation concerns the research design. Further research can use a mixed method ,namely coupling qualitative and quantitative methods that may improve the findings .Also qualitative methods will help in further exploration of factors affecting employee's "intention to quit '

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# ANALYTICAL STUDY OF FARMER SUICIDE IN INDIAN AGRICULTURE SECTOR

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**ABSTRACT**

*Indian farmers are in problem due to indebtness in India. Eleven crore farmer families are in problem. On an average a farmer has 80000 Rs per head debt in India (NSSO 2006). India is an agrarian country with around 60% of its people directly or indirectly depends upon agriculture. Agriculture in India is often attributed as gambling with monsoons because of its almost exclusive dependency on precipitation from monsoons. The failure of these monsoons leading to a series of droughts, lack of better prices, exploitation by Middlemen, all of which have led to a series of suicides committed by farmers across India. Since 1995, more than 253,000 farmers have been reported to have committed suicides in India, making this the largest wave of suicides in the world. On an average 45 farmers commit suicide each day in India and in Vidharb a farmer commit suicide each every five hour. Innovative remedies have to be thought of which are to be implemented with sincerity by the Government and the implementing agencies, along with putting in place ways to rehabilitate the affected farmers. An attempt has been made in this article to address the issue of farmer's plight leading to suicide and measures to address the issue have been suggested.*

**KEYWORDS**

Farmer suicide, National Crime Records Bureau (NCRB), Suicide Mortality Rates (SMR), WTO, GDP, Growth Rate, Mean.

## INTRODUCTION

Indian farmers are in problem due to indebtness in India. Eleven crore farmer families are in problem. On an average Debt on a farmer has increased from 12585 Rs in 2003 to 80000 Rs in 2006 per head debt in India (NSSO 2006). Agriculture provides the principal means of livelihood directly for 65 crore farmer families and 20 crore landless labourer in India's population. On an average farmer's Debt in major States are 18135, 26007, 23965, 33907, 41576 and 23963 per farmer in Karnataka, Haryana, Andra Pradesh, Karla, Punjab and Tamilnaidu (NSSO 2003) respectively. Despite a steady decline in its share to the gross Domestic Product (GDP) agriculture remains the largest economic sector in the country. On an average income of a farmer was 2115 Rs per month in India. It was lowest (1630 Rs) in U P and highest (5500Rs) in J&K. This income is very low in comparison to a peon and a sweeper in India. How, it is possible for a farmer to alive themselves with his family. On an average a farmer has five members in their family in India. Low and volatile growth rates under the sector and the recent escalation of an agrarian crisis in several parts of the country pose a threat not only to national food security but also to the economic well being of the nation as a whole.

In 1947 the share of Agriculture in total GDP was 50%. Gradually it declined and has now come down to about 14% in 2012. Still however 60% population depends on agriculture for the survival. In the present time period also 60% of credit demand in agriculture sector meets by private money Leander. Due to rapid growth of rural population and division of families the farmland has undergone rapid fragmentation. Presently 80% of the farmland holding are with the small and marginal farmers owning land up to 5 acres. For these categories of farmers cost of production by way of farm inputs has increased manifold over the years while the productivity of the land remained at the same level and sale price of farm produce has not commensurately increased. These factors have driven farmers to the debt trap and have caused distress leading to suicide. My experience in the field has shown that smaller the landholding higher is the cost of production. The distressed economy of small scale crop cultivation is further accentuated by lack of knowledge, scientific application of crop management, diversification practices, inappropriate system such as non availability of quality input material in time, inadequate irrigation facility, non-remunerative prices, uneducated farmer's, backward technology and dominance of middlemen in Agricultural Marketing Structure. It is encouraging to see that our country is one of the fastest growing economies in the world. Reform process in most of the economic sectors is in place. There is healthy competition in almost all the sectors leading to cost reduction. GOI has planned to achieve 10% growth by 2012, but all this cannot be achieved unless the targeted growth is ensured for Agriculture sector.

Indian central government make finance commission after every ten year for 1.42 crore employees. Govt also gives to their employees annually increment, Bonus and DA also but for the farmer govt. is nothing doing. Govt live the farmer's on the mercy of financial institution and private money Leander. It is a very critical situation that a farmer is committing suicide for a small amount of Debt in comparison to other people Debt. Several studies have been conducted by the Government and social science organizations to analyse the agrarian crisis and farmer's suicides. In the budget of 2008-09 Honorable Finance Minister has also announced massive write off to the tune of Rs.60000 crore of the outstanding loan of small & marginal farmers and OTS for other farmers.

## REVIEW OF LITERATURE

In 2006, the state of Maharashtra, with 4,453 farmers' suicides accounted for over a quarter of the all-India total of 17,060, according to the National Crime Records Bureau (NCRB). NCRB also stated that there were at least 16,196 farmers' suicides in India in 2008, bringing the total since 1997 to 199,132. According to another study by the Bureau, while the number of farm suicides increased since 2001, the number of farmers has fallen, as thousands abandoning agriculture in distress. According to government data, over 5,000 farmers committed suicide in 2005-2009 in Maharashtra, while 1,313 cases reported by Andhra Pradesh between 2005 and 2007. In Karnataka the number stood at 1,003, since 2005-06 till August 2009. According to NCRB database number of suicides during 2005-2009 in Gujarat 387, Kerala 905, Punjab 75 and Tamil Nadu 26. In April 2009, the state of Chattisgarh reported 1,500 farmers committed suicide due to debt and crop failure. At least 17,368 Indian farmers killed themselves in 2009, the worst figure for farm suicides in six years, according to data of the National Crime Records Bureau (NCRB).

Dr. P. V. Deshmukh (Feb.2011) in their study "Farmers Suicides in India" found that the government must amend laws that are governing the farmers in the Indian agricultural sector. If the government does not make any urgent recommendations or legal provisions to offer relief to the trend of farmer suicide in the affected states, the whole country will suffer the consequences. Some of these are given below:

* National disaster as farmer suicides increase every day.
* Food productivity will be hit badly.
* Food inflation will rise at an alarming rate.
* Severe food crisis.
* The intensity of unemployment problem will be increase.
* Family problems, Social problems, Physiological problems.

Farmers in India became the centre of considerable concern in the 1990s when the journalist P Sainath highlighted the large number of suicides among them. Official reports initially denied the farmer suicides but as more and more information came to light the government began to accept that farmers in India were under considerable stress. On figures there was much debate since the issue was so emotive. More than 17,500 farmers a year killed themselves between 2002 and 2006, according to experts who have analyzed government statistics. Others traced the increase in farmer suicides to the early 1990s. It was said, a comprehensive all-India study is still awaited, that most suicides occurred in states of Andhra Pradesh, Maharashtra, Karnataka, Kerala and Punjab. The situation was grim enough to force at least the Maharashtra government to set up a dedicated office to deal with farmer's distress.

**CASE STUDY ON FARMER'S SUICIDES BY PROF. K.NAGRAJ (MADRAS INSTITUTE OF DEVELOPMENT STUDIES)**

According to the Report of Prof. K. Nagraj of Madras Institute of Dev. Studies, the General Suicide Rate (GSR) (overall suicides per 1 lakh population) in the country between the periods 1997 to 2005 was 10.6, where as the Farmers Suicide Rate (FSR) was 12.9 and the Ratio of FSR to GSR was 1: 1.2. In Maharashtra the position was alarming with GSR at 15.1 and FSR at 29.9. According to Prof. Nagraj Annual Compound Growth Rate (ACGR) for all suicides at 2.18% is lower than the Population Growth Rate. The data reveals that the worst position of the farmers in Maharashtra is in Vidarbha region. The Study also shows the alacrity of the problem, so much so that on an average one farmer took his/her life every 53 minutes between 1997 and 2005. State wise position of suicides in other States in critical group was Andhra Pradesh–16770, Karnataka–20093 & Madhya Pradesh (including Chattisgarh) –23588.

**(II) STUDY OF AGRICULTURAL INDEBTEDNESS BY EXPERT GROUP – PROF. RADHAKRISHNA**

According to the study Agricultural indebtedness is not the main cause of farmer's suicides but stagnation in agriculture, marketing risks, collapse of extension system, growing institutional vacuum and lack of livelihood opportunities are the primary causes. According to the Report the decline in returns from agriculture has resulted in inability of farmers to repay debt and this has triggered Farmers suicide.

## OBJECTIVE OF STUDY

Main objective of the study is to make an Analytical Study of Farmers Suicide in Indian Agriculture Sector. To analysis the growth rate of Farmers Suicide. To analysis the gender base growth rate of Farmers Suicide. To analysis the causes of Farmers Suicide.

## RESEARCH METHODOLOGY

Present study is based on secondary data and data has been collected through ncrb.nic.in web site. To analysis the data growth rate, percentage and mean method is used.

## CAUSES OF FARMER SUICIDES

There are various economic, social, political, individual and environmental causes of farmer's suicide in India. The causes of this crisis are complex and manifold; they are dominantly related to public policy and economic strategy.

- Absence of adequate social support infrastructure at the level of village.
- Uncertainty of agricultural enterprise in India.
- Indebtedness of farmers: Institutional and Non- Institutional Credit
- Rising cost of cultivation.
- Lack of credit availability for small farmers. There has been minimal financial support from the government for small farmers.
- Lack of irrigation facilities.
- Lack of Government Vision and clarity of intention to benefit the poor and small farmers.
- Reduction of agriculture subsidies.
- Environmental pollution.
- Exploitation of natural resources (water - forest)
- Unfavorable international policies.
- Lack of increasing in the prices of agricultural products compare to agricultural inputs. Indian farmers are facing is the dramatic fall in prices of farm produce as a result of the WTO's free trade policies.
- Monocultures and uniformity increase the risk of crop failure, as diverse seeds adapted to diverse to eco-system are replaced by the rushed introduction of uniformity and often untested seeds into the market. When Monsanto first introduced Bt Cotton in 2002, the farmers lost 1 billion rupees due to crop failure.
- The drinking habit which atrophies the productivity of the farmer.
- Extravagant expenditure on marriages.
- Bad health and illness and inability to meet the necessary expenditure on medicine and health services.
- Government has destroyed important public institutions.
- Rehabilitation packages e.g. Package of Central Government, Package of State Government, Lone Waiver Proposal, etc are not implementing in proper way to relief needy farmers.
- Public expenditure on rural development fell during this period from 14.5 percent 0f G.D.P. in 1991 to 5.9 percent in 2004 (P. Sainath, The Hindu - 2/2/2010)
- Repeated crop failure,
- Inability to meet the rising cost of production (farmers have been spending more on fertilisers even while crop performance has been showing a declining trend).
- Indebtedness due to a host of reasons ranging from a daughter's marriage to digging a well which eventually bore no water,
- These causes arose out of a larger picture of globalization & the resultant neglect of agricultural community in India
- Stagnant Revenues
- Rising Essential Expenditures
- Lack of covering the maximum crops under the crops insurance.
- Lack of crops diversity/lack of commercialization of crops.

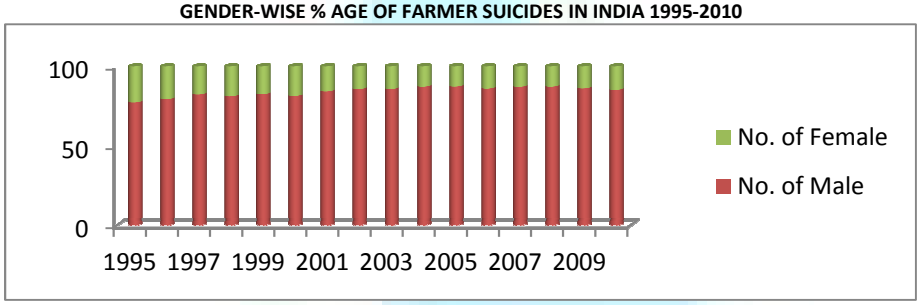
Table no 1 show the gender-wise percentage of farmer suicides in India from 1995-2010. It shows that out of total suicide 84.14 percent are male and 15.86 percent are female during above said time period.

**TABLE NO 1: GENDER-WISE % AGE OF FARMER SUICIDES IN INDIA 1995-2010**

| Year | No. of Male | No. of Female | Total |
|---|---|---|---|
| 1995 | 77.38 | 22.62 | 100 |
| 1996 | 79.37 | 20.63 | 100 |
| 1997 | 82.43 | 17.57 | 100 |
| 1998 | 81.09 | 18.91 | 100 |
| 1999 | 82.56 | 17.44 | 100 |
| 2000 | 81.32 | 18.68 | 100 |
| 2001 | 84.25 | 15.75 | 100 |
| 2002 | 85.66 | 14.34 | 100 |
| 2003 | 85.65 | 14.35 | 100 |
| 2004 | 87.33 | 12.67 | 100 |
| 2005 | 87.40 | 12.60 | 100 |
| 2006 | 85.96 | 14.04 | 100 |
| 2007 | 87.24 | 12.76 | 100 |
| 2008 | 87.34 | 12.66 | 100 |
| 2009 | 86.08 | 13.92 | 100 |
| 2010 | 85.14 | 14.86 | 100 |
| Mean from 1995-2010 | 84.14 | 15.86 | 100 |

Source: ncrb.nic.in

**GENDER-WISE % AGE OF FARMER SUICIDES IN INDIA 1995-2010**




Source: ncrb.nic.in

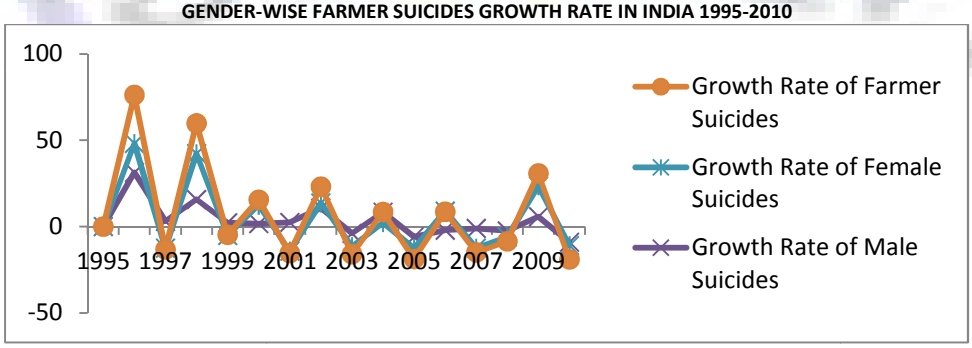
Table no 2 show the gender-wise growth rate of farmer suicides in India from 1995-2010. Study found that during the study period on an average 13549, 2508 & 16057 male, female and total farmer committed suicide. It also shows that total growth rate of farmer suicides is 3.08. In case of male & female it is found 3.77& 0.62 during above said time period.

**TABLE NO 2: GENDER-WISE FARMER SUICIDES GROWTH RATE IN INDIA 1995-2010**

| Year | Growth Rate of Male | Growth Rate of Female | Total Growth Rate |
|---|---|---|---|
| 1995 | - | - | - |
| 1996 | 31.37 | 16.78 | 28.07 |
| 1997 | 3.05 | -15.50 | -0.78 |
| 1998 | 15.65 | 26.58 | 17.57 |
| 1999 | 2.25 | -7.43 | 0.42 |
| 2000 | 1.68 | 10.63 | 3.24 |
| 2001 | 2.43 | -16.63 | -1.13 |
| 2002 | 10.69 | 2.98 | 9.48 |
| 2003 | -3.97 | -7.51 | -4.49 |
| 2004 | 8.35 | -6.13 | 6.27 |
| 2005 | -6.00 | -6.66 | -6.09 |
| 2006 | -2.06 | 11.03 | -0.41 |
| 2007 | -1.06 | -11.39 | -2.51 |
| 2008 | -2.51 | -3.39 | -2.62 |
| 2009 | 5.70 | 17.84 | 7.24 |
| 2010 | -9.09 | -1.86 | -8.08 |
| Growth Rate From (1995-2010) | 3.77 | 0.62 | 3.08 |
| Mean of Total No. | 13549.20 | 2507.88 | 16057.06 |

Source: ncrb.nic.in

**GENDER-WISE FARMER SUICIDES GROWTH RATE IN INDIA 1995-2010**




Source: ncrb.nic.in

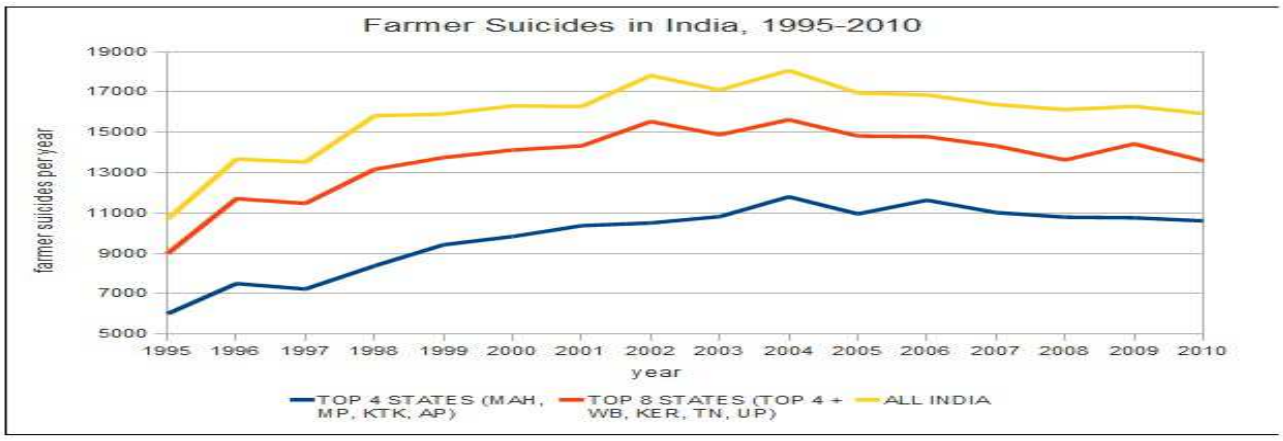



**FIGURE 1: Farmer Suicides in India, 1995-2010 (All-India, Top 4 States and Top 8 States)**

Two patterns are visible in Figure 1. First, for the all-India numbers as much as for the top 8 and top 4 states, there is an overall trend of increasing farmer suicides between 1995 and 2010. At the all-India level, total farmer suicides reported in 1995 was below 11,000; in 2010, it was hovering around 16,000.

Second, and more problematic, is the fact that the 4 states that account for about two-thirds of the total farmer suicides in the country show a very mild decline since the mid-2000s. The trend line for these 4 states has basically flattened out since the mid-2000s, highlighting the fact that the states with the highest incidence of farmer suicides have not made much progress. This fact must then temper the optimism, if any, arising from the decline in the all-India numbers since the mid-2000s.

Let us now turn to a more disaggregated analysis of these overall figures by looking at the top 8 and top 4 states, as a group, in some detail. Figure 2 presents the time profile of farmer suicides in the 8 states that have consistently witnessed the largest number of farmer suicides in India, accounting for about 66 percent of the all-India total in 2010 (the recent most years for which data is available at the NCRB website). In descending order of farmer suicides in 2010, the states are: Maharashtra, Madhya Pradesh (including Chhattisgarh), Karnataka, Andhra Pradesh, West Bengal, Kerala, Tamil Nadu and Uttar Pradesh. Two patterns are visible in Figure 2.

**TOTAL NUMBER OF SUICIDES ACROSS STATES: 1995-2010**

The first alternative measure that we use is the absolute number of farmer suicides between 1995 and 2010. Figure 2 gives the ranking of the "top" 15 states according to the total number of farmer suicides reported between 1995 and 2010. The total number of suicides gives us a first quantitative approach to the phenomenon by answering the question: how large is the magnitude of farmer suicides across the various states? Just like the overall figure of 253785 farmer suicides for India convey the enormity of the problem we are dealing with, the overall numbers for states convey a similar sentiment.

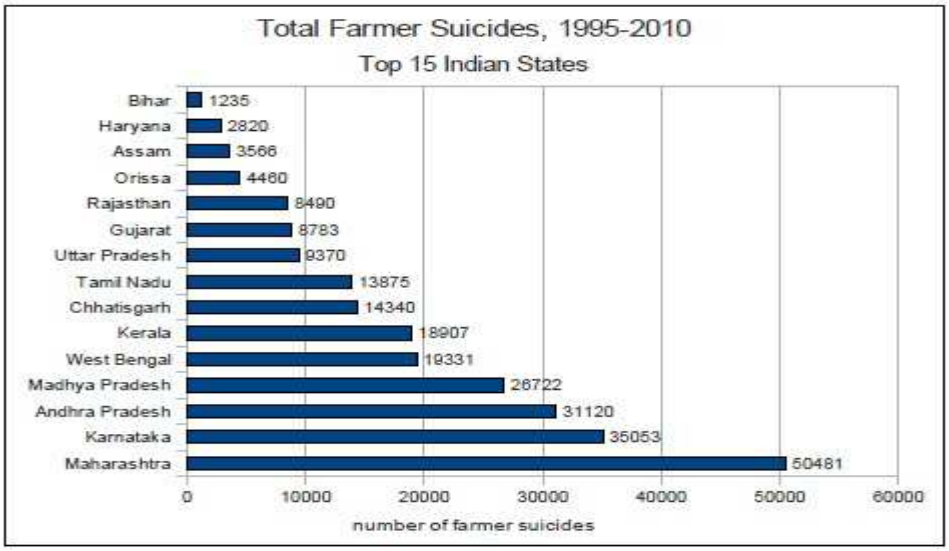



**Figure 2: Total Farmer Suicides in Indian States, 1995-2010**

The states with the highest number of reported farmer suicides are, in decreasing order: Maharashtra (MH), Karnataka (KT), Andhra Pradesh (AP), Madhya Pradesh (MP), West Bengal (WB), Kerala (KR), Chhattisgarh (CG), Tamil Nadu (TN). With 50481 reported farmer suicides, Maharashtra stands in a league all by itself. Karnataka, Andhra Pradesh and Madhya Pradesh form a close second group with West Bengal, Kerala, Chhattisgarh and Tamil Nadu forming the third group to watch closely.

**TOTAL NUMBER OF SUICIDES: 2001-2010**

Since some states were formed in the early 2000s, we also provide a ranking of states by the total number of suicides reported between 2001 and 2010. Figure 3 gives this ranking. Compared to Figure 2, there two significant changes in the rankings: (1) Chhattisgarh moves up from the 7th position to the 4th; (2) West Bengal and Kerala switch positions. This shows that the newly formed state of Chhattisgarh has forged ahead of many others in an ignominious way, and that Kerala has outstripped its sister state in more ways than one.

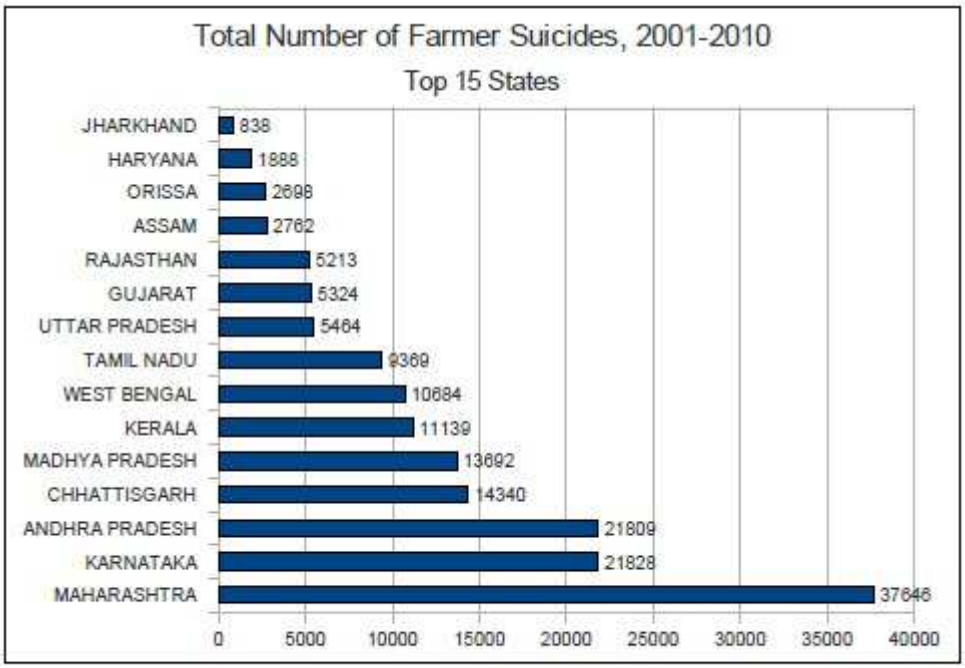



**Figure 3: Total Farmer Suicides in Indian States, 2001-2010.**

**FARMER SUICIDES FOR EVERY 1 LAKH PERSONS**

It will be pointed out, and quite rightly we believe, that the rankings provided in Figure 2 and 3 need to be modified because different states are vastly different in terms of population. To understand the severity of the problem across states, the argument would go; we need to normalize the total number of farmer suicides by the size of the population. This is a valid point and so in Figure 4, we provide rankings of states by just such a measure: total number of farmer suicides between 1995 and 2010 divided by the state population in 2001. The year 2001 is used because it is a kind of "mid-point" for the period under study and thus provides a natural point to use for state population comparisons.

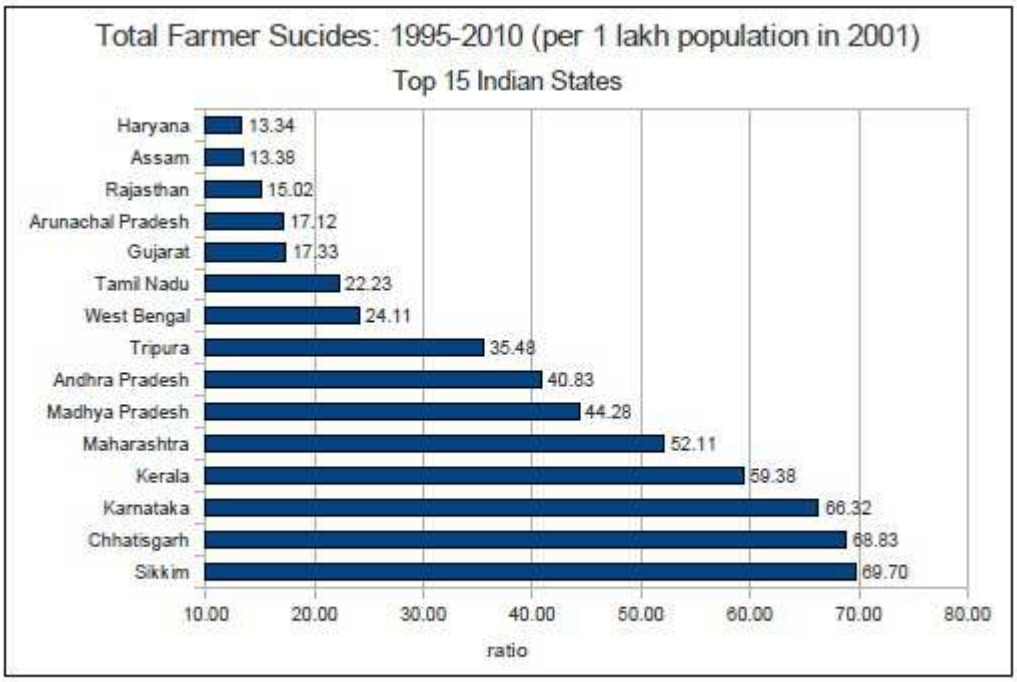



**Figure 4: Farmer Suicides between 1995 and 2010 normalized by State population in 2001.**

The state with the highest number of farmer suicides for every one lakh persons is Sikkim. This result might be driven by the fact that the population of Sikkim is very small. Among the larger states, we observe the following ranking in terms of farmer suicides per one lakh population.

**FARMER SUICIDE MORTALITY RATES**

We could refine the measure further. Since the share of farmers in the total population varies by states, it might be argued that we need to normalize by the farmer population rather than the total population. In fact, when we do so we get the suicide mortality rates (SMR) for farmers, a measure that is commonly used to measure mortality across different groups.

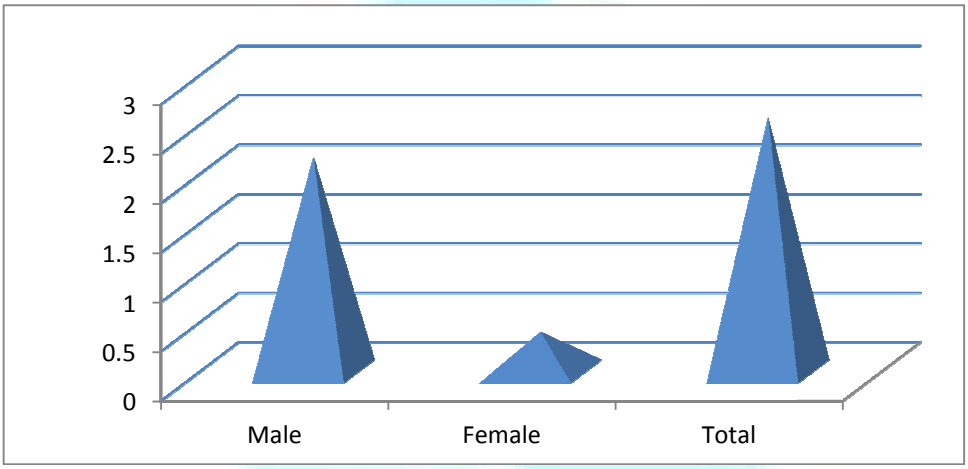
Table 3 reproduces the relevant data that relates to the suicide mortality rate (SMR) in some select years. SMR is defined as the number of suicides per 100000 populations. The table shows a marked increase in the rate of male farmers' suicide, which appears to be sustained, at least for the periods for which the calculation was made.

**TABLE NO 3: GENDER-WISE FARMER SMR IN INDIA 1995-2010**

| Year | Male | Female | Total |
|---|---|---|---|
| 1995 | 0.083 | 0.024 | 0.107 |
| 1996 | 0.109 | 0.028 | 0.137 |
| 1997 | 0.112 | 0.024 | 0.136 |
| 1998 | 0.130 | 0.030 | 0.160 |
| 1999 | 0.132 | 0.028 | 0.161 |
| 2000 | 0.135 | 0.031 | 0.166 |
| 2001 | 0.138 | 0.026 | 0.164 |
| 2002 | 0.153 | 0.027 | 0.180 |
| 2003 | 0.147 | 0.025 | 0.172 |
| 2004 | 0.159 | 0.023 | 0.182 |
| 2005 | 0.149 | 0.022 | 0.171 |
| 2006 | 0.146 | 0.024 | 0.171 |
| 2007 | 0.145 | 0.021 | 0.166 |
| 2008 | 0.141 | 0.021 | 0.162 |
| 2009 | 0.149 | 0.024 | 0.174 |
| 2010 | 0.136 | 0.024 | 0.160 |
| SMR | 2.168 | 0.401 | 2.569 |

Source: ncrb.nic.in

**FIGURE 5: GENDER-WISE FARMER SMR IN INDIA 1995-2010**




A similar ranking in terms of the SMRs for male farmers is presented in Figure 6, which displays similar patterns as the one represented by Figure 6. It is common for researchers and activists to separately look at the SMR for male farmers. Hence, we report this statistic here. But it must be remembered that there is wide variation in the share of female farmers among Indian states. For instance, in 2001, the share of female farmers varied from 17-18% in Kerala and West Bengal to above 50% in Arunachal Pradesh, Himachal Pradesh and Nagaland. Moreover, the agricultural workforce in India is getting increasingly feminized with time. According to a report by the NCEUS (National Commission for Enterprises in the Unorganised Sector), between 1993- 94 and 2004-05 the percentage of female farmers had grown from 34.1% to 36.1%. Hence, the traditional approach of focusing on male farmers might no longer be very informative; one needs to look at the farmer population as a whole.2

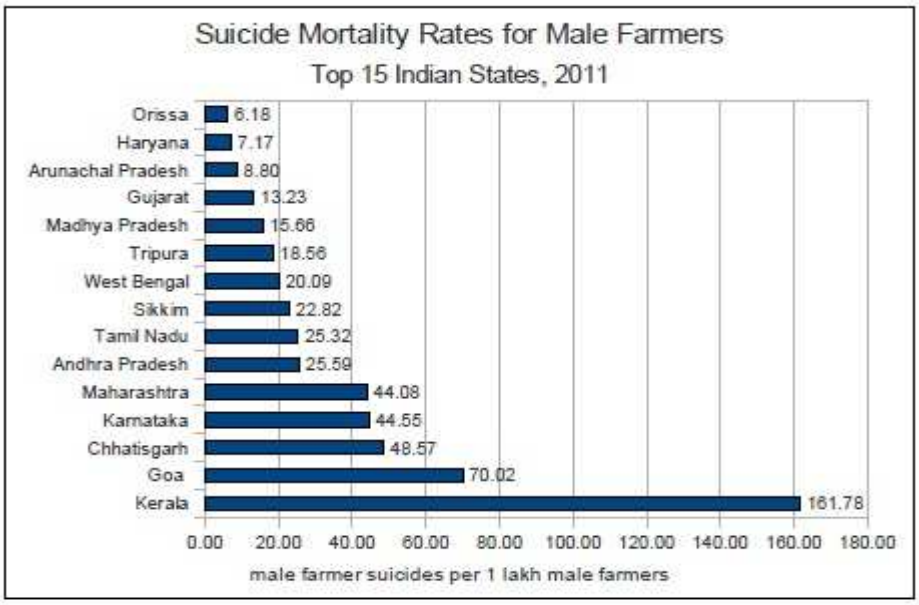



**Figure 6: Male Farmer SMRs for the top 15 Indian states in 2001**

FIGURE-7: GENDER-WISE FARMER SUICIDE IN INDIA FROM 1995-2010

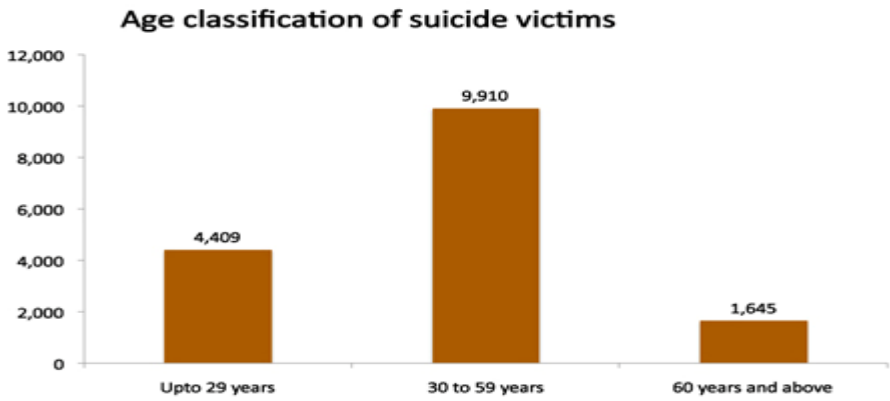
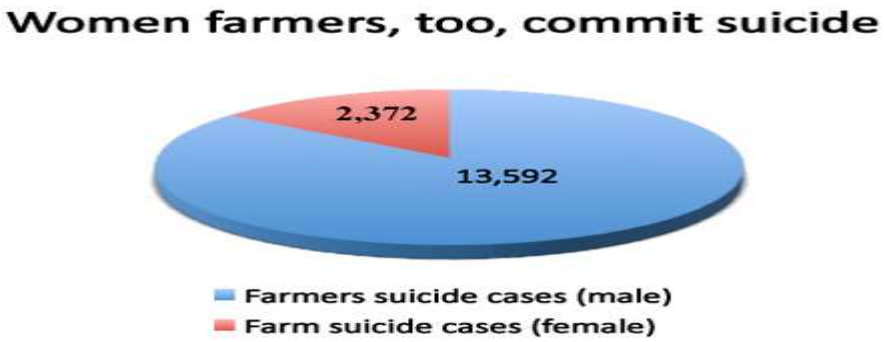



FIGURE-8: FEMALE FARMER SUICIDE IN INDIA FROM 1995-2010




## CONSEQUENCES

The government must amend laws that are governing the farmers in the Indian agricultural sector. If the government does not make any urgent recommendations or legal provisions to offer relief to the trend of farmer suicide in the affected states, the whole country will suffer the consequences. Some of these are given below:

- National disaster as farmer suicides increase every day.
- Food productivity will be hit badly.
- Food inflation will rise at an alarming rate.
- Severe food crisis.
- The intensity of unemployment problem will be increase.
- Family problems, Social problems, Physiological problems will be increased.
- Poverty will be increased more and more.
- Standard of living will be declined.

## CONCLUSION

In this article we have argued that the wave of farmer suicides that have swept across India since the mid-1990s is a plain and simple case of policy-induced disaster of epic proportions. Adoption of neoliberal policies like reduced public investment in agriculture, withdrawal of institutional credit to rural areas, opening up the agricultural sector to global trade, neglect of irrigation facilities and allowing the rampant commercialization of agricultural inputs, have contributed to the development and deepening of acute agrarian crisis. The build-up of farmer debt is a direct result of the deepening agrarian crisis, and the wave of farmer suicides is a direct outcome of mounting debt. We have illustrated the detailed dynamics of this process by looking all India.

It is deplorable that the Central and State governments in the country have done little in terms of adopting and enforcing concrete policies to address this unprecedented situation. Even as, year after year, desperate farmers protest the neoliberal dispensation by turning their fury inward and taking their lives, politicians, bureaucrats and policy-makers look the other way. If 253000 suicides were not enough to wake up our cynical rulers, what will?

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## REMEDIES

Farmers need protection through protective legislation as nothing is typically done to help them settle their debts or tackle the unprecedented price rise that leads them to commit suicides. Mere lip sympathy by political parties and government officials is not enough to bridge the widening demand-supply gap in the agricultural sector.

1. Minimum Support Price mechanism for agricultural produce should appropriate with consideration increase in agricultural inputs.
2. All crops should cover under crops insurance.
3. To integrate surface and groundwater irrigation schemes and integrates the line department in order that the schemes are implemented efficiently.
4. Ensure that the formal banking system in the rural areas covers all the credit requirements of farmers and others and that the coverage of the formal financial system is extended to all rural households.
5. Set up a Distress Fund that will provide support to banks in chronically drought prone areas, and permit some debt relief to cultivators in extreme distress.
6. Focus on increasing agricultural productivity with sustained growth and lower costs of production with innovation in high yielding seeds.
7. Develop a land use strategy with particular reference to drought-prone areas.
8. Promote and provide incentives for sustainable agriculture.
9. Identify input needs and monitor the provision of inputs to farmers.
10. Promote relevant public research in agriculture, particularly dry land agriculture, for the development of drought and disease resistant seeds of cereals and pulses.

11. Analyze the relationship between input costs and market prices and suggest appropriate and timely interventions by the state/central government agencies, in order to ensure remunerative prices to the farmers.
12. Monitor the adverse effects of droughts and pests on agriculture and bring in the required initiatives by the appropriate agencies to mitigate distress on account of these calamities.
13. Oversee the settlement of land records, registration of all tenancies, and issue of passbooks to all cultivators including tenants.
14. Improve infrastructure for crop markets and the post-harvest management of the production.
15. Identify proper opportunities to promote rural employment, including nonfarm employment, encourage diversification within and out of agriculture; develop value addition activities such as agro-processing in rural areas in a way that benefits farmers.
16. Crop failures are a disaster for farmers and their families. Therefore government should make legal provision about crop insurance because they needy farmers take money from private lenders or banks or other finical institutions but when the crops fail, they are left with no option other than death.
17. Set up a commission with statuary powers that takes decisions on the issues such as genetic modification technology and its impact on Indian agriculture, agriculture pricing policy and cropping pattern.
18. Government should increase public expenditure on rural development.
19. Crop diversification must be adopted by the farmer and govt should give motivation.

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# IMPACT OF FORGING DIRECT INVESTMENT ON INDIAN ECONOMY

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**ABSTRACT**

*Foreign direct investment (FDI) is a key element in international economic integration. FDI creates direct, stable and long-lasting links between economies. It encourages the transfer of technology and know-how between countries, and allows the host economy to promote its products more widely in international markets. FDI is also an additional source of funding for investment and, under the right policy environment; it can be an important vehicle for enterprise development.*

**KEYWORDS**
Direct Investment, development, economic, inflows.

## INTRODUCTION

Foreign Direct Investment (FDI) is fund flow between the countries in the form of inflow or outflow by which one can able to gain some benefit from their investment whereas another can exploit the opportunity to enhance the productivity and find out better position through performance. The effectiveness and efficiency depends upon the investors perception, if investment with the purpose of long term then it is contributes positively towards economy on the other hand if it is for short term for the purpose of making profit then it may be less significant. Depending on the industry sector and type of business, a foreign direct investment may be an attractive and viable option. Any decision on investing is thus a combination of an assessment of internal resources, competitiveness, and market analysis and market expectations. The FDI may also affect due to the government trade barriers and policies for the foreign investments and leads to less or more effective towards contribution in economy as well as GDP of the economy. The studies try to find out the implications which affect the economic scenario and also measure the level of predominance by the factors for economic contribution to India.

## OBJECTIVES

The present study is mainly proposed to examine the following objectives.

- To know the concept, structure and determinants of FDI
- To know the extent of inflow FDI into India.
- To evaluate the impact of FDI on the Indian economy.
- To know the flow of investment in India.

## RESEARCH METHODOLOGY

### DATA COLLECTION

This study is based on secondary data. The required data have been collected from various sources, i.e., World Investment Reports, Asian Development Bank's Reports, various Bulletins of Reserve Bank of India, publications from Ministry of Commerce, Govt. of India, Economic and Social Survey of Asia and the Pacific, United Nations, Asian Development Outlook, Country Reports on Economic Policy and Trade Practice- Bureau of Economic and Business Affairs, US Department of State and from websites of World Bank, IMF, WTO, RBI, UNCTAD, EXIM Bank, etc.It is a time series data and the relevant data have been collected for the period 2006 to 2011.

### DETERMINANTS OF FDI

The determinant varies from one country to another due their unique characteristics and
Opportunities for the potential investors. In specific the determinants of FDI in India are:

**1. Stable policies:** India stable economic and socio policies have attracted investors across border. Investors prefer countries which stable economic policies. If the government makes changes in policies which will have effect on the business. The business requires a lot of funds to be deployed and any change in policy against the investor will have a negative effect.

**2. *Economic factors*:** Different economic factors encourage inward FDI. These include interest loans, tax breaks, grants, subsidies and the removal of restrictions and limitation. The government of India has given many tax exemption and subsidies to the foreign investors who would help in developing the economy.

**3. Cheap and skilled labor:** There is abundant labor available in India in terms of skilled and unskilled human resources. Foreign investors will to take advantage of the difference in the cost of labor as we have cheap and skilled labors. Example: Foreign firms have invested in BPO's in India which require skilled labor and we have been providing the same.

**4. Basic Infrastructure:** India though is a developing country, it has developed special economic zone where there have focused to build required infrastructure such as roads, effective transportation and registered carrier departure worldwide, Information and communication network/technology, powers, financial institutions, and legal system and other basic amenities which are must for the success of the business. A sound legal system and modern infrastructure supporting an efficient distribution of goods and services in the host country.

**5. Unexplored Markets:** In India there is large scope for the investors because there is a large section of markets have not explored or unutilized. In India there is enormous potential customer market with large middle class income group who would be target group for new markets. Example: BPO was one sector where the investors had large scope exploring the markets where the service was provided with just a call, with almost customer satisfaction.

**6. Availability of Natural Resources**: As we that India has large volume of natural resources such as coal, iron ore, Natural gas etc. If natural resources are available they can be used in production process or for extraction of mines by the foreign investors.

## FOREIGN DIRECT INVESTMENT FLOWS TO INDIA

FDI inflows to India witnessed significant moderation in 2010-11 while other EMEs in Asia and Latin America received large inflows. This had raised concerns in the wake of widening current account deficit in India beyond the perceived sustainable level of 3.0 per cent of GDP during April-December 2010. This also

assumes significance as FDI is generally known to be the most stable component of capital flows needed to finance the current account deficit. Moreover, it adds to investible resources, provides access to advanced technologies, assists in gaining production know-how and promotes exports.

A perusal of India's FDI policy *vis-à-vis* other major emerging market economies (EMEs) reveals that though India's approach towards foreign investment has been relatively conservative to begin with, it progressively started catching up with the more liberalized policy stance of other EMEs from the early 1990s onwards, *inter alia* in terms of wider access to different sectors of the economy, ease of starting business, repatriation of dividend and profits and relaxations regarding norms for owning equity. This progressive liberalization, coupled with considerable improvement in terms of macroeconomic fundamentals, reflected in growing size of FDI flows to the country that increased nearly 5 fold during first decade of the present millennium.

Though the liberal policy stance and strong economic fundamentals appear to have driven the steep rise in FDI flows in India over past one decade and sustained their momentum even during the period of global economic crisis (2008-09 and 2009-10), the subsequent moderation in investment flows despite faster recovery from the crisis period appears somewhat inexplicable. Survey of empirical literature and analysis presented in the paper seems to suggest that these divergent trends in FDI flows could be the result of certain institutional factors that dampened the investors" sentiments despite continued strength of economic fundamentals. Findings of the panel exercise, examining FDI trends in 10 select EMEs over the last 7 year period, suggest that apart from macro fundamentals, institutional factors such as time taken to meet various procedural requirements make significant impact on FDI inflows. This paper has been organised as follows: Section 1 presents trends in global investment flows with particular focus on EMEs and India. Section 2 traces the evolution of India's FDI policy framework, followed by cross-country experience reflecting on India's FDI policy vis-à-vis that of select EMEs. The last section presents the conclusions.

**SECTION 1: TRENDS IN FDI INFLOWS**

Widening growth differential across economies and gradual opening up of capital accounts in the emerging world resulted in a steep rise in cross border investment flows during the past two decades. This section briefly presents the recent trends in global capital flows particularly to emerging economies including India.

***GLOBAL TRENDS IN FDI INFLOWS***

During the period subsequent to dotcom burst, there has been an unprecedented rise in the cross-border flows and this exuberance was sustained until the occurrence of global financial crisis in the year 2008-09. Between 2003 and 2007, global FDI flows grew nearly four -fold and flows to EMEs during this period, grew by about three-fold. After reaching a peak of US$ 2.1 trillion in 2007, global FDI flows witnessed significant moderation over the next two years to touch US$ 1.1 trillion in 2009, following the global financial crisis. On the other hand, FDI flows to developing countries increased from US$ 565 billion in 2007 to US$ 630 billion in 2008 before moderating to US$ 478 billion in 2009.

The decline in global FDI during 2009 was mainly attributed to subdued cross border merger and acquisition (M&A) activities and weaker return prospects for foreign affiliates, which adversely impacted equity investments as well as reinvested earnings. According to UNCTAD, decline in M&A activities occurred as the turmoil in stock markets obscured the price signals upon which M&As rely. There was a decline in the number of green field investment cases as well, particularly those related to business and financial services.

From an institutional perspective, FDI by private equity funds declined as their fund raising dropped on the back of investors" risk aversion and the collapse of the leveraged buyout market in tune with the deterioration in credit market conditions. On the other hand, FDI from sovereign wealth funds (SWFs) rose by 15 per cent in 2009. This was apparently due to the revised investment strategy of SWFs - who have been moving away from banking and financial sector towards primary and manufacturing sector, which are less vulnerable to financial market developments as well as focusing more on Asia.

As the world economic recovery continued to be uncertain and fragile, global FDI flows remained stagnant at US $ 1.1 trillion in 2010. According to UNCTAD"s Global Investment Trends Monitor (released on January 17, 2011), although global FDI flows at aggregate level remained stagnant, they showed an uneven pattern across regions – while it contracted further in advanced economies by about 7 per cent, FDI flows recovered by almost 10 per cent in case of developing economies as a group driven by strong rebound in FDI flows in many countries of Latin America and Asia. Rebound in FDI flows to developing countries has been on the back of improved corporate profitability and some improvement in M&A activities with improved valuations of assets in the stock markets and increased financial capability of potential buyers.

Improved macroeconomic conditions, particularly in the emerging economies, which boosted corporate profits coupled with better stock market valuations and rising business confidence augured well for global FDI prospects. According to UNCTAD, these favorable developments may help translate MNC"s record level of cash holdings (estimated to be in the range of US$ 4-5 trillion among developed countries" firms alone) into new investments during 2011. The share of developing countries, which now constitutes over 50 per cent in total FDI inflows, may increase further on the back of strong growth prospects. However, currency volatility, sovereign debt problems and potential protectionist policies may pose some risks to this positive outlook. Nonetheless, according to the Institute of International Finance (January 2011), net FDI flows to EMEs was projected to increase by over 11 per cent in 2011. FDI flows into select countries are given in Table 1.

**TABLE 1: COUNTRIES WITH HIGHER ESTIMATED LEVEL OF FDI INFLOWS THAN INDIA IN 2010**

| | Amount (US$ billion) | | | | Variation (Per cent) | | |
|---|---|---|---|---|---|---|---|
| | **2007** | **2008** | **2009** | **2010 (Estimates)** | **2008** | **2009** | **2010 (Estimates)** |
| World | 2100.0 | 1770.9 | 1114.2 | 1122.0 | -15.7 | -37 | **0.7** |
| Developed Economies | 1444.1 | 1018.3 | 565.9 | 526.6 | -29.5 | 44.4 | 6.9 |
| United States | 266.0 | 324.6 | 129.9 | 186.1 | 22.0 | -60.0 | 43.3 |
| France | 96.2 | 62.3 | 59.6 | 57.4 | -35.2 | -4.3 | -3.7 |
| Belgium | 118.4 | 110.0 | 33.8 | 50.5 | -7.1 | -69.3 | 49.4 |
| United Kingdom | 186.4 | 91.5 | 45.7 | 46.2 | -50.9 | -50.1 | 1.1 |
| Germany | 76.5 | 24.4 | 35.6 | 34.4 | -68.1 | 45.9 | -3.4 |
| DevelopingEconomies | 564.9 | 630.0 | 478.3 | 524.8 | 11.5 | -24.1 | 9.7 |
| China | 83.5 | 108.3 | 95.0 | 101.0 | 29.7 | -12.3 | 6.3 |
| Hong Kong | 54.3 | 59.6 | 48.4 | 62.6 | 9.8 | -18.8 | 29.3 |
| Russian Federation | 55.1 | 75.5 | 38.7 | 39.7 | 37.0 | -48.7 | 2.6 |
| Singapore | 35.8 | 10.9 | 16.8 | 37.4 | -69.6 | 54.1 | 122.6 |
| Saudi Arabia | 22.8 | 38.2 | 35.5 | - | 67.5 | -7.1 | - |
| Brazil | 34.6 | 45.1 | 25.9 | 30.2 | 30.3 | -42.6 | 16.6 |
| India | **25.0** | **40.4** | **34.6** | **23.7** | 61.6 | -14.4 | -31.5 |

**Source:** World Investment Report, 2010 and Global Investment Trends Monitor, UNCTAD.

***SECTION 1.2: TRENDS IN FDI INFLOWS TO INDIA***

With the tripling of the FDI flows to EMEs during the pre-crisis period of the 2000s, India also received large FDI inflows in line with its robust domestic economic performance. The attractiveness of India as a preferred investment destination could be ascertained from the large increase in FDI inflows to India, which rose from around US$ 6 billion in 2001-02 to almost US$ 38 billion in 2008-09. The significant increase in FDI inflows to India reflected the impact of liberalization of the economy since the early 1990s as well as gradual opening up of the capital account. As part of the capital account liberalization, FDI was gradually allowed in almost all sectors, except a few on grounds of strategic importance, subject to compliance of sector specific rules and regulations. The large and stable FDI flows also increasingly financed the current account deficit over the period. During the recent global crisis, when there was a significant deceleration in global FDI flows during 2009-10, the decline in FDI flows to India was relatively moderate reflecting robust equity flows on the back of strong rebound in domestic growth ahead of global recovery and steady reinvested earnings (with a share of almost 25 per cent) reflecting better profitability of foreign companies in India.

However, when there had been some recovery in global FDI flows, especially driven by flows to Asian EMEs, during 2010-11, gross FDI equity inflows to India witnessed significant moderation. Gross equity FDI flows to India moderated to US$ 20.3 billion during 2010-11 from US$ 27.1 billion in the preceding year.

**TABLE 2: EQUITY FDI INFLOWS TO INDIA**

| Sectors | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 |
|---|---|---|---|---|---|
| **Sectoral shares (Per cent)** | | | | | |
| Manufactures | 17.6 | 19.2 | 21.0 | 22.9 | 32.1 |
| Services | 56.9 | 41.2 | 45.1 | 32.8 | 30.1 |
| Construction, Real estate and mining | 15.5 | 22.4 | 18.6 | 26.6 | 17.6 |
| Others | 9.9 | 17.2 | 15.2 | 17.7 | 20.1 |
| **Total** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** |
| **Equity Inflows (US$ billions)** | | | | | |
| Manufactures | 1.6 | 3.7 | 4.8 | 5.1 | 4.8 |
| Services | 5.3 | 8.0 | 10.2 | 7.4 | 4.5 |
| Construction, Real estate and mining | 1.4 | 4.3 | 4.2 | 6.0 | 2.6 |
| Others | 0.9 | 3.3 | 3.4 | 4.0 | 3.0 |
| **Total Equity FDI** | **9.3** | **19.4** | **22.7** | **22.5** | **14.9** |

From a sectoral perspective, FDI in India mainly flowed into services sector (with an average share of 41 per cent in the past five years) followed by manufacturing (around 23 per cent) and mainly routed through Mauritius (with an average share of 43 per cent in the past five years) followed by Singapore (around 11 per cent). However, the share of services declined over the years from almost 57 per cent in 2006-07 to about 30 per cent in 2010-11, while the shares of manufacturing, and „others" largely comprising „electricity and other power generation" increased over the same period . Sectoral information on the recent trends in FDI flows to India show that the moderation in gross equity FDI flows during 2010-11 has been mainly driven by sectors such as „construction, real estate and mining" and services such as „business and financial services". Manufacturing, which has been the largest recipient of FDI in India, has also witnessed some moderation.

## CONCLUSIONS

An analysis of the recent trends in FDI flows at the global level as well as across regions/countries suggests that India has generally attracted higher FDI flows in line with its robust domestic economic performance and gradual liberalization of the FDI policy as part of the cautious capital account liberalization process. Even during the recent global crisis, FDI inflows to India did not show as much moderation as was the case at the global level as well as in other EMEs. However, when the global FDI flows to EMEs recovered during 2010-11, FDI flows to India remained sluggish despite relatively better domestic economic performance ahead of global recovery. This has raised questions especially in the backdrop of the widening of the current account deficit beyond the sustainable level of about 3 per cent. In order to analyze the factors behind such moderation, an empirical exercise was undertaken which did suggest the role of institutional factors (Government's to implement quality policy regime) in causing the slowdown in FDI inflows to India despite robustness of macroeconomic variables.

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# PROFILES OF KVI ARTISANS IN MANIPUR

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**ABSTRACT**

*Manipur is one of the north eastern states of India. It has a common border with the neighbouring country Myanmar. Since Past many years this state has been suffering with many problems of socio and economic problems. The main sources of income are agriculture and allied activities. Rural industries are considered to be one of the most viable ways of living for many people in the state since there are no large scale industries where people can be employed. The developments of rural industries need to study the profile of KVI artisans, which reflects the background and the potentials of the rural people. The study aims to analyse the socio economic profile and activities of village artisans who are involved in the khadi and village industries. It is a matter of concern to find out the different types of industries which are more prospective in the state and the level of awareness to the people on different avenues for the sources of fund for establishment of rural industries.*

**KEYWORDS**
KVI, PMEGP, REGP, Potential of Earning, Industrial Policy.

## INTRODUCTION

The pattern of economic development in Manipur, one of the north eastern states in India, is very significantly affected by the unemployment problems. It is a matter of concern to see the insight into the socio economic profile of village artisans. Village artisans are entrepreneur in one sense and they are responsible for economic growth and generation of employment opportunities in the state. It is also true that village industries alone cannot make a self reliant society, without the participation of other economic sectors, but we cannot underestimate the role of village industries in the economy of our society. Therefore, the analysis of the different background like family, occupational, educational of the entrepreneurs, economic environment, motivational factors, earning capability, problems faced etc. In this section different demographic and socio environment of the selected respondent are analyzed by using certain statistical tools and the test of significance.

The socio economic profile and background of selected respondent in terms of their age, marital status, educational qualification, occupational background and caste, are presented hereunder.

Like other states, Manipur basically depends on agriculture and exhibits all characteristic of an under developed economy. The important characteristics of an under developed economy can be listed as low per capita income, agriculture being the main occupation, under utilization of resources, lack of industrialization etc.

Even though there is a rich natural resources and potential for establishment of rural industry in Manipur, particularly the rural people are less literate and rural areas are remote from the cities. The Ministry of Micro, Small and Medium Enterprise through Khadi and Village Industries Commission has taken the initiative for promotion of rural industry in the state like Prime Ministers Employment Generation Programme (PMEGP) and REGP (Rural Employment Generation Programme).

## REVIEW OF LITERATURE

Following are the views of some of the authors on khadi and village industries.

In view of Hoshiar Singh (2001), the administrative set up for executing the rural industrial development programme has been manifested with certain problems, such as the multiplicity of agencies (which result in the overlapping of the organizational structure, function, programme and schemes etc., particularly at field level, and defying of the principle of integration of efforts), absence of adequate coordination, inconsistent personnel system (such as lack of adequate staff, particularly at the field level, maladjusted officials, lack of motivation among personnel), bureaucratization, red tapism, corruption, favoritism and nepotism, the prevailing inefficiency, rigidity and delay in decision making.

Nagarjuna (2001) observed that government policies and five year plans laid lot of hope in rural industrialization, but in reality the small entrepreneurs are still feel scared to start an industry, due to the prevailing problems in this sector i.e., sickness which is very much prone to SSI units than large and medium industries. Due to these sickness problems the expected plans and policies to some extent did not realize.

Misra B. (2004), advocate the development of rural industries to relieve pressure on land, establish linkage between agriculture and industry, increase employment opportunities, improve the economic well being of rural people by increasing their income and prevent migration of rural population to cities which increases slums. There are some spheres in which large scale industries are inevitable like iron steel, chemicals fertilizers, locomotive etc. where economies of scale are important. But in view of the sophisticated technology applied in these industries, we cannot generate adequate employment through the factory industries. He further added that, it would be very unfortunate to have an economy consisting of a few big enterprises and a vast multitude of undeveloped farms and crafts. This will not transform the economy of India.

M.K. Ramchandran (2009) expressed that the surplus force from agriculture is to be diverted to village industries. These transferred labour forces should be provided improved technology based on existing tools and skills. The best technology is that poor should be able to handle it. For better and efficient utilization of technology at various levels of rural industrialization, an ideal organizational structure which can take care of all vertical linkages, backward linkages like production, processing and forward linkages like marketing of products) as well as horizontal linkages (supply of better tools and raw materials, inputs, up gradation of skills and services) is an essential pre requisites.

The literature found so far has been concentrated in one or other parts of India, but do not cover the role of KVIC in generating employment opportunities in Manipur. Therefore the study has been taken up in view to cover the context of Manipur.

The objective of the study is to analyse the socio economic profile and activities of KVI artisans in Manipur.

## METHODOLOGY OF STUDY

Stratified Random Sampling Method was used for collection of data and other information related to village industries. The size of the sample is 150 units from different units registered as village industries scattered in nine districts of Manipur. 50 were assisted through Rural Employment geraration Programme (REGP), and 100 with Prime Ministers Employment Generation Programme (PMEGP).

## PROFILE OF VILLAGE ARTISANS

1. **AGE WISE DISTRIBUTION OF RESPONDENTS:** Age is an important element in the personality of an individual for entrepreneurship. The analysis is made to examine the age distribution of village artisans. Relevant data are presented in table no. 1. Most of the village artisans work under the age category of less than 40 years and account for about 38.7 percent followed by age category of less than 35 with 28.7 percent. 8.7 percent of the respondents are less than the age category of less than 30. Thus, it is signify that most of the entrepreneur emerges after the age of 30. In a general sense no or less people undergo for entrepreneurship before the age of 30.
2. **SEX WISE DISTRIBUTION:** Sex wise distribution determines the status of women in the participation of economic activities. Manipuri women have played an outstanding role in every field including cultural activities and economic activities. Their roles are equally reflected in the performance of KVI. Out of the 150 sample size 59.3 percent of the respondents were male and 40.7 were female, 54 percent of the sampled KVI units were dominated by male workers and 46 percent of the KVI units were dominated by female workers. Women participation is comparatively very high particularly in the textile industries, as this sector is grossly dominated by women
3. **CASTE WISE DISTRIBUTION OF RESPONDENTS:** The state is settled with different caste and tribe, the sampled size attempt to constitute with all the sections of the society. Majority of the population comprises the Meiteis communities which are either OBC or General make 70 percent of the responses, 20 percent by Scheduled Tribe (ST), and 10 percent by Scheduled Caste (SC). The ST who settled mainly at the five hilly districts, participate better at the Senapati, Churachandpur and Chandel Districts, while SC dispersed mainly at the four valley districts and comprised small number of population
4. **EDUACATIONAL QUALIFICATION OF RESPONDENTS:** Education is an important determinant of Social class. It is an important instrument of increasing and betterment unemployed youth. Education has been reposted as a crucial factor for developing modern entrepreneurship and it accelerates the entrepreneurial spirit. It reflects that 36.7 percent of the respondents are under graduate followed by graduate as 28 percent. Matriculate account for 26 percent and post graduate with least number 90.3 percent. Many of the KVI artisans are well educated and they have chosen this line as a means of self employment.
5. **MARITAL STATUS OF RESPONDENTS:** Marriage system is an important phase in an individual's life. It is important to study the marital status to determine its impact on the establishment and trends of success. 38.7 percent of the respondents are single when they run the KVI unit and remaining 61.3 percent are married. Thus it signifies that KVI units are a way to livelihood for the artisans.
6. **NATURE OF INDUSTRY:** According to the natural resources available and skills of the rural people determine the nature of the industry, which are commonly found in the state. Textile industry is found to be most popular with 24 percent followed by rural engineering with 19.3 percent. Agro, Forest, Food and Service industry have an average percentage of 14.7, 12.7, 11.3 and 10 respectively.
7. **REASONS FOR SELECTION OF INDUSTRY:** There are certain factors for choosing KVI as a means for earning livelihood. Generally unemployment is the prime factors, but some factors also influenced them. 18 percent of the respondents are continuing their family business, 26.7 percent are due to the availability of raw materials and skills, and 20.7 percent are due to availability of loans and finance. These factors can be considered as the main reasons, while there are some respondents whose motive is to promote the KVI with 9.3 percent of respondents, some respondents are due to low investment of capital in KVI with 8.7 percent and the reasons for easy to undertake is 16.7 percent.
8. **MOTIVATION FOR SELECTION OF INDUSTRY:** The reasons for selecting KVI are supported by some motivating factors which are gain through external agencies. 33.3 percent of the respondents are motivated by realizing the feasibility of KVI projects with technical knowledge. 28.7 percent are attracted by demand of KVI products in the market. The successful entrepreneurs are playing an important role by drawing the attention 28.7 percent of the respondents. Participation of training and awareness programme organize by different institute lead ways for 12.7 percent of the respondents.
9. **PROBLEMS FACED BY KVI UNITS:** No respondent is free from any problems. They are facing problems in different ways. Some of them are within the control of the KVI units, some are with the implementing agencies and some are uncontrollable. The social problems like Bandh, Blocked of National Highways and General Strikes account for about 30 percent of the problems faced by the respondent. These are the main reasons for hampering the activities of many enterprises. Respondents who have marketing problems account for 20 percent, problem in availing support services account for 22.7 percent, financial problems account for 16 percent, Production problems for 11.3 percent.
10. **FINANCIAL PROBLEMS:** Financial problems of the KVI units are many and varied. It is found common to all the units that the financial institution have been always reluctant in providing their services, this may be due to large number of customer and less number of Banks and financial institution. Respondents who account for reluctance by financial services are 40.7 percent. Some of the respondents have problems of not having adequate collateral securities, which they have manage with great difficulty and they account for 36.7 percent. 3.3 percent of the respondents have problems with tight repayment schedule. In general most of the units are facing problems in financial management but only 2.7 percent of the respondents acknowledge it. Due to insufficiency in fund, 16.7 percent of the respondents are having problems for getting further financial aids.
11. **ALTERNATE MEANS OF FINANCIAL ASSISTANCE:** The problems of insufficiency common to all the beneficiaries, but the matter of fact is its degree. Whenever the problems arises 24.7 percent of the respondents rely on the helps of relatives, 11.3 on local Micro Finance Institute, 15.3 percent on Mortgages, 18 percent on personal loan from bank and 30.7 have either give no responses or some other means.
12. **RAW MATERIAL OF KVI:** Raw materials are the most important inputs for every business, 60.7 percent of the respondents depends on locally available raw material, which are mainly food & Agro Based, Forest Based and Textile. 36 percent of the respondents used raw materials from outside the state and 3.4 percent used processed raw materials. Availability of raw materials is frequently disturbed by shortage of fund and it accounts for 44.7 percent, 31.3 percent of the respondents accounts due to seasonality of the raw materials which are mainly Agro Based and Forest Based. Restriction of cutting timber in the state affected 9.3 percent of the respondents and 4.7 percent by others.
13. **PROBLEMS OF LABOUR:** In spite of many efforts made by the Department of Commerce & Industries and other agencies, many workers are found to be with fewer skills, which accounts for 34 percent. 27.3 percent of the respondents give comment that, the workers have less chances of growth, unless they run the KVI by their own. 17.3 percent of the respondents view that majority of the workers are illiterate or get only lower education. 13.4 percent of the respondents have view that the workers have no other better job than KVI and 8 percent work for temporary employment.
14. **APPLICATION OF MACHINERY:** Application of Machinery is not against the ideology of Gandhiji, in presents context most of the KVI units have used modern machinery, 7.3 percent of the units are fully mechanized and have automatic system, and 57.3 percent are semi mechanized, 28 percent are still Un-mechanized and 7.3 percent used traditional and outdated technology which are even dangerous for workers.
15. **PROBLEMS IN PRODUCTION:** The reasons for hampering the production is interrupted power supply and it account for 24.7 percent of the respondents. Due to the lack of technical support from the government and implementing agencies of KVI, 32.7 percent of the units are not getting the marked target. Due to high acquisition cost 10.7 percent of the respondents are not having the right technology. Demand Supply Gap refers to inability of the KVI units in facing the demand. 20 percent still do not have adequate working area.
16. **PROBLEMS IN MARKETING:** Many respondents has been facing the problems of lack of information of marketing technique which account for 51.33 percent, Attitude of customer accounts for 16 percent, where they think that KVI products are not standardized as branded products, on the other hand entrepreneur's view is also limited to the domestic markets. 10.6 percent of the responses have Inadequate Publicity and 7.4 percent of the KVI units have problems of lack of marketing knowledge and strategies.

17. **METHODS FOR SALES:** 10.7 percent of the respondents use sales outlet system at different location apart from the factory shed, 30.7 percent through sales representatives, 36.7 percent have main targets in participating at fair and exhibition at state and national level and remaining 22 percent through retailers.
18. **TARGETS FOR MARKETING:** 4 percent of the total respondents have the motive to export as well as local market and owned outlet. 52 units which are 34.7 percent have target at both local market and owned outlet while 89 units which are 59.3 percent give emphasizes to the local markets only.
19. **PROBLEMS IN EXPORT:** 58 percent of the total respondents give no responses, 7.3 percent are not aware about export, 4.7 percent are aware but do not have the right knowledge, 3.3 percent found it to be very complicated, 4 percent complaint about the lack of support from government, 20.7percent of the respondents comment that the products are not sufficient even for the local markets.

## FINDINGS AND CONCLUSION

There is low potential for earning in the agricultural sector and the private sector enterprises are not labour oriented, therefore rural industry and non farm sector are more appropriate in a developing country like ours. The diversification of economic activity is limited in the hilly states due to difficult terrain, inaccessibility to market and modern inputs and technology, deficient infrastructure and insufficient energy and high transport costs leading to non competitiveness of products, therefore it is necessary to overcome the problems of unemployment and poverty, and commercialize the production of farm and non-farm. The potentials of rural industries are an indispensable part of our rural development.

The comparison of industrial units established and employment generated through it reflects inappropriate with the total population. Thus highlighting the importance of giving emphasizes on self employment generation schemes.

In many aspects, Industrial Policy of Manipur identified rural industry including handloom and handicraft to be the most viable industry in the context of the state. There are much potential for the development of rural industry which need to be re vitalized again.

The annual plan of the state since Tenth Five Year Plan, continue to recognize Village and Small Enterprises (VSE) sector as the main thrust area of the industrial development since it provides largest employment next to agriculture.

Schemes are not fully implemented in the state except PMEGP and SFRUTI, which revealed the reasons for hampering the progress for rural industries.

After comparing the performance of KVI and the other manufacturing Industries, it can be resolved that khadi and Village Industries are playing an important role not only in the economic development but also in sustainable development of the biodiversity of the natural resources which give less impact on environment degradation. Therefore, the state govt. should give more initiative in establishment of industries which are more eco friendly, less capital intensive and mass participation etc.

REGP has been implemented in the state, till the end of 2007-08, through State KVIC, KVIB and DICs. But it is found in the analysis that the schemes were provided to different districts unevenly.

It is observed from the analysis that the number of projects under REGP through State KVIC is evenly spread except some industries like Handmade Paper and Polymers & Chemical Industries.

Employment provided during the period 2002-03 to 2007-08 by State KVIC is around seven persons per unit. During these periods the mark of employment reaches to 2352. While gross employment has reached to around 36 thousand during the year 2006-07.

Performances of Banks in providing loans to beneficiaries were grossly equivalent among State Bank of India, United Bank of India and Central Bank of India while performance of other Nationalized Banks are not substantial.

The production of certain industry like polymers and chemical based industry is very low. Thus it signifies that, the rate of persons willing to perform in this industry is very low. But the demand of these products including detergents, washing powder, dish cleaner are good.

No units for Hand Made Paper Industry were found. But there is need for creating its demand in the state.

Strengthening of rural industrialization offers a wonderful opportunity, and a challenge, to our engineers to use their creativity and ingenuity and develop "appropriate technologies" which will enable "production by masses "to compete with "mass production". Past experience shows that there are certain niche areas like herbal and organic health foods, bakery products, soaps and other toiletry products, handmade paper based products, and biomass based energy systems, micro-hydel systems etc. where decentralized production in rural areas has a natural edge over centralized production in urban and semi urban locals. If sufficient attention is given by engineers to improve the existing primitive technologies used in this sector should be possible to produce high quality products in rural industries at very competitive prices. This is certainly challenging to grasp the opportunities to diversify in new territories.

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# WORKPLACE VIOLENCE: AWARENESS, PREVENTION AND STRATEGIC ISSUES

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**ABSTRACT**

*Violence has always been part of working life. Millions of workers are scarred by it on all continents. Shootings, assaults, and other incidents of workplace violence routinely make the news. The issue of safety at work cannot be tackled without looking at new forms of enterprise organization and management and their potential and actual effects on workers' physical and moral integrity. The rise in workplace violence and its corollary, stress, is no doubt one of the most visible signs of this trend. Any organization, large or small, will be far better able to spot potential dangers and defuse them before violence develops and will be able to manage a crisis better if one does occur, if its executives have considered the issue beforehand and have prepared policies, practices, and structures to deal with it. Workplace violence is now recognized as a specific category of violent crime that calls for distinct responses from employers, law enforcement, and the community. The present paper explains the various types of conduct that may constitute workplace violence, circumstances when the use of force in the workplace may be justifiable, work policies on workplace violence and what actions an employer should take when investigating an allegation of workplace violence.*

**KEYWORDS**

law enforcement, stress, violent crime, workplace violence, work policies.

## 1. INTRODUCTION

Violence at work is now an alarming phenomenon worldwide. Every few days, there is another story on the news. One day, it may be a convenience store shooting; the next, a sexual assault in a company parking lot; a few days later, it's a disgruntled employee holding workers hostage, or a student attacking a teacher. Not surprisingly, the incidents of workplace violence that make the news are only the tip of the iceberg. What its victims all have in common is that they were *at work, going about the business of earning a living, but something about their workplace environment - often something foreseeable and preventable - exposed them to attack by a customer, a co-worker, an acquaintance, or even a complete stranger.*

Violence at work can take a number of different forms. It can be in the form of physical assaults or threats, or it can be psychological - expressed through bullying, mobbing or harassment on many grounds, including gender, race or sexual orientation. Sexual harassment, a problem most commonly affecting women, is one of the most offensive and demeaning experiences. Violence can come from outside as well as from inside the workplace It can come from colleagues and acquaintances as well as strangers such as clients. Certain types of violence tend to happen more in specific sectors. *Health care, education and retailing sectors* are among the occupations suffering a high incidence of external physical violence.

The ***World Health Organization*** defines workplace violence as, "*Incidents where staff are abused, threatened or assaulted in circumstances related to their work, including commuting to and from work, involving an explicit or implicit challenge to their safety, well-being or health.*"[1]

A commonly cited definition of workplace violence is "any incident in which an employee is abused, threatened or assaulted by fellow employees or by a member of the public in circumstances arising out of the course of his or her employment."[2]

***Buss (1961)***[3] identified eight types of aggression:

- Verbal-passive-indirect (failure to deny false rumors about target, failure to provide information needed by target)
- Verbal-passive-direct ("silent treatment", failure to return communication, i.e. phone calls, e-mails)
- Verbal-active-indirect (spreading false rumors, belittling ideas or work)
- Verbal-active-direct (insulting, acting condescendingly, yelling)
- Physical-passive-indirect (causing others to create a delay for the target)
- Physical-passive-direct (reducing target's ability to contribute, i.e. scheduling them to present at the end of the day where fewer people will be attending)
- Physical-active-indirect (theft, destruction of property, unnecessary consumption of resources needed by the target)
- Physical-active-direct (physical attack, nonverbal, vulgar gestures directed at the target)

In a study performed by ***Baron and Neuman***,[4] researchers found pay cuts and pay freezes, use of part-time employees, change in management, increased diversity, computer monitoring of employee performance, reengineering, and budget cuts were all significantly linked to increased workplace aggression. The study also showed a substantial amount of evidence linking unpleasant physical conditions (high temperature, poor lighting) and high negative effect, which facilitates workplace aggression.[5]

In responses to the ***National Crime Victimization Survey***, a Justice Department report estimated that an average of 1.7 million "violent victimizations," 95 percent of them simple or aggravated assaults, occurred in the workplace each year from 1993 through 1999.[6] (Table I) Estimates of the costs, from lost work time and wages, reduced productivity, medical costs, workers' compensation payments, and legal and security expenses, are even less exact, but clearly run into many billions of dollars.

**TABLE I**

**Average annual number, rate, and percent of workplace victimization by type of crime, 1993–99**

| Crime Category | Average annual workplace victimization | Rate per 1,000 persons in the workforce | Percent of workplace victimization |
|---|---|---|---|
| All Violent Crime | 1,744,300 | 12.5 | 100% |
| Homicide | 900 | 0.01 | 0.1 |
| Rape/Sexual assault | 36,500 | 0.3 | 2.1 |
| Robbery | 70,100 | 0.5 | 4.0 |
| Aggravated assault | 325,000 | 2.3 | 18.6 |
| Simple assault | 1,311,700 | 9.4 | 75.2 |

Sources: Homicide data are obtained from the Bureau of Labor Statistics Census of Fatal Occupational Injuries. Rape and sexual assault, robbery, aggravated assault, and simple assault data are from the NCVS.

## 2. WORKPLACE VIOLENCE: TYPES, POTENTIAL RISK FACTORS, POTENTIAL PREVENTION MEASURES AND PSYCHOLOGICAL EFFECTS

Workplace violence takes several forms, including verbal threats, threatening behavior or physical assaults. It can be classified as to "type" depending on the relationship of the assailant to the worker or the workplace. Their specific characteristics are described below:

**TYPE 1: VIOLENCE BY STRANGERS**

This is violence committed by an assailant who has no legitimate business relationship to the workplace or the worker. For example, the person enters the workplace to commit a robbery or other criminal act. Workplaces at risk of violence by strangers commonly include late night retail establishments and taxi cabs and accounts for most of the fatalities related to workplace violence.

**TYPE 2: VIOLENCE BY CUSTOMERS OR CLIENTS**

This is violence committed by an assailant who either receives services from or is under the custodial supervision of the affected workplace or the victim. Assailants can be current or former customers or clients such as passengers, patients, students, inmates, criminal suspects or prisoners. The workers typically provide direct services to the public, for example, municipal bus or railway drivers, health care and social service providers, teachers and sales personnel. Law enforcement personnel are also at risk of assault from individuals over whom they exert custodial supervision. Violence by customers or clients may occur on a daily basis in certain industries; they represent the majority of non-fatal injuries related to workplace violence.

**TABLE 2: POTENTIAL RISK FACTORS**

| Type 1: Violence by Strangers | Type2: Violence by Customers or Clients |
|---|---|
| • Working with money<br>• Working alone<br>• Working late at night<br>• Isolated worksite<br>• Poor visibility into worksite<br>• Poor lighting outside of worksite<br>• High crime area | • Working in isolation<br>• Working after regular work hours<br>• Lack of controlled access to worksite<br>• Dealing with customers with past violent behavior<br>• Potential weapons [1] (such as scissors) easily visible and accessible<br>• Lack of a quick communication mechanism to security personnel<br>• Lack of alternate escape route |
| **Type3: Violence by Co-workers** | **Type4: Violence by Personal Relations** |
| • High stress in the workplace (impending layoffs, for example) and outside, non-work related stress<br>• Lack of appropriate management protocols for disciplinary actions<br>• Individual with a history of violent behavior<br>• Lack of appropriate training for supervisors | • Individual with history of violent/threatening behavior<br>• Lack of controlled access to the worksite<br>• No communication policy regarding restraining orders<br>• Domestic violence |

**TYPE 3: VIOLENCE BY CO-WORKERS**

This involves violence by an assailant who has some employment related involvement with the workplace, for example, a current or former employee, supervisor or manager. Any workplace can be at risk of violence by a co-worker. In committing a threat or assault, the individual may be seeking revenge for what is perceived as unfair treatment. Fatalities related to violence by co-workers have received much media attention, but account for only a small proportion of all workplace violence related fatalities. Strangers cause most workplace violence fatalities.

**TYPE 4: VIOLENCE BY PERSONAL RELATIONS**

This includes incidents of domestic violence at the workplace by an assailant who confronts an individual with whom he or she has or had a personal relationship outside of work. Personal relations include a current or former spouse, lover, relative, friend or acquaintance. The assailant's actions are motivated by perceived difficulties in the relationship or by psycho-social factors that are specific to the assailant.

**TABLE 3: POTENTIAL PREVENTION MEASURES**

| Type 1: Violence by Strangers | Type2: Violence by Customers or Clients |
|---|---|
| • Training (include de-escalation techniques appropriate to your industry)<br>• Post signs stating cash register only contains minimal cash<br>• Leave a clear, unobstructed view of cash register from street<br>• Have a drop safe, limited access safe or comparable device<br>• Address adequate outside lighting<br>• Examine and address employee isolation factors<br>• Provide security personnel<br>• Communication method to alert police/security<br>• Increase police patrol in the area<br>• Post laws against assault, stalking or other violent act | • Training (including de-escalation techniques appropriate to your industry)<br>• Control access to worksite (e.g., posted restricted access, locked doors)<br>• Examine and address employee isolation factors<br>• Quick communication method to alert security<br>• Eliminate easy access to potential weapons<br>• Client referral/assistance programs<br>• Set up worksite so employees are not trapped from exiting<br>• Provide security personnel<br>• Post laws against assault, stalking or other violent acts |
| **Type3: Violence by Co-workers** | **Type4: Violence by Personal Relations** |
| • Training (including de-escalation techniques appropriate to your industry)<br>• Enforced policy on no tolerance for workplace violence<br>• Management strategy for layoffs<br>• Management policy for disciplinary actions<br>• Access to employee assistance program or other counseling services<br>• Policy prohibiting weapons<br>• Provide security personnel<br>• Post laws against assault, stalking or other violent acts | • Domestic violence training (including de-escalation techniques)<br>• Enforced policies on handling/preventing violence situations<br>• Restraining orders<br>• Control access to worksite<br>• Access to consultation with employer, employee assistance program or other counseling program<br>• Enforced policy prohibiting weapons<br>• Reporting procedures<br>• Relocating within worksite where possible<br>• Necessary staff notification<br>• Provide security personnel<br>• Post laws against assault, stalking or other violent acts |

## 3. EFFECTS OF WORKPLACE VIOLENCE: A CASE STUDY

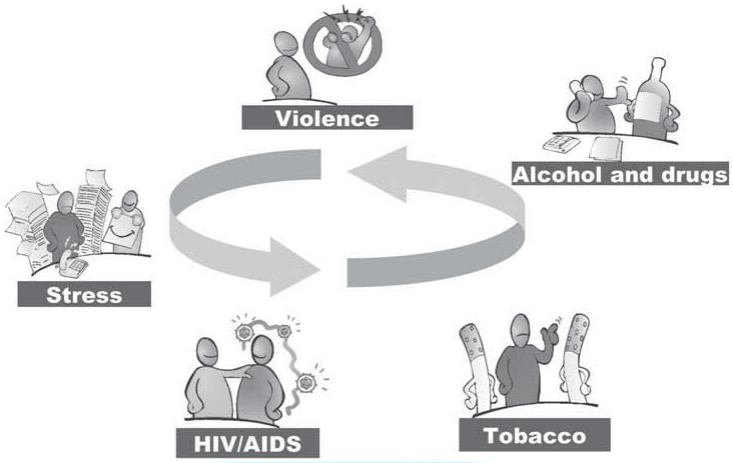
The occurrence of workplace violence may be related to other psychosocial problems. Take the following case study as an example:

*A group of workers in a health care facility has been working together for a number of years. They come from the same community and share the same extended family. One of the individuals was recently diagnosed as being HIV positive. Due to a lack of understanding among his co-workers, he is now eating alone in the*

*canteen and the colleagues are keeping their distance, out of an unnecessary fear of infection. The anxiety of knowing he has HIV, the isolation and the stigmatization, as well as increased financial pressure on the family to purchase new medications, have created increased levels of stress. He has now started to smoke and consume more alcohol. Sometimes, leaving the workplace and drinking alone at lunch, he has been observed becoming more and more abusive towards his colleagues and friends. He repeatedly insults or cajoles individuals about their work or their private lives. He has now been accused of bullying and faces possible disciplinary action.*

This case, although fictitious, is close to reality (Figure1). There is clear evidence that psychosocial problems are causal factors of other psychosocial problems. HIV/AIDS, stress, alcohol and violence are interrelated and they can reinforce each other in a most negative way.[7]

**FIGURE 1: THE INTERRELATIONSHIPS BETWEEN PSYCHOSOCIAL PROBLEMS**




*(Source: Di Martino et al., 2002)*

## 4. WORKPLACE VIOLENCE, 1993-2009: NATIONAL CRIME VICTIMIZATION SURVEY AND THE CENSUS OF FATAL OCCUPATIONAL INJURIES

**METHODOLOGY AND DATA SOURCES**

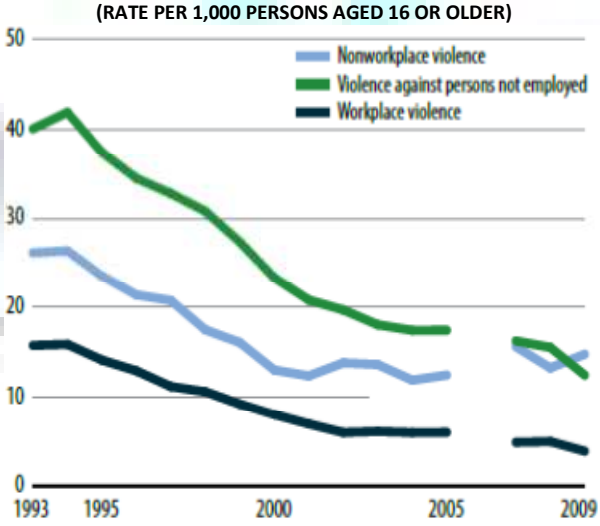
This report presents data on rape, sexual assault, robbery, aggravated assault, and simple assault against persons aged 16 or older while they were at work or on duty as measured by the National Crime Victimization Survey (NCVS). Respondents to the NCVS aged 16 or older are asked to select one occupation that best describes their job. Data on workplace homicide were obtained from the Census of Fatal Occupational Injuries (CFOI), collected by the Bureau of Labor Statistics (BLS). The National Safety Council has adopted the Census of Fatal Occupational Injuries figure, beginning with the 1992 data year, as the authoritative count for work related deaths.

In 2009 approximately 5,72,000 nonfatal violent crimes (rape/sexual assault, robbery, and aggravated and simple assault) occurred against persons aged 16 or older while they were at work or on duty, based on findings from the National Crime Victimization Survey (NCVS). This accounted for about 24% of nonfatal violence against employed persons aged 16 or older. Nonfatal violence in the workplace was about 15% of all nonfatal violent crime against persons aged 16 or older. The rate of violent crime against employed persons has declined since 1993. According to 2009 preliminary data, 521 persons age 16 or older were victims of homicide in the workplace. In about a third of workplace homicides from 2005-2009, the victim worked in a sales or office occupation. The data on homicides in this report are based on the Bureau of Labor Statistics' Census of Fatal Occupational Injuries (CFOI).

**OBSERVATIONS FROM THE REPORT**

1. In 2009, an estimated 4 violent crimes per 1,000 employed persons aged 16 or older were committed while the victims were at work or on duty, compared to 6 violent crimes per 1,000 employed persons age 16 or older in 2002. In 1993, the rate of nonfatal violence was 16 violent crimes per 1,000 employed persons while at work, a rate 75% higher than in 2009 (figure 2).

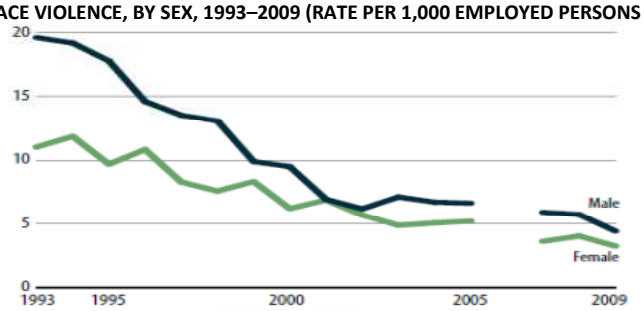
**FIGURE 2: WORKPLACE AND NON WORKPLACE NONFATAL VIOLENCE AGAINST EMPLOYED AND PERSONS NOT EMPLOYED AGED 16 OR OLDER, 1993–2009 (RATE PER 1,000 PERSONS AGED 16 OR OLDER)**




Source: *National Crime Victimization Survey.(* Data from 2006 not included)

**2. Workplace violence declined more rapidly than non workplace violence from 1993 to 2009.** The 2009 workplace violence rate for males was 29% lower than the 2002 rate (figure 3). The rate for females in 2009 was 43% lower than their 2002 rate. The rate of workplace violence against males was 69% lower in 2002 than in 1993. In comparison, the rate of workplace violence against females was 48% lower in 2002 than in 1993. There was no statistically significant difference detected in the 2002 or 2009 rates of workplace violence for males and females.

**FIGURE 3: WORKPLACE VIOLENCE, BY SEX, 1993–2009 (RATE PER 1,000 EMPLOYED PERSONS AGE 16 OR OLDER)**




Source: *National Crime Victimization Survey.(* Data from 2006 not included)

**3. Workplace violence was less likely to involve an offender under the influence of alcohol or drugs than non workplace violence.** A smaller percentage of workplace violence (25%) involved an offender under the influence of alcohol or drugs than Non workplace violence (37%), according to victims (table 4). About 40% of workplace violence did not involve an offender under the influence of alcohol or drugs, compared to about 22% of non workplace violence.

**TABLE 4: PERCEIVED OFFENDER DRUG/ALCOHOL USE IN WORKPLACE AND NON WORKPLACE VIOLENCE, 2005 -2009**

| | Percent of nonfatal violent victimizations in— | |
|---|---|---|
| Offender drug/alcohol use | Workplace | Nonworkplace |
| Total | 100.0% | 100.0% |
| Perceived to be using drugs or alcohol | 24.5 | 36.6 |
| Not using drugs or alcohol | 39.5 | 21.9 |
| Do not know | 36.0 | 41.5 |

*Source: National Crime Victimization Survey*

**4. The most common reason why workplace violence was not reported to the police was that the incident was reported to another official.** About 38% of workplace violence was not reported to the police because the incident was reported to another official, compared to about 7% of non workplace violence (table 5). Similar to the percentages of non workplace violence that were not reported to police, about 22% of workplace violence was not reported to police because the victim thought the incident was a personal matter. About 24% of workplace violence was not reported to police because the victim believed that the incident was not important enough to be reported.

**TABLE 5: REASON FOR NOT REPORTING CRIME TO POLICE, BY WORKPLACE AND NON WORKPLACE VIOLENCE, 2005–2009**

| | Percent of victims in— | |
|---|---|---|
| Reason not reported | Workplace | Nonworkplace |
| Reported to another official | 37.8% | 6.7% |
| Personal matter | 22.4 | 26.1 |
| Not important enough | 23.7 | 26.3 |
| No insurance | 0.2* | 0.3* |
| Found out too late | 0.4* | 0.4* |
| Cannot recover property | --* | 0.2* |
| Lack of proof | 2.3 | 5.6 |
| Police would not help | 8.6 | 18.5 |
| Protect offender | 3.0 | 8.3 |
| Advised not to report | 0.5* | 0.5 |
| Fear of reprisal | 3.8 | 6.4 |
| Too inconvenient | 2.1 | 7.9 |
| Other | 13.8 | 12.5 |
| Does not know | 0.3* | 0.8 |

**(**Source: *National Crime Victimization Survey)*

(Note: Percentages sum to more than 100% because victims may have reported more than one reason. *Based on 10 or fewer sample cases.--Rounds to less than 0.05%. )

**5. Robbers and other assailants accounted for the majority of workplace homicide offenders.** From 2005 through 2009, about 38% of workplace homicide offenders were robbers (table 6). Work associates accounted for about a fifth, and customers and clients represented about 10% of all workplace homicide offenders. Current and former coworkers committed 11% of workplace homicides. Spouses constituted about 3% of offenders in workplace homicides. homicide remains the third leading cause of fatal occupational injuries for all workers and the second leading cause of fatal occupational injuries for women.

**TABLE 6: WORKPLACE HOMICIDES, BY OFFENDER TYPE, 2005–2009**

| Offender type | Percent of workplace homicide victims age 16 or older |
|---|---|
| Total | 100.0% |
| **Robbers and other assailants** | 70.3% |
| Robbers | 38.3 |
| Other assailants | 32.0 |
| **Work associates** | 21.4% |
| Co-worker, former coworker | 11.4 |
| Customer, client | 10.0 |
| **Relatives** | 4.0% |
| Spouse | 2.9 |
| Other relatives | 0.8 |
| **Other personal acquaintances** | 4.3% |
| Current or former boyfriend or girlfriend | 2.0 |
| Other acquaintances | 2.3 |

**(**Source: *Census of Fatal Occupational Injuries, U.S. Department of Labor, Bureau of Labor Statistics)*

Note: Excludes strangers or assailants who were unknown. Includes 2009 preliminary data.

## 5. PREVENTING VIOLENCE: PLANNING AND STRATEGIC ISSUES

### (A) PLANNING PRINCIPLES

As with most other risks, prevention of workplace violence begins with planning. Also, as with other risks, it is easier to persuade managers to focus on the problem after a violent act has taken place than it is to get them to act before anything has happened. If the decision to plan in advance is more difficult to make, however, it is also more logical. Table 7 and table 8 depicts the Acts of violence against a person's work and Acts of violence against a person. In forming an effective workplace violence strategy, important principles include:

- There must be support from the top. If a company's senior executives are not truly committed to a preventive program, it is unlikely to be effectively implemented.
- There is no one-size-fits-all strategy. Effective plans may share a number of features, but a good plan must be tailored to the needs, resources, and circumstances of a particular employer and a particular work force.
- A plan should be proactive, not reactive.
- A plan should take into account the workplace culture: work atmosphere, relationships, traditional management styles, etc. If there are elements in that culture that appear to foster a toxic climate - tolerance of bullying or intimidation; lack of trust among workers, between workers and management; high levels of stress, frustration and anger; poor communication; inconsistent discipline; and erratic enforcement of company policies - these should be called to the attention of top executives for remedial action.
- Planning for and responding to workplace violence calls for expertise from a number of perspectives. A workplace violence prevention plan will be most effective if it is based on a multidisciplinary team approach.
- Managers should take an active role in communicating the workplace violence policy to employees. They must be alert to warning signs, the violence prevention plan and response, and must seek advice and assistance when there are indications of a problem.
- Practice your plan! No matter how thorough or well-conceived, preparation won't do any good if an emergency happens and no one remembers or carries out what was planned. Training exercises must include senior executives who will be making decisions in a real incident.

**TABLE 7: ACTS OF VIOLENCE AGAINST A PERSON'S WORK**

| A. Evaluation of work | B. Assignment of tasks |
|---|---|
| 1.Unjust or exaggerated criticism of work<br>2.Negative evaluation of work, internal memos<br>3. Excessive work monitoring<br>4. Excessive medical monitoring | 1.Withdrawal of work tasks<br>2. Overwork<br>3. Absence of work<br>4. Proliferation of different/new tasks<br>5. Tasks inappropriate to the victim's skills level or state of health<br>6. Pointless or absurd tasks |
| **C. Career management** | **D. Professional communication** |
| 1.Blackmail concerning employment, promotion or transfer<br>2. Compulsory transfer<br>3. Withdrawal or redistribution of work equipment (offices, fax machines, computers, telephones, etc.)<br>4. Discrimination regarding leave, working hours, work burdens or training requests<br>5. Verbal incitements to give up the job | 1.Distortion or concealment of the information needed to perform the work, sabotage of the work<br>2. Discrediting the victim's work in front of Others |

Source: April 2003. tp://meta.fgov.be/pdf/pd/frdd43.pdf

**TABLE 8: ACTS OF VIOLENCE AGAINST A PERSON**

| A. Verbal violence | B. Physical violence |
|---|---|
| 1.Intrusions into private life (asking indiscreet questions, listening in to phone calls, reading the victim's emails, subjecting the victim to phone calls or registered letters at home, etc.)<br>2. Criticizing the victim's private life<br>3. Verbal bullying, shouting at the victim<br>4. Remarks impinging on a person's dignity (mockery, misplaced humour, racism, sexism, nicknames, etc.)<br>5. Disparaging a person in front of others<br>6. Refusing to cooperate with the victim<br>7. Manipulation of verbal communication (denying an oral agreement, lying, vague or shifting comments, emotional blackmail, manipulation of feelings)<br>8. Forbidding other workers to talk to the victim<br>9. Spiteful rumours, unfounded accusations | 1. Aggressive gestures (door-slamming, table-thumping, etc.)<br>2. Threats of physical aggression<br>3. Physical aggression (jostling, spitting, stepping on the victim's feet, molestation, etc.)<br>4. Damaging or destroying the victim's work equipment or personal property<br>5. Stalking (following the victim in the street, staking out the victim's home, etc.)<br>6. Extortion of money/racketeering through physical intimidation<br>7. Hazardous working conditions (repetitive exposure of the victim, but not of others, to dangerous products; repeated handling of objects that are too heavy, etc.) |
| **C. Sexual violence** | **D. Behavioural violence** |
| 1.Sexual violence without physical contact (making advances, allusions or remarks with sexual connotations, undressing the victim with one's eyes, etc.)<br>2. Sexual violence with physical contact (brushing up against somebody, deliberate physical contact, groping, etc.) | 1.Minor vexations, mean tricks (turning off the heating, hiding things, etc.)<br>2. Offensive gestures (turning one's back, refusing to say hello, refusing to shake hands, shrugs, sighs, heavenward glances, etc.). |

Source: April 2003. http://meta.fgov.be/pdf/pd/frdd43.pdf

Exercises must be followed by careful, clear clear-eyed evaluation and changes to fix whatever weaknesses have been revealed. Reevaluate, rethink, and revise. Policies and practices should not be set in concrete. Personnel, work environments, business conditions, and society all change and evolve .A prevention program must change and evolve with them.

### (B) ELEMENTS OF A WORKPLACE VIOLENCE PREVENTION PROGRAM

As noted by many professionals working on the workplace violence issue, violent acts generally occur in predictable types of worksites or settings, are associated with identifiable risk factors, and may be eliminated or controlled through effective prevention strategies. Programs to prevent workplace violence, just like other workplace hazard prevention programs, often include the following key elements:

**(a)** **Management Commitment:** To ensure an effective program, managers and employees should work together, perhaps through a team approach, to provide the motivation, commitment of resources, and feedback to address workplace violence issues.

**(b)** **Hazard Assessment :** Hazard assessment involves a step-by-step, common sense look at the workplace to find existing or potential hazards for workplace violence. This can include:

- Analyzing and tracking records of violence at work.

- Examining specific violence incidents carefully.
- Surveying employees to gather their ideas and input.
- Periodic inspections of the worksite to identify risk factors that could contribute to injuries related to violence.
- The hazard assessment should examine vulnerability to the four categories of violence previously described - violence by strangers, violence by customers or clients, violence by co-workers, and violence by personal relations.

**(c) Hazard Prevention and Control:** Once existing or potential hazards are identified through the hazard assessment, then hazard prevention and control measures can be identified and implemented.

- These measures may include (in order of general preference):
- Engineering controls, such as locks and alarms.
- Administrative/work practice controls, such as sign-in procedures for visitors and employee assistance programs.
- Personal protective equipment, such as bullet-proof vests for police and security personnel.
- Posting applicable laws, such as those prohibiting assaults and stalking, in visible locations may serve as a prevention measure.

**(d) Training and Instruction:** Training and instruction on workplace violence ensures that all staff are aware of potential hazards and how to protect themselves and their co-workers through established prevention and control measures.

**(e) Reporting Procedure:** A reporting procedure for violent incidents should be developed for all types of violent incidents, whether or not physical injury has occurred. Violence other than physical injury would include, for example, verbal abuse or threats of violence. This procedure should be in writing and should be easily understood by all employees. It should take into account issues of confidentiality. Employees may be reluctant to come forward otherwise and they should not fear reprisal for bringing their concerns to management's attention.

**(f) Record Keeping:** Record keeping is essential to the success of a workplace violence prevention program. Good records help employers determine the severity of the problem, evaluate methods of hazard control, and identify training needs.

**(g) Evaluation:** As part of an overall program covering workplace violence, employers should evaluate their safety and security measures. Management should share the evaluation results with all employees. Any changes in the program should be discussed at regular meetings of the safety committee, with union representatives or other employee groups.

## 6. PERSONAL CONDUCT TO MINIMISE VOILENCE[8]

Follow the suggestions given in table 9, in your daily interactions with people to de-escalate potentially violent situations. If at any time a person's behavior starts to escalate beyond your comfort zone, disengage.

**TABLE 9: PERSONAL CONDUCT TO MINIMIZE VIOLENCE***

| DO | DO NOT |
|---|---|
| • Project calmness, move and speak slowly, quietly and confidently.<br>• Be an empathetic listener: Encourage the person to talk and listen patiently.<br>• Focus your attention on the other person to let them know you are interested in what they have to say<br>• Maintain a relaxed yet attentive posture and position yourself at a right angle rather than directly in front of the other person.<br>• Acknowledge the person's feelings. Indicate that you can see he/she is upset.<br>• Ask for small, specific favors such as asking the person to move to a quieter area.<br>• Establish ground rules if unreasonable behavior persists. Calmly describe the consequences of any violent behavior.<br>• Use delaying tactics which will give the<br>• person time to calm down. For example, offer a drink of water (in a disposable cup).<br>• Be reassuring and point out choices. Break big problems into smaller, more manageable problems.<br>• Accept criticism in a positive way. When a complaint might be true, use statements like "You are probably right" or "It was my fault." If the criticism seems unwarranted, ask clarifying questions.<br>• Ask for his/her recommendations. Repeat back to him/her what you feel he/she is requesting of you.<br>• Arrange yourself so that a visitor cannot block your access to an exit. | • Use styles of communication which generate hostility such as apathy, brush off, coldness, condescension, robotism, going strictly by the rules or giving the runaround.<br>• Reject all of a client's demands from the start.<br>• Pose in challenging stances such as standing directly opposite someone, hands on hips or crossing your arms.<br>• Avoid any physical contact, finger pointing or long periods of fixed eye contact.<br>• Make sudden movements which can be seen as threatening. Notice the tone, volume and rate of your speech.<br>• Challenge, threaten, or dare the individual. Never belittle the person or make him/her feel foolish.<br>• Criticize or act impatiently toward the agitated individual.<br>• Attempt to bargain with a threatening individual.<br>• Try to make the situation seem less serious than it is.<br>• Make false statements or promises you cannot keep.<br>• Try to impart a lot of technical or complicated information when emotions are high. Take sides or agree with distortions. Invade the individual's personal space.<br>• Make sure there is a space of three feet to three feet to six feet between you and the person. |

## 7. CONCLUSION

*We must not fall into the error of regarding violence and stress as inevitable. It is quite possible to combat them effectively, provided that the tripartite partners play the game by establishing effective social dialogue.* ***Ahmed Khalef***, Bureau for Workers' Activities

Workplace violence is a growing concern for employers and employees nationwide. Workplace violence is receiving increased attention thanks to a growing awareness of the toll that violence takes on workers and workplaces. Despite existing research, there remain significant gaps in our knowledge of its causes and potential solutions. Even the extent of violence in the workplace and the number of victims are not well understood.

Workplace violence affects us all. Its burden is borne not only by victims of violence, but by their co-workers, their families, their employers, and by every worker at risk of violent assault - in other words, virtually all of us. Although we know that each year workplace violence results in hundreds of deaths, more than 2 million injuries, and billions of dollars in costs, our understanding of workplace violence is still in its infancy. Much remains to be done in the area of research, particularly in data collection and in intervention. Without basic information on who is most affected and which prevention measures are effective in what settings, we can expect only limited success in addressing this problem. The first steps have been taken. With the help of a broad coalition, a number of key issues have been identified for future research. However, research funding focused on a much broader understanding of the scope and impact of workplace violence is urgently needed to reduce the human and financial burden of this significant public health problem. Psychological violence (be it bullying, mobbing or

emotional violence) between coworkers and between workers and management, can and does happen in just about any profession, but it is more difficult to measure and it is often not reported.

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# BUSINESS PRACTICES IN EMERGING ECONOMIES

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**ABSTRACT**

*Business groups in emerging economies result when entrepreneurs and firms accumulate the capability for repeated industry entry. Such a capability, however, can be maintained as a valuable, rare, and inimitable skill only as long as asymmetric foreign trade and investment conditions prevail. The importance of business groups grew with foreign trade and investment asymmetries. The managerial problems and opportunities surrounding the rise and decline of business groups are discussed, especially in the context of the current turmoil in emerging economies. China and India, the two emerging economic giants, are not only seen as markets with huge potential. With their growing influence, companies all over the world are likely to find themselves adapting their business practices to suit these two giants, instead of making them conform to existing ways of doing things.*

**KEYWORDS**

Emerging Markets, Global Expansion, Globalization Strategies, Innovations, Market Segmentation, Retail Industry, Service Corporations.

## INTRODUCTION

CEOs and top management teams of large corporations, particularly in North America, Europe, and Japan, acknowledge that globalization is the most critical challenge they face today. They are also keenly aware that it has become tougher during the past decade to identify internationalization strategies and to choose which countries to do business with. Still, most companies have stuck to the strategies they've traditionally deployed, which emphasize standardized approaches to new markets while sometimes experimenting with a few local twists.

As a result, many multinational corporations are struggling to develop successful strategies in emerging markets. The problem is that the absence of specialized intermediaries, regulatory systems, and contract-enforcing mechanisms in emerging markets- "institutional voids," hampers the implementation of globalization strategies. Companies in developed countries usually take for granted the critical role that "soft" infrastructure plays in the execution of their business models in their home markets. But that infrastructure is often underdeveloped or absent in emerging markets. There's no dearth of examples. Companies can't find skilled market research firms to inform them reliably about customer preferences so they can tailor products to specific needs and increase people's willingness to pay. Few end-to-end logistics providers, which allow manufacturers to reduce costs, are available to transport raw materials and finished products. Before recruiting employees, corporations have to screen large numbers of candidates themselves because there aren't many search firms that can do the job for them.

Because of all those institutional voids, many multinational companies have fared poorly in developing countries. Evidence suggests that since the1990s, American corporations have performed better in their home environments than they have in foreign countries, especially in emerging markets. Not surprisingly, many CEOs are wary of emerging markets and prefer to invest in developed nations instead. By the end of 2002 - according to the Bureau of Economic Analysis, an agency of the U.S. Department of Commerce American corporations and their affiliate companies had $i.6 trillion worth of assets in the United Kingdom and $514 billion in Canada but only $173 billion in Brazil, Russia, India, and China combined. That's just 2.5% of the $6.9 trillion in investments American companies held by the end of that year. In fact, although U.S. corporations' investments in China doubled between 1992 and 2002, that amount was still less than 1% of all their overseas assets.

Many companies shied away from emerging markets when they should have engaged with them more closely. Since the early 1990s, developing countries have been the fastest-growing market in the world for most products and services. Companies can lower costs by setting up manufacturing facilities and service centers in those areas, where skilled labor and trained managers are relatively inexpensive. Moreover, several developing-country transnational corporations have entered North America and Europe with low-cost strategies (China's Haier Group in household electrical appliances) and novel business models (India's Infosys in information technology services). Western companies that want to develop counter strategies must push deeper into emerging markets, which foster a different genre of innovations than mature markets do.

Western companies don't develop strategies for engaging across their value chains with developing countries, they are unlikely to remain competitive for long. However, despite crumbling tariff barriers, the spread of the Internet and cable television, and the rapidly improving physical infrastructure in these countries, CEOs can't assume they can do business in emerging markets the same way they do in developed nations.

That's because the quality of the market infrastructure varies widely from country to country. In general, advanced economies have large pools of seasoned market intermediaries and effective contract-enforcing mechanisms, whereas less-developed economies have unskilled intermediaries and less-effective legal systems. Because the services provided by intermediaries either aren't available in emerging markets or aren't very sophisticated, corporations can't smoothly transfer the strategies they employ in their home countries to those emerging markets.

During the past ten years, the research has been done and it has been consulted with multinational corporations all over the world. A comparative research project on China and India at Harvard Business School has been presented, and we have all been involved in McKinsey & Company's Global Champions research project.

Successful companies develop strategies for doing business in emerging markets that are different from those they use at home and often find novel ways of implementing them, too.

They also customize their approaches to fit each nation's institutional context. Firms that take the trouble to understand the institutional differences between countries are likely to choose the best markets to enter, select optimal strategies, and make the most out of operating in emerging markets.

## MARKET SEGMENTATION AND COMPETITIVENESS BETWEEN ORGANIZED AND TRADITIONAL RETAILING

Market segmentation is a marketing strategy that involves dividing a broad target market into subsets of consumers who have common needs (and/or common desires) as well as common applications for the relevant goods and services. Depending on the specific characteristics of the product, these subsets may be divided by criteria such as age and gender, or other distinctions, such as location or income. Marketing campaigns can then be designed and implemented to target these specific customer segments, addressing needs or desires that are believed to be common in this segment, using media that is used by the market segment.

While there may be theoretically 'ideal' market segments, in reality every organization engaged in a market will develop different ways of imagining market segments, and create product differentiation strategies to exploit these segments. Successful market segmentation and corresponding product differentiation strategy can give a firm a commercial advantage, due to the more effective match between target customer and product.

Retailing in India is one of the pillars of its economy and accounts for 14 to 15 percent of its GDP. The Indian retail market is estimated to be US$ 450 billion and one of the top five retail markets in the world by economic value. India is one of the fastest growing retail markets in the world, with 1.2 billion people.

India's retailing industry is essentially owner manned small shops. In 2010, larger format convenience stores and supermarkets accounted for about 4 percent of the industry, and these were present only in large urban centers. India's retail and logistics industry employs about 40 million Indians (3.3% of Indian population).

**Until 2011**, Indian central government denied foreign direct investment (FDI) in multi-brand retail, forbidding foreign groups from any ownership in supermarkets, convenience stores or any retail outlets. Even single-brand retail was limited to 51% ownership and a bureaucratic process.

**In November 2011**, India's central government announced retail reforms for both multi-brand stores and single-brand stores. These market reforms paved the way for retail innovation and competition with multi-brand retailers such as Wal-Mart, Carrefour and Tesco, as well single brand majors such as IKEA, Nike, and Apple. The announcement sparked intense activism, both in opposition and in support of the reforms. In December 2011, under pressure from the opposition, Indian government placed the retail reforms on hold till it reaches a consensus.

**In January 2012**, India approved reforms for single-brand stores welcoming anyone in the world to innovate in Indian retail market with 100% ownership, but imposed the requirement that the single brand retailer source 30 percent of its goods from India. Indian government continues the hold on retail reforms for multi-brand stores.

**In June 2012**, IKEA announced it has applied for permission to invest $1.9 billion in India and set up 25 retail stores. Fitch believes that the 30 percent requirement is likely to significantly delay if not prevent most single brand majors from Europe, USA and Japan from opening stores and creating associated jobs in India.

**On 14 September 2012**, the government of India announced the opening of FDI in multi-brand retail, subject to approvals by individual states. This decision has been welcomed by economists and the markets, however has caused protests and an upheaval in India's central government's political coalition structure. On 20 September 2012, the Government of India formally notified the FDI reforms for single and multi brand retail, thereby making it effective under Indian law.

**On 7 December 2012**, the Federal Government of India allowed 51% FDI in multi-brand retail in India. The Feds managed to get the approval of multi-brand retail in the parliament despite heavy uproar from the opposition. Some states will allow foreign supermarkets like Walmart, Tesco and Carrefour to open while other states will not.

## ORGANIZED RETAILING

The recent years have witnessed rapid transformation and vigorous profits in Indian retail stores across various categories. This can be contemplated as a result of the changing attitude of Indian consumers and their overwhelming acceptance to modern retail formats. Asian markets witness a shift in trend from traditional retailing to organized retailing driven by the liberalizations on Foreign Direct Investments. For example, in China there was a drastic structural development after FDI was permitted in retailing. India has entered a stage of positive economic development which requires liberalization of the retail market to gain a significant enhancement.

Domestic consumption market in India is estimated to grow approximately 7 to 8% with retail accounting for 60% of the overall segment. Of this 60%, organized retail is just 5% which is comparatively lesser than other countries with emerging economies. In developed countries organized retailing is the established way of selling consumer products. Despite the low percentage, Indian textile industry has grown noticeably in organized retailing of textile products. The negative phase in exports may have compelled the Indian textile retailers to explore the opportunities in the domestic market substantially causing the outstanding growth in the concerned segment. These indications give a positive notion that organized retailing has arrived in the Indian market and is here to stay. It is expected to grow 25-30 per cent annually and would triple in size from Rs35, 000 crore in 2004-05 to Rs109, 000 crore ($24 billion) by 2010.

India is on the radar screen in the retail world and global retailers and at their wings seeking entry into the Indian retail market. The market is growing at a steady rate of 11-12 percent and accounts for around 10 percent of the country's GDP. The inherent attractiveness of this segment lures retail giants and investments are likely to sky rocket with an estimate of Rs 20-25 billion in the next 2-3 years, and over Rs 200 billion by end of 2010. Indian retail market is considered to be the second largest in the world in terms of growth potential.

A vast majority of India's young population favors branded garments. With the influence of visual media, urban consumer trends have spread across the rural areas also. The shopping spree of the young Indians for clothing, favorable income demographics, increasing population of young people joining the workforce with considerably higher disposable income, has unleashed new possibilities for retail growth even in the rural areas. Thus, 85% of the retail boom which was focused only in the metros has started to infiltrate towards smaller cities and towns. Tier-II cities are already receiving focused attention of retailers and the other smaller towns and even villages are likely to join in the coming years. This is a positive trend, and the contribution of these tier-II cities to total organized retailing sales is expected to grow to 20-25%.

## CHALLENGES FACING THE ORGANIZED RETAIL INDUSTRY

Despite the rosy hopes, some facts have to be considered to positively initiate the retail momentum and ensure its sustained growth. The major constraint of the organized retail market in India is the competition from the un-organized sector. Traditional retailing has been deep rooted in India for the past few centuries and enjoys the benefits of low cost structure, mostly owner-operated, therein resulting in less labor costs and little or no taxes to pay. Consumer familiarity with the traditional formats for generations is the greatest advantage to the un-organized sector. On the contrary, organized sector have big expenses like higher labor costs, social security to employees, bigger premises, and taxes to meet.

Availability and cost of retail space is one major area where Government intervention is necessary. Liberalizing policy guidelines for FDI needs focus as well. Proper training facilities for meeting the increasing requirements of workers in the sector would need the attention of both Government and the industry. Competition for experienced personnel would lead to belligerence between retailers and higher rates of attrition, especially during the phase of accelerated growth of the retail industry. The process of avoiding middlemen and providing increased income to farmers through direct procurement by retail chains need the attention of policy makers. Taking care of supply chain management, mass procurement arrangements and inventory management are areas that need the focus of entrepreneurs.

India is now on the radar of global retailers. Accelerated development of retailing industry in the country and building brand value of domestic products is essential not only for marketing our consumer products more efficiently, but also for the development of our own retailing industry.

## TRADITIONAL RETAILING

Traditional retail refers to these thousands of small, mostly family-owned retail businesses. They are also referred to as the "unorganized" retail sector. The "organized" sector refers to large, modern regional and national retail stores.

A "traditional" store is a brick-and-mortar establishment in which customers browses and purchase merchandise. This kind of store provides the owner an enormous number of options---from what hours to keep to how to arrange displays---and responsibilities.

The Indian retail industry is the world's fifth largest and accounted for 12 percent of GDP (gross domestic product) in 2009. Approximately 97 percent of retail businesses are traditional.

## RETAIL's HOTTEST EMERGING MARKETS

According to the Global management consulting firm A.T. Kearney emerging markets are ripe for retail expansion. Its study ranks the top 30 emerging countries and grades them on many factors, including an assessment of country risk, population size, wealth as well as the country's current retail saturation.

With anemic growth in the U.S. and Europe, retailers realize that global expansion is more important than ever. This has prompted retailers to search the globe for untapped consumer markets.

"While the world's largest developing markets — particularly the BRIC nations of Brazil, Russia, India, and China — still tempt the largest global retailers and show no signs of slowing down as a source of growth, many smaller untapped markets are providing new growth opportunities," A.T. Kearney's report says. The firm's research uncovered growing potential in such countries as Georgia, Oman, Mongolia and Azerbaijan, which all made their debut on the list.

The emergence of these newer markets as well as the Arab Spring uprisings, which hurt the rankings of a number of countries in the Middle East and Northern Africa, led to a shake-up in the rankings. Lebanon, Morocco and Tunisia all slipped. However, several countries in the region remained high on the list and continue to be attractive markets for retailers.

"Given the accelerated growth rates of developing countries compared to the anemic growth in European and North American markets, global retailers must have a strategy for expansion into developing markets," said Michael Moriarty, A.T. Kearney partner and co-leader of the study. "In the past five years, U.S.-based Wal-Mart, France-based Carrefour, U.K.-based Tesco and Germany-based Metro Group saw their revenues in developing countries grow 2.5-times faster than in their home markets."

## INNOVATIVE MARKETING STRATEGIES IN EMERGING ECONOMIES

Over a period of time characterized by growth and change of life styles along with change of economic structures, corporations face lot of challenges to having a sustainable business and maintaining their customers. Service corporations (large, medium, and small businesses) in emerging economies need innovative strategies to do business competitively and to fulfill the basic as well as evolving service-oriented needs of customers. The present text looks at the innovations for services marketing and services management in terms of process innovation, market innovation, relationship innovation, ad-hoc innovations, innovation eco-system, and the like—and not primarily technology-based innovations—in emerging economies. The text aims to bring forth the innovations in various services marketing domains like the 7Ps of services (product, price, place, promotion, physical evidence, process, and people), quality orientations, complaint handling, and the like. Thus, this text is a step to fill a gap to provide innovative marketing strategies for service corporations in emerging economies.

Emerging market economies are low-income, rapid-growth countries using economic liberalization as their primary engine of growth (Hoskisson et al., 2000). Today's large emerging markets such as China, India and Brazil are expected to be the growth markets in the forthcoming decades (Wilson & Purushothaman, 2003). In many emerging markets, there were expectations that local companies would find it difficult to hold their ground because they lacked adequate resources and capabilities (Dawar and Frost, 1999), and were not truly competitive. Lower trade barriers and import tariffs would make them vulnerable to cheap imports. Multinational companies with strong financial and technological resources, and difficult-to-imitate brand equity would dominate the local market.

However, in emerging markets, some local firms have not only belied these fears but either retained leadership positions or gone on to become market leaders. Some have even established strong global positions (Mathews, 2006; Ramamurti and Singh, 2009). While the success of such "local leaders" has been studied from multiple perspectives, one under-researched area has been the role of innovation strategy in their evolution.

An examination of conventional innovation indicators - such as R&D intensity and patenting activity - does not give the impression of a strong innovation strategy in these firms. For example, the Indian company with the largest number of US patents granted to Indian companies over a 14-year period from 1995–2008, Dr. Reddy's Laboratories, averaged just seven US patents a year (Krishnan, 2010:54). However, the fact that these local firms have attained and retained leadership positions in the face of Multinational competition indicates that they are innovating, perhaps in ways that are not captured by traditional innovation measures. We use the natural experiment created by the opening up of the Indian economy over the last two decades to explore what role innovation played in the emergence of these local market leaders by identifying their innovation strategies and linking them to the firms' competitive strategies and growth.

A "momentous and gigantic shift" is taking place today in the global economy because of the growing clout and sudden burst of emerging markets in the world economic scenario. Emerging markets have expanded to several countries in Asia, Latin America, Central and Eastern Europe, the Middle East and also a few countries in Africa. India, China, Brazil and Russia, referred to collectively as BRIC, are among the largest emerging markets in the contemporary global world.

The emerging markets have brought about a metamorphic change in world trade, commerce, markets and the balance of power. Their share of the total merchandise exports is now over 40%. They account for 20% of the world economy and in the coming 25 years it is projected that these will grow up to 50%. Two thirds of the global Forex resource is with them. Over 70 Fortune 500 firms are from the emerging economies. "A new breed of world class companies" from these economies is expanding their global operations fast through mergers and acquisitions.

A new global order emerged recently when a group of 20 nations, comprising both developed and emerging economies including China, Brazil, India etc., replaced the elite club of rich nations called the Group Eight as the global forum for economic policy. The rise of new economic powers, faster integration of the world economy and the growing power of information technology are likely to trigger dramatic changes and transform the global economic landscape in the coming years.

Although with faster economic growth, rising incomes and growing population, emerging markets offer enormous marketing opportunities, several multinationals failed in these markets when they tried to follow the traditional marketing models that work in developed markets. The unique cultural characteristics and tradition and dynamics of consumer behavior in emerging economies demand a different marketing strategy and sales program for achieving success.

## REASONS TO ENTER INTO FOREIGN MARKETS

Civilizations have always prospered by trading with neighboring tribes, cultures, empires and countries. And in the 21st century, doing business in foreign markets remains an attractive and profitable enterprise. Probably the only reason why any individual or company chooses to enter a foreign market is because it believes it will increase profitability, but the reasons for looking abroad for profits can vary.

## NEW PASTURES

A primary reason for entering a foreign market is to expand sales and increase profits. Just like opening a branch in another town, city or state, entering a foreign market is simply part of the relentless quest for business expansion and growth.

Likewise with market saturation: When a company has a highly successful business model and has effectively reached saturation point in its home market, the only path left is outward. That company must look to enter foreign markets or face stagnation. If a successful fast-food franchise has opened in every town in every market in its home country, for example, it can seek to squeeze more market share from each franchise, or it can begin conquering fresh territories farther afield.

## GEOGRAPHICAL VAGARIES

Sometimes entering a foreign market is almost mandatory. For example, oil producers in the Middle East do not need the oil in the quantities they are extracting from the ground, and the only business rationale for the existence of oil production there is to export this oil elsewhere, for example to Europe, America or Asia. Through the vagaries of resource location, varying governmental regulations and demographic differences, it may be favorable to produce a certain commodity in one location, but demand for this product may only exist in foreign markets.

## TESTING

Sometimes a company may enter a foreign market with a view to testing or improving its market performance. While the market isn't immediately profitable, the company may use it to develop and improve its product or service and business strategies. The company may enter a foreign market where its industry is particularly strong and highly competitive with a view to learning from the best, so it is better equipped in the future to enter less competitive and saturated markets.

## CHANGING DEMOGRAPHICS AND CONDITIONS

Over time, a country's demographics change, as do trading conditions. Conditions that made trading favorable in a company's home country may become unfavorable, while conditions might improve in a foreign country. For example, cigarette companies faced with increasingly stringent trading restrictions in their home country may expand into other countries where regulation is not as strict.

## COMPETITIVE EQUITY

Sometimes a company may enter a foreign market simply because a major competitor has. It may feel that failure to do so will "surrender" this new territory to the competitors or give them a competitive edge that may help them to better compete in the home market.

The development of growth strategies requires dealing with the specific reality of the market based on its characteristics and following the steps to influence it.

**FIG. 1**


The specific culture of a market is what defines the context to develop a strategy. This means that growth always implies respecting the habits of a market and presenting innovations that are attractive to them. This means that successful innovations imply “change without changing”. Innovations need to be based on the culture to be accepted. To do so it is necessary to find which segments of a culture are adequate for the proposal that is being made.

Once the segments are found and described it is necessary to confirm that the image of the business has the necessary attribute to work as a catalyst for the value proposition. If the image does not have the value attributes it is necessary to develop the image until it works.

The marketing mix can be defined only after the image has the necessary energy to influence the market. After the marketing mix has proven its functionality the sales technique needs to be defined. This process varies depending on the characteristics of the market. Massive products, functional products and ethical products require structurally different approaches.

This process needs to have pilot tests and recycling processes until the functionality of the strategy has been proven. Shortcuts necessarily drive towards survival strategies.

## SUMMARY & CONCLUSIONS

With the global retail environment emerging from a period of considerable weakness, we believe now is the time to be focusing on the many expansion opportunities found in non-U.S. markets. The economic pressures on weaker players are creating desirable acquisition targets and opportunities.

Current conditions are also setting the stage for forward thinking retailers to be better positioned to realize faster, more profitable growth once the markets sufficiently recover. For a retailer considering international expansion, it is still essential to begin the strategic development process at home. By taking a thorough inventory of the organization’s unique capabilities, resources, and goals, the retailer can create a framework by which market-entry vehicle options can first be evaluated, measured, and prioritized.

Following that evaluation, external market factors and over-arching strategic objectives can be introduced to refine the selection process. Importantly, a successful market-entry strategy must be flexible enough to accommodate changing markets, growth in the company’s skill sets, and economic swings.

Global expansion is evolutionary not revolutionary. Retailers can start by adapting their own value proposition and core strengths in the context of the global expansion (i.e., what do we offer and how do we do it better than the competition?). This understanding can help a retailer gain a new focus and provide a stable and more risk-free platform upon which to base market-entry decisions.

Global expansion will not happen overnight. It requires a significant time and resource commitment to be successful in the long term. Retailers that are taking strategic actions now will be in a stronger position to grow. Those retailers that only think about taking action today will likely be challenged by having to play catch-up to the leaders tomorrow.

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# THE IMPACT OF MONETARY POLICY OVER THE INTEREST RATE: AN EMPIRICAL STUDY

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**ABSTRACT**

*Impact of monetary policy on the interest rate is a study done to find out the relation between the monetary policy changes on interest rate with two Indian public and private sector banks the study helps to find out the relationship between the interest and monetary policy the multiple indicator approach is focusing on the change in the single parameter changes the entire indicators the influence might be direct otherwise indirect. The study aims to find out the relevance of monetary policy review on the quarterly basis and how should be the monetary policy impact the general economy of the country. The cash flow among the public can be controlled by the central bank with a change in the any of the parameter that is the controlling authority of the reserve bank of India. The study help the researcher to find out how the change is happening and why the change become necessary to the economy, sometimes it might be inflation or otherwise deflation, any situation which will have a long run impact over the economy forces central bank to come up with new monetary Policy.*

**KEYWORDS**
Monetary Policy, Interest Rate, Economy.

## 1.1 INTRODUCTION

Monetary policy rests on the relationship between the rates of interest in an economy, that is, the price at which money can be borrowed, and the total supply of money. Monetary policy uses a variety of tools to control one or both of these, to influence outcomes like economic Growth, Inflation, exchange rates with other currencies and unemployment. Where currency is under a monopoly of issuance, or where there is a regulated system of issuing currency through banks which are tied to a central bank, the monetary authority has the ability to alter the money supply and thus influence the interest rate (to achieve policy goals). The beginning of monetary policy as such comes from the late 19th century, where it was used to maintain the gold standard.

## 1.2. RESEARCH METHODOLOGY

### 1.2.1. RESEARCH DESIGN

Research design stands from the advanced planning of the methods to be adopted for collection of relevant data. Moreover it explains about the techniques to be used in the analysis, keeping in view the objective of the research and availability time and money. This research design was selected based on the objective on the study and keeping in mind the time and availability of recourses for the research.

### 1.2.2. TYPE OF RESEARCH

The type of research design used in this project was the descriptive research. Because, it helps to describe the money supply in a country and it elicit the researcher to find out for what reasons the monetary policy is framed and the working of monetary policy, the detailed analysis is only possible through the descriptive research design.

### 1.2.3. SOURCES OF INFORMATION

It is necessary for every research to have both primary data and secondary data, without which the research would be inefficient. The secondary data was collected through, journals, websites and other investment related websites and Tex books available for the banking. In this study the primary data collection is not easy hence the researcher meets various Industrial experts and seeks their advice for doing the project. All these data were helpful in carrying out the analysis.

### 1.2.4. SAMPLING DESIGN

Sample design lays down all the details to be included in a sample. It is a definite plan for obtaining a sample from a given population. The sampling technique used was the convenience sampling (or) deliberate sampling from non probability sampling.

Non probability sampling is that sampling procedure which does not afford any basis for estimating the probability that each item in the population has of being included in the population. Convenience sampling was the method refers to the collection of data from members as population who are conveniently available to provide data. In this research the researcher find the experts who are convenient give data.

## 1.3. ANALYSIS OF THE MONETARY POLICY

RBI raised the repo rate, at which banks borrow from the central bank, by 50 basis points to 7.25 per cent, thereby making funds costlier for banks. In turn, banks will also rise their base rates which will make loans dearer.

Also, the equated monthly installments in case of loans already taken are set to go up.

Speaking to reporters after an interaction with RBI, bankers said the impact of the policy rate rise on the interest rates could be in the range of 50-100 basis points.

"We should remember that the impacts of earlier policy rate hikes have not been fully transmitted yet and today policy rates have been hiked further.

"This will lead to increase in lending rates. I suppose what most banks will do is maintain their margins and a large part of the increase will have to be passed on to the consumers in the form of rate hikes," said Chanda Kochhar managing director and chief executive officer, ICICI Bank RBI had raised policy rates eight times in the financial year 2010-11, to which banks responded with at least three rounds of base rate increases.

IDBI Bank was the first to respond to the rate hike with an increase of 50 basis points in its base rate as well as benchmark prime lending rate.

"In response to an increase in the cost of funds, where deposit rates have been increased and keeping in view the market conditions, IDBI Bank also reviewed its base rate and BPLR and decided to increase both," said the government-run bank in a statement.

IDBI Bank's base rate will be at 10 per cent and BPLR at 14.50 per cent from May 5, 2011. In addition, the bank has also increased interest rates on retail term deposits in some maturities by 25-50 basis points.

## 1.4. IMPACT OF THE POLICY ON THE INTEREST RATES

The estimates of GDP growth, the estimates of inflation, all that was in the price, even though 25 basis point price was already in the price, so overall the market is currently just heaving a sigh of relief. Interest rate hikes, inflation, liquidity squeeze are still problems. So going forward, investments may slow down if this continues for anotherx 3-6 months.

Q4 will still not be great for banks because all of us, even all the banks believe that the rate hikes are not over, there are a couple of more hikes on the anvil. But given the robustness of the banking sector, it would not be a huge area of concern but another couple of rate hikes is there in the price.

Ultimately, we are going to need another 50 basis points from RBI on both the repo and the reverse repo.

RBI has a very difficult task ahead of them here. You have got to get arrest inflationary expectations and that feeding into the broader array of prices in the economy and we can see that this is becoming similar to what we see going on in China where the monetary aggregates are growing much faster than nominal GDP. It suggests that the momentum of inflation and price pressure, demand pressures are not likely to slow down with this current policy setting. So you do need to tighten things up a little bit.

Indian equities' performance depend on how overheated the economy gets. Once you get the rates up to high enough level and the economy begins to slow down and perhaps there will be a good monsoon or good agricultural har, a lot of the soft commodity prices globally will begin to ease.

The increase in repo rates by 25 basis points is in line with market expectations and that's a prudent thing to do because in the current money market rates, especially rates at which CDs and CPs are prevailing, are pointing to much higher policy rates. So no reason for policy rates to be hiked in a hurry because anyway money markets are very tight and liquidity is tight. So in terms of cost of funds, it is already tight and to that extent, base rates and BPLRs have increased. It is still wait and watch mode in terms of any increase in lending rates is concerned.

RBI has announced whatever liquidity measures for this quarter in terms of extension of the facilities, which are currently in place for the rest of the quarter. So considering the anti-inflationary stance, further liquidity easing measures would be too optimistic to expect.

The Monetary policy is reviewed only to regulate the interest rate thus to influence money supply in the country and influence economical growth, inflation and various other economical measures.

The study is focused on the change of interest from a private sector bank to a public sector thus the researcher selected the largest private sector bank and largest Public Sector Bank, ICICI Bank and State Bank of India respectively.

The Study reveals that the distribution of the change in the base rate from the public sector to private sector is the same and the public sector banks can levy the lowest interest rate from the customer but that is not applicable for the Private sector Banks.

The private sector is having advantage of charging a little bit more interest rates compared to the public sector banks.

| Banks | Previous Interest rate | Current Interest rate | Variance of interest rate |
|---|---|---|---|
| ICICI BANK | 7.50 | 8.0 | 0.50 |
| State Bank Of India | 7.25 | 7.75 | 0.50 |

| Parameters | Previous rate | Current rate | Variance in rate |
|---|---|---|---|
| Repo rate | 6.75 | 7.25 | .50 |
| Reverse repo rate | 5.50 | 6.25 | .75 |
| Marginal Standing facility rate | 7.75 | 8.25 | .50 |
| Bank rate | 6.0 | 6.0 | - |
| Cash reserve ratio | 6.0 | 6.0 | - |

## 1.5. INTERPRETATION

From the above table it is clearly understood that the proportional change in the repo rate and Marginal standing facility rate changes the proportional change in the interest rate. Thus the research reveals the relevance of the change in the interest rate will bring a same change in the interest rate and the main factor to increase this rate to lower the inflation.

## 1.6. INFLUENCE OVER ECONOMY

The economy is influenced by the interest rate changes the change in the interest rate brings about the supply of money changes and it regulate the lending power of the banks and thus the circulation of money among the public is regulated by the reserve bank and it thus influence the economy and money supply.

The reversal might increase the money supply and it increase the buying power of the public and it increases the interest rate and GDP, But sometimes the market value of the stock market is influenced by the favourable and unfavorable monetary policy.

Last monetary had such an impact over the banking and secondary market. The reduction of the inflation and wholesale price index was the motive of the monetary policy. The economy is controlled and regulated using the monetary policy by the reserve bank of India.

## 1.7. CONCLUSION

The Reserve Bank of India is having the highest impact over the economy to regulate and reduce the economical impact over the economy. Public sector and Private sector banks are mainly framing the interest rate because of the monetary policy and its not just because of their own interest, there are lots of measures to reduce the interest rate and lending power of the banks,

Reserve Bank of India is acting as a Police to control the money flow in the country the UID and biometric tracking devices and online fund transfer details giving the RBI much more details to track the financial affairs of the public which give it more power to control over the economy and money flow.

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# FDI POLICY AND RETAILING IN INDIA: PROS AND CONS

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**ABSTRACT**

*Retailing in India is one of the pillars of its economy and accounts for 14 to 15 percent of its GDP. Indian retail industry is one of the sunrise sectors with huge growth potential. According to the Investment Commission of India, the retail sector is expected to grow almost three times its current levels to $660 billion by 2015. However, in spite of the recent developments in retailing and its immense contribution to the economy, retailing continues to be the least evolved industries and the growth of organised retailing in India has been much slower as compared to rest of the world. Undoubtedly, this dismal situation of the retail sector, despite the on-going wave of incessant liberalization and globalization stems from the absence of an FDI encouraging policy in the Indian retail sector. In this context, the present paper attempts to analyse the strategic issues concerning the influx of foreign direct investment in the Indian retail industry. Moreover, with the latest move of the government to allow FDI in the multiband retailing sector.*

**KEYWORDS**
Retail, FDI, Single Brand , Multi Brand.

## INTRODUCTION

Retailing in India is one of the pillars of its economy and accounts for 14 to 15% of its GDP. The Indian retail market is estimated to be US$ 450 billion and one of the top five retail markets in the world by economic value. India is one of the fastest growing retail markets in the world, with 1.2 billion people. India's retailing industry is essentially owner manned small shops. In 2010, larger format convenience stores and supermarkets accounted for about 4% of the industry, and these were present only in large urban centers. India's retail and logistics industry employs about 40 million Indians (3.3% of Indian population). Until 2011, Indian central government denied foreign direct investment (FDI) in multi brand retail, forbidding foreign groups from any ownership in supermarkets, convenience stores or any retail outlets. Even single-brand retail was limited to 51% ownership and a bureaucratic process.

In November 2011, India's central government announced retail reforms for both multi-brand stores and single-brand stores. These market reforms paved the way for retail innovation and competition with multi-brand retailers such as Walmart, Carrefour and Tesco, as well single brand majors such as IKEA, Nike, and Apple.

The Retail Industry is the sector of economy which is consisted of individuals, stores, commercial complexes, agencies, companies, and organizations, etc., involved in the business of selling or merchandizing diverse finished products or goods to the end-user consumers directly and indirectly. Goods and products of the retail industry or sector, are the finished final objects/products of all sectors of commerce and economy of a country.

The announcement sparked intense activism, both in opposition and in support of the reforms. In December 2011, under pressure from the opposition, Indian government placed the retail reforms on hold till it reaches a consensus. In January 2012, India approved reforms for single-brand stores welcoming anyone in the world to innovate in Indian retail market with 100% ownership, but imposed the requirement that the single brand retailer source 30% of its goods from India. Indian government continues the hold on retail reforms for multi-brand stores. IKEA announced in January that it is putting on hold its plan to open stores in India because of the 30% requirement. Fitch believes that the 30% requirement is likely to significantly delay if not prevent most single brand majors from Europe, USA and Japan from opening stores and creating associated jobs in India.

## ENTRY OPTIONS FOR FOREIGN PLAYERS PRIOR TO FDI POLICY

The FDI in India's retail business can be made through any of the following routes:

**1. FRANCHISE AGREEMENTS**

It is an easiest track to come in the Indian market. In franchising and commission agents' services, FDI (unless otherwise prohibited) is allowed with the approval of the Reserve Bank of India (RBI) under the Foreign Exchange Management Act. This is a most usual mode for entrance of quick food bondage opposite a world. Apart from quick food bondage identical to Pizza Hut, players such as Lacoste, Mango, Nike as good as Marks as good as Spencer, have entered Indian marketplace by this route.

**2. CASH AND CARRY WHOLESALE TRADING**

100% FDI is allowed in wholesale trading which involves building of a large distribution infrastructure to assist local manufacturers.The wholesaler deals only with smaller retailers and not Consumers. Metro AG of Germany was the first significant global player to enter India through this route.

**3. STRATEGIC LICENSING AGREEMENTS**

Some foreign brands give exclusive licenses and distribution rights to Indian companies. Through these rights, Indian companies can either sell it through their own stores, or enter into shop-in-shop arrangements or distribute the brands to franchisees. Mango, the Spanish apparel brand has entered India through this route with an agreement with Piramyd, Mumbai, SPAR entered into a similar agreement with Radhakrishna Foodlands Pvt. Ltd

**4. MANUFACTURING AND WHOLLY OWNED SUBSIDIARIES**

The foreign brands such as Nike, Reebok, Adidas, etc. that have wholly-owned subsidiaries in manufacturing are treated as Indian companies and are, therefore, allowed to do retail. These companies have been authorised to sell products to Indian consumers by franchising, internal distributors, existent Indian retailers, own outlets, etc. For instance, Nike entered through an exclusive licensing agreement with Sierra Enterprises but now has a wholly owned subsidiary, Nike India Private Limited.

## FDI POLICY WITH REGARD TO RETAILING IN INDIA

It will be prudent to look into Press Note 4 of 2006 issued by DIPP and consolidated FDI Policy issued in October 2010 which provide the sector specific guidelines for FDI with regard to the conduct of trading activities.

a) FDI up to 100% for cash and carry wholesale trading and export trading allowed under the automatic route.
b) FDI up to 51 % with prior Government approval (i.e. FIPB) for retail trade of Single Brand' products, subject to Press Note 3 (2006 Series).
c) FDI is not permitted in Multi Brand Retailing in India.

## PROSPECTED CHANGES IN FDI POLICY FOR RETAIL SECTOR IN INDIA

The government has announced following prospective reforms in Indian Retail Sector

1. India will allow FDI of up to 51% in —multi-brand sector.
2. Single brand retailers such as Apple and Ikea, can own 100% of their Indian stores, up from previous cap of 51%.

3. The retailers (both single and multi-brand) will have to source at least 30% of their goods from small and medium sized Indian suppliers.
4. All retail stores can open up their operations in population having over 1million.Out of approximately 7935 towns and cities in India, 55 suffice such Criteria
5. Multi-brand retailers must bring minimum investment of US$ 100 million. Half of this must be invested in back-end infrastructure facilities such as cold chains, refrigeration, transportation, packaging etc. to reduce post-harvest losses and provide remunerative prices to farmers.
6. The opening of retail competition (policy) will be within parameters of state laws and regulations.

## SINGLE AND MULTI-BRAND RETAILING

### FDI IN SINGLE-BRAND RETAIL

The Government has not categorically defined the meaning of —Single Brand anywhere neither in any of its circulars nor any notifications.

In single-brand retail, FDI up to 51 per cent is allowed, subject to Foreign Investment Promotion Board (FIPB) approval and subject to the conditions mentioned in Press Note 3 that (a) only single brand products would be sold (i.e., retail of goods of multi-brand even if produced by the same manufacturer would not be allowed), (b) products should be sold under the same brand internationally, (c) single-brand product retail would only cover products which are branded during manufacturing and (d) any addition to product categories to be sold under single-brand would require fresh approval from the government. While the phrase single brand' has not been defined, it implies that foreign companies would be allowed to sell goods sold internationally under a single brand', viz., Reebok, Nokia, and Adidas. Retailing of goods of multiple brands, even if such products were produced by the same manufacturer, would not be allowed. Going a step further, we examine the concept of single brand' and the associated conditions:

FDI in Single brand' retail implies that a retail store with foreign investment can only sell one brand. For example, if Adidas were to obtain permission to retail its flagship brand in India, those retail outlets could only sell products under the Adidas brand and not the Reebok brand, for which separate permission is required. If granted permission, Adidas could sell products under the Reebok brand in separate outlets.

### FDI IN MULTI-BRAND RETAIL

The government has also not defined the term Multi Brand. FDI in Multi Brand retail implies that a retail store with a foreign investment can sell multiple brands under one roof.

In July 2010, Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce circulated a discussion paper on allowing FDI in multi-brand retail. The paper doesn't suggest any upper limit on FDI in multi-brand retail. If implemented, it would open the doors for global retail giants to enter and establish their footprints on the retail landscape of India. Opening up FDI in multi-brand retail will mean that global retailers including Wal-Mart, Carrefour and Tesco can open stores offering a range of household items and grocery directly to consumers in the same way as the ubiquitous 'kirana' store.

## GROWTH AND EVOLUTION OF INDIAN RETAIL SECTOR

The Indian Retail Industry is the 5th largest retail destination and the second most attractive market for investment in the globe after Vietnam as reported by AT Kearney's seventh annual Globe Retail Development Index (GRDI), in 2008.The growing popularity of Indian Retail sector has resulted in growing awareness of quality products and brands. As a whole Indian retail has made life convenient, easy, quick and affordable. Indian retail sector specially organized retail is growing rapidly, with customer spending growing in unprecedented manner. It is undergoing metamorphosis. Till 1980 retail continued in the form of kiranas that is unorganized retailing. Later in 1990s branded retail outlet like Food World, Nilgiris and local retail outlets like Apna Bazaar came into existence. Now big players like Reliance, Tata's, Bharti, ITC and other reputed companies have entered into organized retail business. The multinationals with 51% opening of FDI in single brand retail has led to direct entrance of companies like Nike, Reebok, Metro etc. or through joint ventures like Wal-mart with Bharti, Tata with Tesco etc.

## EVOLUTION OF RETAIL SECTOR

Evolution of retail sector can be seen in the share of organized sector in 2007 was 7.5% of the total retail market. Organized retail business in India is very small but has tremendous scope. The total in 2005 stood at $225 billion, accounting for about 11% of GDP. In this total market, the organized retail accounts for only $8 billion of total revenue. According to A T Kearney, the organized retailing is expected to be more than $23 billion revenue by 2010. The retail industry in India is currently growing at a great pace and is expected to go up to US$ 833 billion by the year 2013. It is further expected to reach US$ 1.3 trillion by the year2018 at a CAGR of 10%. As the country has got a high growth rate, the consumer spending has also gone up and is also expected to go up further in the future. In the last four years, the consumer spending in India climbed up to 75%. As a result, the Indian retail industry is expected to grow further in the future days. By the year 2013, the organized sector is also expected to grow at a CAGR of 40%. The key factors that drive growth in retail industry are young demographic profile, increasing consumer aspirations, growing middle class incomes and improving demand from rural markets. Also, rising incomes and improvements in infrastructure are enlarging consumer markets and accelerating the convergence of consumer tastes. Liberalization of the Indian economy, increase in spending per capita income and the advent of dual income families also help in the growth of retail sector. Moreover, consumer preference for shopping in new environs, availability of quality real estate and mall management practices and a shift in consumer demand to foreign brands like McDonalds, Sony, Panasonic, etc. also contributes to the spiral of growth in this sector. Furthermore, the Internet revolution is making the Indian consumer more accessible to the growing influences of domestic and foreign retail chains.

One report estimates the 2011 Indian retail market as generating sales of about $470 billion a year, of which a miniscule $27 billion comes from organized retail such as supermarkets, chain stores with centralized operations and shops in malls. The opening of retail industry to free market competition, some claim will enable rapid growth in retail sector of Indian economy. Others believe the growth of Indian retail industry will take time, with organized retail possibly needing a decade to grow to a 14 25% share.[17] A 25% market share, given the expected growth of Indian retail industry through 2021, is estimated to be over $250 billion a year: a revenue equal to the 2009 revenue share from Japan for the world's 250 largest retailers.,

The Economist forecasts that Indian retail will nearly double in economic value, expanding by about $400 billion by 2020.

The projected increase alone is equivalent to the current retail market size of France. In 2011, food accounted for 70% of Indian retail, but was under-represented by organized retail. A.T. Kearney estimates India's organized retail had a 31% share in clothing and apparel, while the home supplies retail was growing between 20% to 30% per year. These data correspond to retail prospects prior to November announcement of the retail reform.

## CHALLENGES OF RETAILING IN INDIA

In India the retailing industry has a long way to go and to become a truly flourishing industry, retailing needs to cross various hurdles. The first challenge facing the organized retail sector is the competition from unorganized sector. Needless to say, the Indian retail sector is overwhelmingly swarmed by the unorganized retailing with the dominance of small and medium enterprises in contradiction to the presence of few giant corporate retailing outlets.

The trading sector is also highly fragmented**,** with a large number of intermediaries who operate at a strictly local level and there is no barrier to entry', given the structure and scale of these operations (Singhal 1999).The tax structure in India favors small retail business. Organized retail sector has to pay huge taxes, which is negligible for small retail business. Thus, the cost of business operations is very high in India. Developed supply chain and integrated IT management is absent in retail sector. This lack of adequate infrastructure facilities, lack of trained work force and low skill level for retailing management further makes the sector quite complex. Also, the intrinsic complexity of retailing- rapid price changes, threat of product obsolescence, low margins, high cost of real estate and dissimilarity in consumer groups are the other challenges that the retail sector in India is facing. The status of the retail industry will depend mostly on external factors like Government regulations and policies and real estate prices, besides the activities of retailers and demands of the customers also show impact on retail industry. Even though economy across the globe is slowly emerging from recession, tough times lie ahead for the retail industry as consumer spending

still has not seen a consistent increase. In fact, consumer spending could contract further as banks have been overcautious in lending. Thus, retailers are witnessing an uphill task in terms of wooing consumers, despite offering big discounts. Additionally, organised retailers have been facing a difficult time in attracting customers from traditional kirana stores, especially in the food and grocery segment.

While in some sectors the restrictions imposed by the government are comprehensible; the restrictions imposed in few others, including the retail sector, are utterly baseless and are acting as shackles in the progressive development of that particular sector and eventually the overall development of the Indian Inc. The scenario is kind of depressing and unappealing, since despite the on-going wave of incessant liberalization and globalization, the Indian retail sector is still aloof from progressive and ostentatious development. This dismal situation of the retail sector undoubtedly stems from the absence of an FDI encouraging policy in the Indian retail sector.

## FDI ENCOURAGING POLICY CAN REMOVE THE PRESENT LIMITATIONS IN INDIAN SYSTEM

1. **Infrastructure:** There has been a lack of investment in the logistics of the retail chain, leading to an inefficient market mechanism. Though India is the second largest producer of fruits and vegetables (about 180 million MT), it has a very limited integrated cold-chain infrastructure, with only 5386 stand-alone cold storages, having a total capacity of 23.6 million MT. , 80% of this is used only for potatoes. The chain is highly fragmented and hence, perishable horticultural commodities find it difficult to link to distant markets, including overseas markets, round the year. Storage infrastructure is necessary for carrying over the agricultural produce from production periods to the rest of the year and to prevent distress sales. Lack of adequate storage facilities cause heavy losses to farmers in terms of wastage in quality and quantity of produce in general. Though FDI is permitted in cold-chain to the extent of 100%, through the automatic route, in the absence of FDI in retailing; FDI flow to the sector has not been significant.
2. **Intermediaries dominate** the value chain Intermediaries often flout mandi norms and their pricing lacks transparency. Wholesale regulated markets, governed by State APMC Acts, have developed a monopolistic and non-transparent character. According to some reports, Indian farmers realize only 1/3rd of the total price paid by the final consumer, as against 2/3rd by farmers in nations with a higher share of organized retail.
3. **Improper Public Distribution System ("PDS")** There is a big question mark on the efficacy of the public procurement and PDS setup and the bill on food subsidies is rising. In spite of such heavy subsidies, overall food based inflation has been a matter of great concern. The absence of a 'farm-tofork' retail supply system has led to the ultimate customers paying a premium for shortages and a charge for wastages.
4. **No Global Reach** The Micro Small & Medium Enterprises (MSME) sector has also suffered due to lack of branding and lack of avenues to reach out to the vast world markets. While India has continued to provide emphasis on the development of MSME sector, the share of unorganised sector in overall manufacturing has declined from34.5% in 1999-2000 to 30.3% in 2007-08. This has largely been due to the inability of this sector to access latest technology and improve its marketing interface.

## MERITS OF FDI IN RETAIL SECTOR

- Organized retail will need workers. Walmart employs 1.4 million people in United States alone. With United States population of about 300 million, and India's population of about 1200 million, if Walmart-like retail companies were to expand in India as much as their presence in the United States, and the staffing level in Indian stores kept at the same level as in the United
- States stores, Walmart alone would employ 5.6 million Indian citizens. In addition, millions of additional jobs will be created during the building of and the maintenance of retail stores, roads, cold storage centers, software industry, electronic cash registers and other retail supporting organizations. Instead of job losses, retail reforms are likely to be massive boost to Indian job availability.
- India needs trillions of dollars to build its infrastructure, hospitals, housing and schools for its growing population. Indian economy is small, with limited surplus capital. Indian government is already operating on budget deficits. It is simply not possible for Indian investors or Indian government to fund this expansion, job creation and growth at the rate India needs. Global investment capital through FDI is necessary. Beyond capital, Indian retail industry needs
- knowledge and global integration. Global retail leaders, some of which are partly owned by people of Indian origin, can bring this knowledge. Global integration can potentially open export markets for Indian farmers and producers. Walmart, for example, expects to source and export some $1 billion worth of goods from India every year, since it came into Indian wholesale retail market.
- Walmart, Carrefour, Tesco, Target, Metro, Coop are some of over 350 global retail companies with annual sales over $1 billion. These retail companies have operated for over 30 years in numerous countries. They have not become monopolies. Competition between Walmart-like retailers has kept food prices in check. Canada credits their very low inflation rates to Walmarteffect. Anti-trust laws and state regulations, such as those in Indian legal code, have prevented food monopolies from forming anywhere in the world. Price inflation in these countries has been 5 to 10 times lower than price inflation in India. The current consumer price inflation in Europe and the United States is less than 2%, compared to India's double digit inflation.
- Comparing 21st century to 18th century is inappropriate. Conditions today are not same as in the 18th century. India wasn't a democracy then, it is today. Global awareness and news media were not the same in 18th century as today. Consider China today. It has over 57 million square feet of retail space owned by foreigners, employing millions of Chinese citizens. Yet, China hasn't become a vassal of imperialists. It enjoys respect from all global powers. Other Asian countries like Malaysia, Taiwan, Thailand and Indonesia see foreign retailers as catalysts of new technology and price reduction; and they have benefitted immensely by welcoming FDI in retail. India too will benefit by integrating with the world, rather than isolating itself.
- With 51% FDI limit in multi-brand retailers, nearly half of any profits will remain in India. Any profits will be subject to taxes, and such taxes will reduce Indian government budget deficit
- States have a right to say no to retail FDI within their jurisdiction. States have the right to add restrictions to the retail policy announced before they implement them. Thus, they can place limits on number, market share, style, diversity, homogeneity and other factors to suit their cultural preferences.
- Finally, in future, states can always introduce regulations and India can change the law to ensure the benefits of retail reforms reach the poorest and weakest segments of Indian society, free and fair retail competition does indeed lead to sharply lower inflation than current levels, small farmers get better prices, jobs created by organized retail pay well, and healthier food
- becomes available to more households.
- Inbuilt inefficiencies and wastage in distribution and storage account for why, according to some estimates, as much as 40% of food production doesn't reach consumers. Fifty million children in India are malnourished.
- Food often rots at farms, in transit, or in antiquated state-run warehouses. Costconscious organized retail companies will avoid waste and loss, making food available to the weakest and poorest segment of Indian society, while increasing the income of small farmers. Walmart, for example, since its arrival in Indian wholesale retail market, has successfully introduced "Direct Farm Project" at Haider Nagar near Malerkotla in Punjab, where 110 farmers have been connected with Bharti Walmart for sourcing fresh vegetables directly, thereby reducing waste and bringing fresher produce to Indian consumers.
- Indian small shops employ workers without proper contracts, making them work long hours. Many unorganized small shops depend on child labour. A well-regulated retail sector will help curtail some of these abuses.
- The claim that there is no consensus is without merit. Retail reforms discussions are not new. Comments from a wide cross-section of Indian society including farmers' associations, industry bodies, consumer forums, academics, traders' associations, investors, economists were analysed in depth before the matter was discussed by the Committee of Secretaries. By early August 2011, the consensus from various segments of Indian society was overwhelming in favor of retail reforms.

## ADVERSE EFFECT OF FDI ON RETAIL SECTOR

- Independent stores will close, leading to massive job losses. Walmart employs very few people in the United States. If allowed to expand in India as much as Walmart has expanded in the United States, few thousand jobs may be created but millions will be lost.
- Walmart will lower prices to dump goods, get competition out of the way, become a monopoly, and then raise prices. We have seen this in the case of the soft drinks industry. Pepsi and Coke came in and wiped out all the domestic brands.
- India doesn't need foreign retailers, since home grown companies and traditional markets may be able to do the job.
- Work will be done by Indians, profits will go to foreigners.
- Remember East India Company. It entered India as a trader and then took over politically.
- There will be sterile homogeneity and Indian cities will look like cities anywhere else.
- The government hasn't built consensus.

## CONCLUSION

Retailing in India is one of the pillars of its economy and accounts for 14 to 15 percent of its GDP The Indian retail market is estimated to be US$450 billion and one of the top five retail markets in the world by economic value. India is one of the fastest growing retail market in the world, with 1.2 billion people. Small retailers will not be crowded out, but would strengthen market positions by turning innovative/contemporary. Growing economy and increasing purchasing power would more than compensate for the loss of market share of the unorganised sector retailers. There will be initial and desirable displacement of middlemen involved in the supply chain of farm produce, but they are likely to be absorbed by increase in the food processing sector induced by organised retailing. Innovative government measures could further mitigate adverse effects on small retailers and traders Consumers would certainly gain from enhanced competition, better quality, assured weights and cash memos. The government revenues will rise on account of larger business as well as recorded sales. The Competition Commission of India would need to play a proactive role

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# MICROFINANCE: A SUSTAINABLE TOOL FOR ECONOMIC GROWTH

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**ABSTRACT**

*India is the second most populous country in the world, whose rapidly developing economy, is widening the gap between rich and poor. Microfinance allows the poor to get the loans they need to save, invest, and create a sustainable lifestyle of financial independence and growth. These loans are used productively by the poor to create their own businesses, grow their assets, and get out of poverty once and for all. Microfinance is gathering momentum to become a significant force in India. In the last two decades, substantial progress has been made in developing techniques to deliver financial services to the poor on a sustainable basis. These loans are aimed at empowering the impoverished the people to start their own businesses and to grow their money so that they can achieve long-term financial independence. Microfinance is one of the effective ways for poverty alleviation, economic growth and development in emerging economies. This paper will focus the importance, challenges, obstacles, opportunities and outcome of microfinance in Indian context.*

**KEYWORDS**
Microfinance, Sustainable, Challenges, Obstacles, Opportunities.

## INTRODUCTION

Microfinance is one of the most visible innovations in anti-poverty policy in the last half-century, and in three decades it has grown dramatically. The most important benefit of microfinance in India is that it helps long-term financial independence in these poverty-stricken areas. Microfinance help sustained impact by educating recipients on how to create their own businesses and how to properly manage and grow their money. Microfinance in India and several other countries received a major boost. Undoubtedly it has been successful in bringing formal financial services to the poor. Many believe it has done much more and, by putting money into the hands of poor families and it has the potential to increase investments in health and education and empower women. Microfinance institutions have created a massive social infrastructure uniquely positioned to reach millions of clients on a regular basis. Microfinance social infrastructure is no more a financing channel but it has also emerged as a strong distribution channel with numerous credit products, repayable over a longer period of time, and solar lamps, fuel-efficient stoves, mobile phones and mobile banking devices are some of them. In the last two years, many companies are manufacturing solar products with microfinance distribution channel to sell their products. This paper will discusses microfinance a sustainable tool for economic growth in terms of its importance, challenges, obstacles, opportunities and outcome.

## STATEMENT OF THE PROBLEM

Most of the world's poor lack access to basic financial services that would help them manage their assets and generate income. To overcome poverty, they need to be able to borrow, save and invest, and to protect their families against adversity. With little income or collateral, poor people are seldom able to obtain loans from banks and other formal financial institutions. Microfinance is one way of fighting poverty in rural areas, where most of the world's poorest people live. It puts credit, savings, insurance and other basic financial services within the reach of poor people. Through microfinance institutions such as credit unions, financial non-governmental organizations and even commercial banks, poor people can obtain small loans, receive money from relatives working abroad and safeguard their savings.

## OBJECTIVES OF THE STUDY

1. To study the importance of microfinance in Indian economy
2. To analyze the challenges of microfinance
3. To identify the obstacles of microfinance
4. To know the opportunities with respect to microfinance
5. To realize the outcome of microfinance in Indian economy

## METHODOLOGY

This study is mainly based on secondary data only. Secondary data is collected from various sources like journals, books, magazines and reports.

## NEED FOR THE STUDY

India is the second most populous country in the world, whose rapidly developing economy is widening the gap between rich and poor. Although the amounts involved may be small the loans, savings and insurance options that microfinance offers can give millions of rural men and women an opportunity to find their own solutions. Micro finance has become very popular in the developing world and has shown to empower poor people to get out of their current economic situation and improve their status. There is an urgent need for microfinance institutions to improve the ability of poorest families and to satisfy their growing demand for a range of financial services and also safe and flexible savings services that poor people need and value.

## SIGNIFICANCE OF THE STUDY

Microfinance is usually understood to entail the provision of financial services to micro- entrepreneurs and small businesses, which lack access to banking and related services due to the high transaction costs associated with serving these client categories. The two main mechanisms for the delivery of financial services to such clients are relationship-based banking for individual entrepreneurs and small businesses; and group-based models, where several entrepreneurs come together to apply for loans and other services as a group. Many of those who promote microfinance generally believe that such access will help poor people out of poverty. For others, microfinance is a way to promote economic development, employment and growth through the support of micro-entrepreneurs and small businesses. Microfinance is a broad category of services, which includes microcredit.

## ROLE AND ACTIVITIES OF MICROFINANCE

1. **Microcredit** It is a small amount of money loaned to a client by a bank or other institution. Microcredit can be offered, often without collateral, to an individual or through group lending.
2. **Micro savings** These are deposit services that allow one to save small amounts of money for future use. Often without minimum balance requirements, these savings accounts allow households to save in order to meet unexpected expenses and plan for future expenses.

3. **Micro insurance** It is a system by which people, businesses and other organizations make a payment to share risk. Access to insurance enables entrepreneurs to concentrate more on developing their businesses while mitigating other risks affecting property, health or the ability to work.
4. **Remittances** These are transfer of funds from people in one place to people in another, usually across borders to family and friends. Compared with other sources of capital that can fluctuate depending on the political or economic climate, remittances are a relatively steady source of funds

## IMPORTANCE OF MICROFINANCE

Microfinance is a vital tool for many important portfolios like SHG and other type of Small scale organization. The self-help group (SHG) avail lot of support from micro finance and they are using it for various purposes. SHG-based microfinance nurtured and aided by NGOs, have become an important alternative to traditional lending in terms of reaching the poor without incurring a fortune in operating and monitoring costs. The government and NABARD have recognized this and have emphasized the SHG approach and working along with NGOs in its initiatives. Micro finance in India is still presently too small to create a massive impact in poverty alleviation, nurtures the skill and opportunity development of the poor and it holds the promise to alter the socioeconomic face of the India's poor. One such form of microfinance has been the development of the self-help movement. Based on the concept of "self-help," small groups of women have formed into groups of ten to twenty and operate a savings-first business model whereby the member's savings are used to fund loans. The results from these self-help groups (SHGs) are promising and have become a focus of intense examination as it is proving to be an effective method of poverty reduction.
Nevertheless micro finance is a sustainable tool which is helping to the community in various dimensions to the important portfolios. Microfinance grassroots initiatives are offering thousands of marginalized groups the training, financial resources, and job opportunities needed to rise out of poverty. Initiate and maintain of self-help groups that offer financial guidance and credit, promote savings, free members from unfair debt burdens, and create collective action opportunities that minimize exploitation of women and other marginalized groups.

## FINANCIAL NEEDS OF POOR PEOPLE

In developing economies and particularly in the rural areas, many activities that would be classified according to the needs of the rural people. There are different circumstances often arise in their lives in which they need money or the things money can buy.

1. **Lifecycle Needs** such as weddings, childbirth, education, homebuilding, widowhood, old age.
2. **Personal Emergencies** such as sickness, injury, unemployment, harassment or death.
3. **Disasters** such as fires, floods, cyclones and man-made events like war or bulldozing of dwellings.
4. **Investment Opportunities** expanding a business, buying land or equipment, improving housing, securing a job (which often requires paying a large bribe), etc.

Poor people find creative and often collaborative ways to meet these needs, primarily through creating and exchanging different forms of non-cash value. Common substitutes for cash vary from country to country but typically include livestock, grains, jewellery and precious metals. The microfinance industry's objective is to satisfy the unmet demand on a much larger scale and to play a role in reducing poverty. While much progress has been made in developing a viable, commercial microfinance sector in the last few decades, several issues remain that need to be addressed before the industry will be able to satisfy massive worldwide demand.

## CHALLENGES OF MICROFINANCE

In most countries, banks and moneylenders have not often favored the poor when it comes to lending money in times of need. Microfinance refers to the provision of financial services to poor or low-income clients, including consumers and the self-employed. More broadly, it refers to a movement that envisions "a world in which as many poor and near-poor households as possible have permanent access to an appropriate range of high quality financial services, including not just credit but also savings, insurance, and fund transfers." Those who promote microfinance generally believe that such access will help poor people out of poverty. The new financial systems approach pragmatically acknowledges the richness of centuries of microfinance history and the immense diversity of institutions serving poor people in developing world today. It is also rooted in an increasing awareness of diversity of the financial service needs of the world's poorest people, and the diverse settings in which they live and work.
The challenges to building a sound commercial microfinance industry include:

- Inappropriate donor subsidies
- Poor regulation and supervision of deposit-taking MFIs
- Few MFIs that meet the needs for savings, remittances or insurance
- Limited management capacity in MFIs
- Institutional inefficiencies
- Need for more dissemination and adoption of rural, agricultural microfinance methodologies

## OBSTACLES OF MICROFINANCE

Despite good intentions, microfinance still has several hurdles to face:

- Perceived high risk of lending to the poor (the loan may be misused easily)
- Technology-related hurdles, such as the high costs involved in small loan transactions for microfinance providers
- The poor's inability to offer marketable collateral for loans to MFIs
- Difficulty in measuring the social performance of MFIs
- Lack of customized solutions/ microfinance models for the poor
- Inappropriate targeting of poor households by microfinance programs
- Lack of microfinance training for MFIs
- Poor distribution system of MFIs, i.e. a need to spread out loan facilities into rural areas
- Lack of information about microfinance investment opportunities
- Poor institutional viability of microfinance ventures
- Dual mission of MFIs to be financially sustainable as well as development oriented

## OPPORTUNITIES OF MICROFINANCE

Offer skills training and capacity-building workshops to increase economic independence, empowerment, and local employability of women and other underserved groups. The entrepreneurial skills training programme should be arranged in required areas such as conducting the feasibility studies, perform cost/benefit analysis, write business plans, acquire financing, and initiate start-ups, marketing, distribution, pricing, and management training to local microenterprises. Moreover the research and analyze to be done in numerous topics and these must bring about the local economic conditions, migration patterns, obstructions to economic growth, and efficacy of microfinance programs and further the expand and increase the exposure of microfinance programs to outlying the villages.

## OUTCOME OF MICROFINANCE

Micro finance plays an important role in economic growth and it should be done more to encourage similar models in the economic system. The microfinance sector across the globe, over the past few years, has shown tremendous growth in terms of its efficiency and outreach which was made possible due to various experiments done by diverse stakeholders in different parts of the world. The various successful models/experiments need to be widely disseminated amongst all the stakeholders in order to provide suitable options, particularly to those practitioners who are concentrating in regions where microfinance has not yet penetrated. The debate over how the microfinance sector will react to the credit crunch and global economic crisis, as well as microcredit's importance in stimulating economic growth is still alive.

Microfinance projects now seek to achieve improvement in environmental quality in addition to poverty alleviation. Achievement of these goals may depend upon the economic and environmental impact of microfinance business. The impact of micro finance in our economy is that loan amount does not affect the economic outcome, special skills have best performance, and skills cause less pressure on forest resources. These results suggest the need for development of knowledge-intensive skills, involvement of institutions in the operations of business and inclusive policies for protected area management. Microfinance is that it will be much easier for micro entrepreneurs to recover from the economic crisis because their businesses are small and hence it would be flexible.

## CONCLUSION

The biggest strength of micro finance is bringing financial services to poor people and making it financially sustainable by the economies of scale effect. Micro finance helps in the development of an economy by giving everyday people the chance to establish a sustainable means of income. Eventual increases in disposable income will lead to economic development and growth. It is the provision of financial services such as loans, savings, insurance, and training to people living in poverty. Moreover it is one of the great success stories in the developing world in the last 30 years and is widely recognized as a just and sustainable solution in alleviating global poverty. While Opportunity gladly extends loans to the people, the organization believes the greatest opportunity for interrupting cycles of extreme poverty come from microfinance programs that target the entrepreneur role. Opportunity has committed to building scalable, sustainable and accessible banks throughout the developing world to provide loans, training, savings and insurance products tailored to the specific needs of each region. Microfinance can help to create a world in which the underserved have fair access to economic opportunities and the hope to move beyond poverty. Nevertheless microfinance can sustain the economic development of the people in terms of making various chances for their life in different role.

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# TEA INDUSTRY IN INDIA: REGION-WISE ANALYSIS

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**ABSTRACT**

*The commodities are classified into food and non-food items. The food items includes cereals (rice; wheat; maize and products) milk and milk products (milk liquid; baby food; ghee; butter), pulses (arhar; gram; moong; magoor and urad), Vegetables (potato; onion; pumpkin; bitter; gourd and patal) fruits and nuts banana; water melon; orange; mango; litchi; apple; grapes; and other fresh fruits; ground nut; cashew nut; kishmish and other dry fruits), salt and spices (salt iodized; salt others; chilli; black pepper; turmeric; gartic; ginger; curry power and other spices), sugar, (sugar crystal; gur; honey and other sugar item), Beverages and processed food (tea leaf; tea dust; coffee powders cold beverage and other beverages; biscuits and confectionary; pickles; jam-jelly and other processed foods) In the category of beverages and processed food found tea is included. Tea is considered as important beverages in India. Tea provides the average Indian with a pleasant and stimulating non-alcoholic beverage at a reasonable affordable price and has found a place in the culture. Tea is one of the important fast moving consumer goods in India. This study analyses the Tea Industry with special reference to region-wise.*

**KEYWORDS**
Tea, Industry, Production, Yield, Cultivation area.

## INTRODUCTION

The commodities are classified into food and non-food items. The food items includes cereals (rice; wheat; maize and products) milk and milk products (milk liquid; baby food; ghee; butter), pulses (arhar; gram; moong; magoor and urad), Vegetables (potato; onion; pumpkin; bitter; gourd and patal) fruits and nuts banana; water melon; orange; mango; litchi; apple; grapes; and other fresh fruits; ground nut; cashew nut; kishmish and other dry fruits), salt and spices (salt iodized; salt others; chilli; black pepper; turmeric; gartic; ginger; curry power and other spices), sugar, (sugar crystal; gur; honey and other sugar item), Beverages and processed food (tea leaf; tea dust; coffee powders cold beverage and other beverages; biscuits and confectionary; pickles; jam-jelly and other processed foods)[1]. In the category of beverages and processed food found tea is included. Tea is considered as important beverages in India. Tea provides the average Indian with a pleasant and stimulating non-alcoholic beverage at a reasonable affordable price and has found a place in the culture. Tea is one of the important fast moving consumer goods in India.

Industries in India are classified as (i) Size-based Industries, (ii) Proprietary-based Industries, (iii) Use-based Industries, (iv) Input-based Industries, and (v) Area-based Industries. In the input based industries, agro-based industries are considered as an important industry. It includes plantation and non-plantation sector.

Plantations producing tea, coffee and rubber are some of the important class of organized industries in India. Work in plantations is essentially agricultural although the plantation system has many features in common with organized industry. As remarked by Witley commission, "The plantation represents the development of agricultural resources of tropical countries in accordance with the methods of western industrialism; it is a large scale enterprise in agriculture"[2].

In India, plantations accounts for 0.8 percent of the total cultivable land. They also contribute 5 percent to the national income in agriculture. Besides they provide more employment per rupee of investment in the country than either agriculture or in industry. Plantation industry employs a large amount of labour force especially women workers which are highest compared to any industry[3]. Moreover this industry helps in the development of other industries.

Among the different plantation crops, tea is considered to be the most important crop in our country. It is the second biggest foreign exchange earner and is exported to about 85 countries. It also contributes a sizable amount to the national income. Moreover, it provides direct gainful employment to a large number of people and helps in providing indirect employment in various sectors. Apart from its contribution to the economy of India, tea today provides to the common man a pleasant stimulating non-alcoholic beverage[4].

## ORIGIN OF TEA INDUSTRY

The tea is scientifically known as Camellia Sinensis (L) Kuntz (Botanical family Theaceae). In 2737BC the Chinese Emperor Shen Nung, an able administrator, herbalist and a naturalist went for hunting. Tired as he was, he was relaxing under a tree. His servant was boiling water in the open when some leaves fell into the boiling water. The servant was afraid that the emperor might punish him. But smilingly the emperor drank that water. What a surprise? He felt fresh and started thinking over the leaves. The plant identified as Tchai then called Cha, Tay and now as tea. The Tang dynasty declared tea as a spreading Buddhism, tea also reached far and wide[7].

## TEA INDUSTRY IN INDIA

Tea is one of the oldest industries in India and today it enjoys the status of one of the best organized industries in the country. Although tea has been known since 2737 B.C. and consumed as a beverage for 1250 years[8], its cultivation in India commenced very recently.

The weakening of trade relations between China and Britain during 1780 led to the initiative of the East India Company to raise the commodity in India. In 1778, Sir Joseph Banks was asked to prepare a series of notes for the company. He recommended the cultivation of tea in India. He gave priority to tea as an article of greatest national importance to Britain. The first recorded mention of tea in India was in 1780 when Robert Kyol experimented with tea cultivation with imported seeds. Warren Hastings had some interest in tea cultivation.

- The discovery that the tea plant grows wild in the upper part of the Brahmaputra Valley was made by Robert Bruce in 1823 and the rise of the industry in India owes its orgin to the momentous discovery of this indigenous tea plant.
- India is considered as one of the native homes of the tea plant. "The indigenous tea plant growing in a wild condition in Assam was first discovered about 1820"[9].

The inception of the tea industry in India can be associated with the refusal of the Chinese Government in 1833 to renew the agreement as granting the East India Company the rights of monopoly of British trade with China. This removal of the monopoly of the China trade in 1833 'quickened their perceptions to the

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advantages likely to accrue to India by the establishment of a new industry[10]. Subsequently, in 1834, Lord William Bentinck, the then Government – General, appointed a committee, called Tea committee with Dr. N. Wallich as head "to study a plan for the accomplishment of the introduction of tea culture in India and for the superintendence of its execution". The committee recommended that G.J. Garden should be directed to proceed to China to obtain more knowledge about the cultivation. In 1835, the secretary of committee dispatched the seeds from China which reached Calcutta later in the same year. A Governmental experimental garden was opened at Chabua planted with Assam indigenous seed. Experiments were also conducted in South India under the auspices of the Tea Committee.

The first commercial sample of Assam tea of eight chests, weighing 488 lbs., was sent to London and sold on January 10, 1838 at a fancy price. The Assam Company with a capital of 200000 pounds was formed in that city in 1839. The Assam Company had a virtual monopoly of tea production during the first decade; but its management was so ineffective that it did not pay dividends out of earnings for thirteen years and at one time had dissipated all its capital[11], but, later on, it began paying handsome profit; this led to a great extension of a tea planting.

"There was a frenzied rush for opening up tea gardens and in fact, tea became a favourite topic"[12]. Tea was first planted in Darjeeling (West Bengal) in 1839, in Sylnet and Cachar (Assam) in 1855, in the Terai (West Bengal) in 1862 and in the Dooars (West Bengal) in 1874.

## IMPORTANCE OF TEA INDUSTRY

The importance of the tea industry in the nation's economy and its role in our planned economic development has been widely recognized. Except the public utility services like the Railways, it is the largest organized industry which comprises more than a million workers employed both in plantation and manufacturing industry. Till recently tea had been the largest foreign exchange earner for India but for the last few years' jute has taken the first place and tea remains as the second largest foreign exchange earner.

## OBJECTIVES OF THE STUDY

The following are the important objectives of the study

- To analyses the region-wise tea cultivation area in India.
- To analyses the region-wise tea production in India.
- To analyses the region-wise yield of tea in India.
- To give the suggestions to improve the tea industry in India

## STUDY PERIOD

For the present study 10 years data were analyzed from 1998 to 2007.

## FRAME WORK OF ANALYSIS

The collected data are processed with the help of appropriate statistical tools like Correlation analysis, Compound Growth Rate and t test in order to fulfill the objectives of the study.

## REGION-WISE ANALYSIS OF TEA CULTIVATION IN INDIA

Tea cultivation and manufacturing in India are done by two regions that is North and South region. North region includes Assam, West Bengal and Tiribura. South region includes Tamilnadu, Kerala and Karnataka**.** This part analyses the region wise tea cultivation area, production and yield.

## REGION WISE TEA CULTIVATION AREA IN INDIA

Tea Board classifies India as the two regions as North region and South region with respect to tea cultivation. The details of the region wise tea cultivation area in India are stated in Table 1 as follows:

**TABLE 1: REGION WISE TEA CULTIVATION AREA IN INDIA**

| Year | North Region | | South Region | | All India | |
|---|---|---|---|---|---|---|
| | Area (in hectares) | Index of Growth | Area (in Hectares) | Index of Growth | Area (in hectares) | Index of Growth |
| 1998 | 365000 | 100.00 | 109027 | 100.00 | 474027 | 100.00 |
| 1999 | 377454 | 103.42 | 112746 | 103.41 | 490200 | 103.41 |
| 2000 | 390906 | 107.10 | 113460 | 104.06 | 504366 | 106.40 |
| 2001 | 395113 | 108.25 | 114657 | 105.16 | 509770 | 107.54 |
| 2002 | 399626 | 109.48 | 113314 | 103.93 | 511940 | 107.99 |
| 2003 | 404884 | 110.92 | 114714 | 105.21 | 519598 | 109.62 |
| 2004 | 406190 | 111.28 | 115213 | 105.67 | 521403 | 109.99 |
| 2005 | 435788 | 119.39 | 119823 | 109.90 | 555611 | 117.21 |
| 2006 | 447371 | 122.56 | 119649 | 109.74 | 567020 | 119.61 |
| 2007 | 458718 | 125.67 | 119740 | 109.83 | 578458 | 122.03 |

**Source**: Statistical Report of Tea Board

It is clear from Table 1 that in North region tea cultivation area was 365000 hectares in 1998. It assumed an increasing trend and reached to 458718 hectares in 2007. The growth index is 125.67 percent over a period of 10 years from 1998. In south region tea cultivation area was not increasing remarkably. It is evident from the tea cultivation area of 109027 hectares in 1998 and the increase to 119740 hectares in 2007. The growth index is only 109.83 percent over a period of 10 years from 1998. Hence, tea cultivation area and the rate of growth are low for south region compared to north region.

Region-wise tea cultivation area is analysed through correlation analysis and the result of it is stated in Table 1.1 as follows:

**TABLE 1.1: REGION WISE TEA CULTIVATION AREA IN INDIA (Correlation analysis)**

| Region | Correlations Marked correlations are significant at p < .05000 (N=10) | | | |
|---|---|---|---|---|
| | Means | S. D. | North India | South India |
| North India | 408105.0 | 30217.55 | 1.000000 | 0.963248 |
| South India | 115234.3 | 3543.53 | 0.963248 | 1.000000 |

It is clear from Table 1.1 that there exists high positive correlation between North region and South region as for as the area under tea cultivation in different periods.

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11. Parliamentary papers, 1874, XLVIII, Cd, 982, P. 36.
12. Nanporia, J.J. (Ed.) – The Times of India Directory and Year Book Including Who's Who, 1965-66, P. 393.

It is further analysed related to t test of independent variable to know the comparative consistently in the growth over a period of time. The result of the analysis is stated in Table 1.2 as follows:

**TABLE 1.2: REGION WISE TEA CULTIVATION AREA IN INDIA ( t test Analysis)**

| Region | Test of means against reference constant (value) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Mean | S. D. | N | S. E. | Reference | t-value | df | p |
| North India | 408105.0 | 30217.55 | 10 | 9555.627 | 0.00 | 42.7083 | 9 | 0.000000 |
| South India | 115234.3 | 3543.53 | 10 | 1120.562 | 0.00 | 102.8361 | 9 | 0.000000 |

It is clear from the table that t value is low for North India and it shows that there is comparatively high consistency with respect to areas of tea production for different periods of the study.

## REGION-WISE PRODUCTION OF TEA IN INDIA

The following Table shows the region-wise tea production in India from 1998 to 2007.

**TABLE 2: REGION-WISE PRODUCTION OF TEA IN INDIA**

| Year | North Region | | South Region | | All India | |
|---|---|---|---|---|---|---|
| | Production (m.kgs) | Index of Growth | Production (m.kgs) | Index of Growth | Production (m.kgs) | Index of Growth |
| 1998 | 670.658 | 100.00 | 203.450 | 100.00 | 874.108 | 100.00 |
| 1999 | 623.259 | 092.93 | 202.676 | 099.62 | 825.935 | 094.48 |
| 2000 | 640.756 | 095.54 | 206.166 | 101.33 | 846.922 | 096.88 |
| 2001 | 650.807 | 097.04 | 203.116 | 099.84 | 853.923 | 097.69 |
| 2002 | 631.755 | 094.19 | 194.410 | 095.55 | 826.165 | 094.52 |
| 2003 | 663.586 | 098.95 | 193.469 | 095.09 | 857.055 | 098.04 |
| 2004 | 662.184 | 098.74 | 231.092 | 113.58 | 892.97 | 102.15 |
| 2005 | 718.416 | 107.12 | 227.554 | 11.85 | 945.97 | 108.22 |
| 2006 | 753.238 | 112.31 | 228.562 | 112.34 | 981.80 | 112.32 |
| 2007 | 764.745 | 114.03 | 221.685 | 108.79 | 986.43 | 112.85 |

**Source**: Statistical Report of Tea Board

It is clear from Table 2 that in 1998 North India produced 670.658 m.kgs and it reached to 764.745 m.kgs in 2007. The growth index is 114.03 percent over a period of 10 years from 1998. South India produced 203.45 m.kgs in 1998 and it reached to 221.685 m.kgs in 2007. The growth index is only 108.79 percent over a period of 10 years from 1998. Hence, tea production and the rate of growth are low for south region compared to north region.

Region-wise tea production is analysed through correlation analysis and the result of it is stated in Table 2.1 as follows:

**TABLE 2.1: REGION-WISE TEA PRODUCTION IN INDIA (Correlation Analysis)**

| Region | Correlations Marked correlations are significant at p < .05000 (N=10) | | | |
|---|---|---|---|---|
| | Means | S. D. | North Region | South Region |
| North Region | 677.9404 | 50.10260 | 1.000000 | 0.691709 |
| South Region | 211.2180 | 14.50755 | 0.691709 | 1.000000 |

It is clear from Table 2.1 that there exists high positive correlation between North region and South region as for as the tea production in different periods.

It is further analysed related to t test of independent variable to know the comparative consistently in the growth over a period of time. The result of the analysis is stated in Table 2.2 as follows:

**TABLE 2.2: REGION-WISE TEA PRODUCTION IN INDIA ( t test Analysis)**

| Region | Test of means against reference constant (value) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Mean | S. D. | N | S. E. | Reference | t-value | df | p |
| North Region | 677.9404 | 50.10260 | 10 | 15.84383 | 0.00 | 42.78891 | 9 | 0.000000 |
| South Region | 211.2180 | 14.50755 | 10 | 4.58769 | 0.00 | 46.04015 | 9 | 0.000000 |

It is clear from the table that t value is low for North India and it shows that there is comparatively high consistency with respect to production for different periods of the study.

## REGION-WISE AVERAGE YIELD OF TEA IN INDIA

The following table shows that the region wise yield of tea in India from 1998 to 2007.

**TABLE 3: REGION-WISE AVERAGE YIELD OF TEA IN INDIA**

| Year | North Region | | South Region | | All India | |
|---|---|---|---|---|---|---|
| | Yield (kg per hec.) | Index of Growth | Yield (kg per hec.) | Index of Growth | Yield (kg per hec.) | Index of Growth |
| 1998 | 1805 | 100.00 | 1987 | 100.00 | 1844 | 100.00 |
| 1999 | 1631 | 090.36 | 1875 | 094.36 | 1685 | 091.37 |
| 2000 | 1639 | 090.80 | 1817 | 091.44 | 1679 | 091.05 |
| 2001 | 1647 | 091.24 | 1771 | 089.13 | 1675 | 090.84 |
| 2002 | 1575 | 087.25 | 1802 | 090.68 | 1625 | 088.12 |
| 2003 | 1601 | 088.69 | 2004 | 100.85 | 1690 | 091.65 |
| 2004 | 1630 | 090.30 | 2003 | 100.80 | 1713 | 092.90 |
| 2005 | 1649 | 091.35 | 1899 | 095.57 | 1703 | 092.35 |
| 2006 | 1684 | 093.29 | 1910 | 096.12 | 1732 | 093.93 |
| 2007 | 1667 | 092.35 | 1851 | 093.15 | 1705 | 092.46 |

**Source**: Statistical Report of Tea Board

It is clear from Table 3 that yield rate of tea in north region and south region are varying for all the years. Yield for south region is comparatively high than the north region though the area and total production in north region is very high than the south region. The yield for both the regions are in an decreasing trend. For north region it decreased from 1805 kgs in 1998 to 1667 kgs in 2007. The index decreased as 92.35 percent over a period of 10 years from 1998. For south region it decreased from 1987 kgs in 1998 to 1851 kgs in 2007. The index decreased as 93.15 percent over a period of 10 years from 1998.

Region-wise tea yield are analysed through correlation analysis and the result of it is stated in Table 3.1 as follows:

TABLE 3.1: REGION-WISE YIELD OF TEA IN INDIA (Correlation Analysis)

| Region | Correlations Marked correlations are significant at p < .05000 (N=10) | | | |
|---|---|---|---|---|
| | Means | S. D. | North Region | South Region |
| North Region | 1652.800 | 61.74284 | 1.000000 | 0.322629 |
| South Region | 1891.900 | 84.72105 | 0.322629 | 1.000000 |

It is clear from Table 3.1 that there exists high positive correlation between North region and South region as for as the tea yield in different periods.
It is further analysed related to t test of independent variable to know the comparative consistency in the growth over a period of time. The result of the analysis is stated in Table 3.2 as follows:

TABLE 3.2: REGION-WISE YIELD OF TEA IN INDIA (t test Analysis)

| Region | Test of means against reference constant (value) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Mean | S. D. | N | S. E. | Reference | t-value | df | p |
| North Region | 1652.800 | 61.74284 | 10 | 19.52480 | 0.00 | 84.65132 | 9 | 0.000000 |
| South Region | 1891.900 | 84.72105 | 10 | 26.79115 | 0.00 | 70.61661 | 9 | 0.000000 |

It is clear from the table that t value is low for South India and it shows that there is comparatively high consistency with respect to production for different periods of the study.

## FINDINGS OF THE STUDY

Tea is marketed and made available to the consumers in two different forms viz. loose and packaged. Modes of disposal of Indian tea are as follows (a) Direct consignment to London auction, (b) Direct sale by forward contract to overseas buyers (c) Consignment to Indian auctions, (d) Direct ex-factory sale to Indian buyers (e) Direct sale by forward contract to Indian buyers, (f) Direct Marketing (loose tea) in wholesale markets and (g) Self-packeting and exports of packets overseas. Over and above, there are some sales of Indian packaged tea abroad and small scale attempts to sell packaged tea in home market by Indian producers. Tea cultivation area and the rate of growth are low for south region compared to north region. Tea production and the rate of growth are low for south region compared to north region. Tea yield and the rate of growth are low for south region and north region are varying from year to year. North India's average yield of tea was high than South India's average yield of tea. There exists high positive correlation between North region and South region as for as the area under tea cultivation in different periods. There exists high positive correlation between North region and South region as for as the tea production in different periods. There exists high positive correlation between North region and South region as for as the tea yield in different periods.

## SUGGESTIONS OF THE STUDY

Tea cultivation area and the rate of growth are low for south region compared to north region, so the Tea Board of India may take necessary steps to solve these problems, particularly Tea Board may announce special fund to South India's Tea cultivators and Tea Manufacturers. Tea production and the rate of growth are low for south region compared to north region, So the Tea Board may provide Special assistance to the tea producers of South Region. Tea yield and the rate of growth are low for south region and north region are varying from year, So Tea Board may take necessary steps to increase the quality of Tea plants. Government may arrange the special education program to tea growers and tea manufacturers of South Region.

## CONCLUSION

Tea is marketed and made available to the consumers in two different forms through loose and packaged. Loose tea is not subjected to any further major processing after it is purchased at auction. It is sold to the consumer rather in the same condition or in blended form. It is generally not packed in convenient sizes before it is sold. In packet tea trade, on the other hand, tea undergoes further processing and different types of tea are blended and sold to the consumers in packets of conventional sizes.

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# IMPACT OF CO-OPERATIVE LOAN ON SMALL AND MARGINAL FARMERS OF E.G.DISTRICT OF ANDHRA PRADESH

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**ABSTRACT**

*Agriculture forms the backbone of the Indian economy. It contributes 18.5 percent to the GDP and provides employment to about 52 percent of the total working population during the year 2006-07. The advanced technological changes in the agricultural sector necessitated the requirement of more working capital. Hence, the poor peasants in India are in search of timely credit. Co-operative banks were established on the principle of co-operation and to serve the poor peasants. The main function of these banks is to relieve the poor farmers from the clutches of money lenders. These are playing significant role in extending credit to the farm sector besides providing inputs, marketing and extension services. Particularly in the state of Andhra Pradesh (A.P.), Co-operatives play a very important and crucial role in the growth and development of agricultural sector. East Godavari District is an agriculturally developed district in Andhra Pradesh where paddy forms up to 53 percent of the total cultivated area. In the district, Co-operatives are functioning in most efficient manner by providing adequate, cheap and timely credit to agriculture and allied sector. They spread to the remote areas of the district in order to serve the needy farmers. These Banks accept deposits and lend both short-term and long-term credit for production and investment purpose through Primary Agricultural Co-operative Societies (PACS) and also directly to the farmers. Co-operative Banks are the friendly banks developed to relieve the poor from the vicious circle of poverty.These areproviding timely and adequate credit to the three sectors viz., primary, secondary and territory, particularly to agriculture and allied sector at cheaper rates. On this backdrop, an attempt is made to analyze the impact of cooperative loans on the agricultural development of the state, Andhra Pradesh. In order to study the impact, East Godavari district is to be chosen as sample as it represents the overall characteristics of Andhra Pradesh.*

**KEYWORDS**

cooperative credit, District Central Cooperative Bank (DCCB), Primary Agricultural Cooperative Societies (PACS), irrigation, yield, crop and term-loans, High yield varieties (HYV), allied sector, livelihood

## 1. INTRODUCTION

Co-operative Movement in India was started primarily for dealing with the problem of rural credit. Indian agriculture is mainly dominated by small, marginal farmers and landless labourers who live in the subsistence economy and are not in a position to finance agricultural inputs for the development of agriculture. So to meet their agricultural requirements, adequate credit is crucial for the agricultural development. Agriculture requires appropriate institutional mechanism to purvey both short-term and long-term credit to the farmers. After the Independence, the Government of India (GOI) has adopted a multi-agency approach for farm credit in order to provide adequate, cheap and timely credit.

Cooperatives have occupied an important place in agricultural development of the country as they provide basic credit which lubricates the wheel of agriculture. The District Central Co-operative Bank (DCCB) occupies and forms an important position in the Co-operative credit structure. The success of the Co-operative credit movement largely depends upon the role and financial strength of the DCCB. The finance granted by the DCCB is given to the cultivators through PACS. Hence the Co-operative banking structure has been conceptualized to play vital role in providing timely, adequate and cheaper credit to the farmers for basic support to core agricultural activities.

Credit Co-operatives play an important role in the Indian financial system especially at the village level. These are one of the important components of multi-agency system which plays a vital role in the development of the nation. These are the oldest and the most numerous of the all types of Co-operatives in India. The origin of Indian Co-operative Banking started with the enactment of Co-operative Societies Act, 1904. The objective of this Act was to establish Agricultural Co-operative Credit Societies "to encourage, thrift, self-help and co-operation among agriculturists, artisans and persons of limited means".

The following are the objectives of Credit co-operatives:

i) To ensure timely and increased flow of credit to the farming sector
ii) To reduce and gradually eliminate the money lenders
iii) To reduce regional disparities throughout the country
iv) To provide longer credit support to various rural development programmes
v) To provide cheap credit with or without any security.

Co-operative Banks are organized and managed on the principle of co-operation, self-help and mutual- help and function with the rule of "*one member, one vote*", function on "*no profit, no loss*" basis. Co-operation as principle does not pursue the goal of profit maximization.

Andhra Pradesh is basically an agrarian economy and is known as "Granary of the South" by producing one-tenth of India's total output of food grains. As Andhra Pradesh is predominantly agricultural in character around 70 percent of the population depends on it for their livelihood. In Andhra Pradesh the Co-operative credit societies play an important role in serving the needy farmers by providing short term, medium term and long term loans at lower rates of interest. Andhra Pradesh is the first state which implemented the Single Window Credit Delivery System (SWCDS) in 1987.It is an innovative programme in which PACS are expected to provide multi-farm credit and multi-functional services at a single contact point.

East Godavari is one of the north-eastern districts of Andhra Pradesh. It shares the distinctions of "Rice Bowl of Andhra Pradesh" by producing paddy of 2625 kg per acre. As it is situated on the coastal side of Andhra Pradesh, majority of the East Godavari district people depend on agriculture and allied sectors for their livelihood. It is one of the highest population density regions, as agriculture is well developed. Rice, tobacco, pulses and coconut etc. are the major crops of this district.

The net area cultivated with crops forms about 41 percent of the total geographical area of the district. Out of the net area sown a large portion of the area is irrigated by the network of irrigation canals in the district. The Godavari Irrigation System (GIS) irrigates all the mandals in delta region. Paddy forms 53 percent of the total area sown with an average yield of 2625 kgs. / Acre in the district. The district stands first in the cultivation of the coconut and bananas. Out of the total production of bananas and coconuts in the state 36 percent and 57 percent of the production is from this district only.

In this district Co-operatives are functioning in most efficient manner by providing adequate, cheap and timely credit to the agriculture and allied sector. Co-operative Credit institutions at district level are serving the agriculture and allied sector to a great extent in the East Godavari District. They spread to the remote areas of the district in order to serve the needy farmers. The Government of Andhra Pradesh set up Co-operative Central Bank at district level in Kakinada in the year 1987. The East Godavari District Cooperative Central Bank Ltd., Kakinada (DCCB) is one of the biggest Cooperative Central Banks in Andhra Pradesh catering the needs of the agriculturists. It performs all the banking functions as per the Banking Regulation Act 1949. Now the bank is rendering services with 47 branches and 293 Primary Agricultural Co-operative Societies in the district.

It was established as a result of Single Window Credit Delivery System (SWCDS), by the amalgamation of four DCCBs viz., The Kakinada Co-operative Central Bank, The Ramachandrapuram Cooperative Central Bank, The Konaseema Co-operative Central Bank and The Rajahmundry Co-operative Central Bank. Actually it had operations from the year1917 itself. It performs all the banking functions as per the Banking Regulation Act 1949. The bank accepts deposits and lends both short-term and long-term credit for production and investment purpose through Primary Agricultural Co-operative Societies and also directly to the farmers. As on 31st March 2010 there were 47 branches including head office, 1534 Primary Agricultural Co-operative Societies with a membership of 47,532. These institutions mobilized deposits of Rs. 23, 131 Crores and issued short-term loans of Rs. 24, 567 lakhs and non-agricultural loans of Rs. 4545 lakhs. It earned a profit of Rs.124 lakhs for the year 2009-10.

## 2. REVIEW OF LITERATURE

Agricultural finance as a strategic input in farm production and credit as a tool in productivity has attracted considerable attention of the researchers. Cooperative credit for agriculture and allied activities occupied a predominant position in the Cooperative movement to fulfill the economic needs of nearly 80 percent of the population living in villages.

The findings of earlier studies might possibly give indications of the problem on the one hand and also provided certain guidelines for the present study. In addition, the earlier studies provided the necessary cushion for a proper understanding of the role of Cooperative credit and its role in helping farmers so that pointed attention was focused which in turn would enable the policy makers to plan appropriate strategy and apply corrective measures wherever necessary.

As agriculture forms the backbone of the Indian economy, The Government of India recognized the importance of free flow of credit to agriculture and allied sectors. Sharma (1967) stated that for agricultural development, credit is an important input which ensures adequate working capital as well as infrastructural development. Deccan Ryots Commission (1875) and Famine Commission (1880) concluded in their reports that majority of land holdings were deeply and inextricably in debt. The Central Banking Enquiry Committee (1929) observed that institutional credit provided to the agriculturists covered only a smaller portion. Black (1955) has emphasized the importance of credit and observed that credit provision was the first and foremost input to be increased, which enabled the farmers to buy more labour saving equipment, better seeds and fertilizers etc. Ford Foundation (1959) had recommended adequate supply of farm credit in order to increase the farm productivity. Mishra (1982) has observed that modernization of agriculture necessitated huge capital investment. Hence, farm credit becomes *sine qua none* of agricultural development in the country. Reports of Frederic Nicholson and Edward Law Committee on Co-operative legislation confirmed and reiterated the need for the state to actively promote co-operatives. A decade later, a Maclagan Committee (1915) advocated that "there should be one Cooperative for every village and every village should be covered by a Co-operative". In 1928, Royal commission observed that "if co-operation fails, there will fail the best hope of rural India".

Calvert (1996) aptly argued that cooperative credit is the practical alternative to usury. Adequate credit increases the agricultural output. The observations of Chaudhuri (2001) were strongly supported by Shetty (2004) and suggested that in order to increase the productivity of agriculture, better institutional credit delivery mechanisms were to be conceptualized, planned and executed urgently. As agriculture forms the backbone of the Indian economy, The Government of India recognized the importance of free flow of credit to agriculture and allied sectors. Sharma (1967) stated that for agricultural development, credit is an important input which ensures adequate working capital as well as infrastructural development. Adequate credit increases the agricultural output. Agricultural credit and agricultural development goes by hand in hand, hence the farmer should be provided adequate and cheap credit (Dutta and Sundaram, 2005). It is supported by Kanthimathinadhan (2005) and suggested that without cheap credit is not possible for small and marginal farmers to survive. Shetty (2004) and Shivaloganathan suggested in their work that better institutional credit facilities is highly essential for agricultural growth. He also suggested multi-agency approach in order to fill gap between supply and need of credit in agricultural sector. Pathania (1987) analyzed the utilization of co-operative credit in agricultural sector and concluded that with the proper utilization of Co-operative credit the farmers can increase their productivity. It was strongly supported by Sharma (1989), Modi and Rai (1993), Sathey (1996) and Patnaik (1999). B.Subrahmanyam (2005) viewed that Co-operative rural credit delivery system has been farmer-friendly and has out reached to serve agriculture. Calvert (1996) aptly argued that Cooperative credit is the practical alternative to usury. Subbaiah & Selvakumar (2005) observed that the institutional finance to agriculture which has contributed 22.1 percent of GDP in 2002-03. He also found that the govt. has estimated the credit flow from all lending institutions for the year 20003-04 at Rs. 80000 crores and has planned to enhance the level of flow to Rs. 105000 crores for the year 2004-05 which represents an increase of 30 percent over the previous year. Vilasrao Deshmukh (2005) said that the Co-operatives in India account for more than half of industrial finance advanced to agriculture and one-fifth of private capital formation. Sri Rajnath Singh (2006) called upon the Govt. to take necessary steps so that farmers may not have to pay more than 6 percent interest on the agricultural loans.

## 3. METHODOLOGY

The objective of the present study is to analyze the impact of cooperative loans on agriculture sector, primarily on small and marginal farmers of East Godavari district in Andhra Pradesh. The present study is an attempt to analyze the impact of cooperative credit on the beneficiaries of the district. Its' focus is regional and pertains to E.G. District only. In view of this, an attempt has been made to study the role of the DCCB, Kakinada and Primary Agricultural Co-operative Societies working under it for the growth and development of agricultural sector in the E.G. District of Andhra Pradesh. Agricultural development in the present work has been assessed through the flow of cooperative credit to farm sector. In order to study the impact of cooperative credit, the credit supplied by the DCCB Kakinada through PACS to different sections of the agricultural sector has been analyzed. The credit supplied by the cooperative banks to different sectors such as short-term credit, long-term credit and credit to agricultural sector has also been analyzed. The growth in the usage of agricultural inputs is also analyzed to study the objective. The study is based on two sets of data viz., Primary and Secondary. The primary data relating to socio-economic background, credit structure, incomes, use of fertilizers and HYV seeds, yield per acre, employment generation, and land infrastructure etc. are collected from 432 sample beneficiaries of E.G. District by direct personal interview method. The sample beneficiaries were selected by stratified random sampling method. The secondary data relating to the growth and development of cooperative banks in the district was collected from the various publications & websites of the Directorate of Economics and Statistics. Data relating to DCCB, Kakinada was obtained from the annual reports & websites of DCCB, Kakinada.

The collected data was suitably classified and tabulated for the purpose of analysis and interpretation with simple statistical tools of analysis like ratios, percentages, etc. To test the hypotheses, Paired't' test etc. was used. To assess the impact of Co-operative credit on the beneficiaries of agricultural sector, the data relating to pre-loan and post-loan period was collected.

One of the major limitations of the study is that it has been confined to E.G. District only, which is rather not a representative unit for realistic data acquisition and virtual comparisons of the performance of various similar DCCBs. Only paddy cultivation has been taken for the present study as paddy cultivation is the main staple of agriculture in E.G. District. While collecting the primary data recall method was employed. As the sample respondents have no habit of maintaining records of their operations especially income, output etc., there may be chances of errors in the data collected.

## 4. ANALYSIS

The Green Revolution results in remarkable changes in agricultural sector. The Revolution initiated through the changes in the approach of the Fourth Five Year Plan envisaged that modernizing agriculture is more or less a technology of inputs and its judicious management on scientific basis. This new situation calls for greater financial investment on the part of farmers for purchasing of the inputs. Consequently the provision of credit to farmers on liberal terms and conditions become sine qua none of agricultural development in the country. The development of Co-operative credit in the form of catalyst has accelerated the pace of agricultural development.

The Government of Andhra Pradesh (GoAP) set up Co-operative Central Bank at district level in Kakinada in 1987. As Kakinada is the district headquarters and surrounded by so many villages, it is suitable for establishing Co-operative Central Bank. The E.G. District Cooperative Central Bank Ltd., Kakinada (DCCB) is one of the biggest Cooperative Central Banks in Andhra Pradesh catering the needs of the Agriculturists in East Godavari District. The DCCB is deemed to have been

registered as Cooperative Society under Section 7 of Andhra Pradesh Cooperative Societies Act, 1964. It started its operations 88 years ago (*i.e.,* from 22.01.1917). The jurisdiction of the Bank extends to the entire East Godavari District and is servicing the rural clientele through 47 Branches in the District.

Among other districts in Andhra Pradesh, the E.G. District leads in agricultural productivity. As it is situated on the coastal line of Andhra Pradesh, the main occupation of people is agriculture. Though this district is full of natural resources, agriculturists lack adequate funds to reap the fruits of the nature. E.G. District is having fertile lands with high irrigation facilities, but with small holdings and landless labourers. In order to serve poor and rural peasants, Cooperative Central Banks were established in this district.

In this district, Co-operatives are functioning in most efficient manner by providing adequate, cheap and timely credit to agriculture and allied sector. The District Central Co-operative Bank, Kakinada being a farmer's bank in the district covered all 1327 villages and 54 Revenue Mandals by its wide network of 47 branches and 310 Primary agricultural Cooperative Societies providing services from the last 88 years. The District Central Co-operative Banks are playing very crucial role in serving the rural peasants of the district.

In order to study the impact of co-operative credit on small and marginal farmers, the entire district was grouped into three stratus depending upon the factor of irrigation viz., Irrigated ($V_1$), Semi-irrigated ($V_2$) and Non-irrigated ($V_3$) pockets. The impact of Co-operative credit was analyzed by the modernization of agricultural process during the pre-loan and post-loan periods.

To know the impact of agricultural credit on borrowers, the study is divided into two categories viz., *(i) Impact on Agricultural Crop loan (ii) Impact on Agricultural Term loan*. Benefits derived by agricultural crop loans and term loans are analyzed on the basis of the following parameters:

a) Impact on irrigation
b) Impact on cropping pattern
c) Impact on use of fertilizers, pesticides and manures etc.
d) Impact on labour cost
e) Impact on Production and yield per acre
f) Impact on income per borrower and income per acre of holding.

To know the impact on Agricultural crop and term loans again, the borrowers are classified on the basis of caste and operational holdings.

**4.1 IMPACT ON AGRICULTURAL CROP LOAN**

The short-term loans are disbursed in the form of 'A' and 'B' components, such that 'A' comprises cash portion to meet the costs of agricultural operations and 'B' comprises kind portion to meet the costs of seed, fertilizer, pesticides etc., supplied to members through the co-operative deposits. The interest for crop loan is about 11 percent till 2007-08. But now the interest rate is going to decrease to a rate of 4 percent from this year onwards. The short-term loans are sanctioned for all crops including local, improved and HYV as per the scale of finance. These loans help the cultivators to meet the working capital needs and to generate surplus for agricultural development.

The farmers are classified into three groups basing on the size of land holdings-small (below 2.5 acres), medium (2.5-5 acres) and large farmers (above 5 acres).

**TABLE 1: DISTRIBUTION OF SAMPLE BENEFICIARIES ON THE BASIS OF SIZE OF LAND HOLDINGS**

| Village | Size of land holding in Acres | | | |
|---|---|---|---|---|
| | Small (0-2.5) | Medium (2.5-5) | Large (above 5) | Total |
| $V_1$ | 11 (25.0) | 24 (54.5) | 9 (20.5) | **44 (100)** |
| $V_2$ | 23 (54.7) | 10 (23.8) | 9 (21.4) | **42 (100)** |
| $V_3$ | 19 (34.5) | 23 (41.8) | 13 (23.6) | **55 (100)** |
| **Total** | **53 (37.6)** | **57 (40.4)** | **31 (22.0)** | **141 (100)** |

The figures in brackets indicate percentage to total; ***Sources***: Compiled from Questionnaires.

Table1 reveals that 37.6 percent beneficiaries belong to small and marginal farmers; the percent is highest in $V_2$ *i.e.,* 54.7 percent. Large farmers occupy 22 percent share in total holdings of the district.

**4.1.1. IMPACT ON IRRIGATION**

The irrigation facilities include river, ponds and canals, pump sets, dug wells, drip irrigation, well with pump set etc. During the study it is found that there is no impact on irrigation in $V_1$ strata, but there is a great change in $V_2$ and $V_3$ groups after obtaining loans. The size of net cropped area is increased due to installation of pump sets, dug wells and well with pump set etc.

**TABLE 2: PERCENTAGE CHANGE IN IRRIGATED LAND IN PRE-LOAN AND POST-LOAN PERIOD** (*Borrowers on the basis of operational holdings*)

| Size of Farmers | Percentage of irrigated land | | Variation in Percentage Points |
|---|---|---|---|
| | Pre-loan | Post-loan | |
| **Small & marginal (0-2.5)** | 21.3 | 21.3 | - |
| **Medium (2.5-5)** | 54.6 | 54.6 | - |
| **Large (above 5)** | 49.7 | 50.3 | 0.6 |
| **Total** | **46.6** | **47.2** | **0.6** |

***Sources***: Compiled from Questionnaires

**4.1.2 IMPACT ON CROPPING PATTERN:**

A change in cropping pattern needs more crop loans to enable the farmers to reap the benefits of advanced technology. The impact of Credit Co-operatives finance on cropping pattern in the present study is assessed on the basis of area cultivated under High Yield Variety (HYV) by comparing the post-loan with pre-loan periods.

**TABLE 3: PERCENTAGE CHANGE IN THE USE OF HYV AND NON-HYV SEEDS BY BENEFICIARIES OF DIFFERENT OPERATIONAL HOLDINGS**

| Size | Percentage of area GCA* | | | | Change in percentage points of HYV seeds |
|---|---|---|---|---|---|
| | Pre-loan period | | Post-loan period | | |
| | HYV | Non-HYV | HYV | Non-HYV | |
| **Small (0-2.5)** | 33.7 | 66.3 | 84.5 | 15.5 | **50.8** |
| **Medium (2.5-5)** | 45.6 | 54.4 | 96.3 | 3.7 | **50.7** |
| **Large (above 5)** | 68.2 | 31.8 | 100 | 5.1 | **26.7** |
| **Total** | **34.6** | **55.4** | **94.3** | **5.7** | **49.7** |

***Source***s: Compiled from Questionnaires

*GCA implies Gross Cropped Area

**4.1.3. IMPACT ON USAGE OF FERTILIZERS, PESTICIDES AND MANURES**

Agricultural crop loans enabled the farmers to apply proper dose of fertilizers, pesticides etc. at right time and to keep pace with the change in the new farm technology in agriculture. Supplying adequate loans at right time by the DCCB to the beneficiaries act as motivating factors.

**TABLE 4: USAGE OF FERTILIZERS/ PESTICIDES ETC. PER ACRE IN PRE AND POST-LOAN PERIODS BY DIFFERENT SIZE OF BENEFICIARIES**

| Size | Usage of Fertilizer etc. per acre in Rs. | | Growth in percentage |
|---|---|---|---|
| | Pre-loan period | Post-loan period | |
| **Small (0-2.5)** | 200 | 375 | ***87.5*** |
| **Medium (2.5-5)** | 250 | 495 | ***98.0*** |
| **Large (above 5)** | 325 | 620 | ***90.7*** |
| **Total** | **268.4** | **496.7** | **85.1** |

***Sources***: Compiled from Questionnaires.

**4.1.4. IMPACT ON LABOUR COST**

Due to industrialization, manpower shifted to industrial sector by attracting higher wages. In order to turn back them to agriculture sector, the farmers have to offer high wages which results in an increase in labour cost. With the help of the agricultural crop loans, the cultivators are able to meet the labour cost at right time.

**TABLE 5: LABOUR COST PER ACRE OF DIFFERENT SIZE OF FARMERS DURING PRE-LOAN AND POST-LOAN PERIOD**

| Size of cultivators | Labour cost per acre in Rs | | Growth in percentage |
|---|---|---|---|
| | Pre-loan period | Post-loan period | |
| **Small (0-2.5)** | 600 | 1000 | ***66.7*** |
| **Medium (2.5-5)** | 850 | 1500 | ***76.4*** |
| **Large (above 5)** | 1000 | 1950 | ***95.0*** |
| **Total** | **920.7** | **1537.3** | **67.0** |

***Sources***: Compiled from Questionnaires

**4.1.5. IMPACT ON PRODUCTION**

A change in cropping patterns results in an increase in the productivity of the farmers. Paddy is the major crop of sample villages and cultivation of other commodities is negligible. It is observed that the yield rate has increased irrespective of size of holdings. This might be due to the change in cropping patterns, intensive use of fertilizers and labour etc., which can be resulted by the provision of adequate credit in time by DCCB, Kakinada and its affiliated PACS.

**TABLE 6: YIELD RATE OF PADDY PER ACRE OF DIFFERENT SIZE OF FARMERS DURING PRE-LOAN AND POST-LOAN PERIOD**

| Size of cultivators | Yield per acre in bags* | | Growth in percentage |
|---|---|---|---|
| | Pre-loan | Post-loan | |
| **Small (0-2.5)** | 18 | 24 | **33.3** |
| **Medium (2.5-5)** | 21 | 29 | **38.1** |
| **Large (above 5)** | 25 | 38 | **52.0** |
| **Total** | **22** | **32** | **45.5** |

***Sources***: Compiled from Questionnaires

* A bag contains 75 kg of paddy.

**4.1.6. IMPACT ON INCOME LEVEL**

Change in income level is the best indicator of assessing the impact of farm loans lent by the cooperative banks. There is a positive correlation between yield and income of the farmers. A rise in output automatically results in a raise in the income levels of farmer groups. For the analysis of agricultural term loan on income level of the borrower, two factors viz., income per borrower and income per acre have been taken into consideration. For computation of the income of sample borrowers, the prevailing market price of paddy has been taken into consideration. In order to compute income per acre the total income is to be divided by the total acres of land whether own or leased. When the total income is divided by the number of sample borrowers, it gives the income per borrower.

**4.1.6.1. INCOME PER BORROWER**

The increase in income levels of the beneficiaries can be analyzed by considering the increase in income per borrower and per acre.

**TABLE 7: INCOME PER BORROWER PER ACRE OF DIFFERENT SIZE OF FARMERS DURING PRE-LOAN AND POST-LOAN PERIOD**

| Size of cultivators | Income per borrower in Rs. | | Growth in percentage |
|---|---|---|---|
| | Pre-loan | Post-loan | |
| **Small (0-2.5)** | 12,140 | 20,637 | **69.9** |
| **Medium (2.5-5)** | 15,234 | 25,222 | **65.6** |
| **Large (above 5)** | 19,836 | 31,228 | **57.4** |
| **Total** | **15,337** | **25,336** | **65.2** |

***Sources***: Compiled from Questionnaires.

The above table reveals that there is a significant increase in the incomes of the beneficiaries. The incomes of small farmers are raised by 69.9 percent, marginal farmers by 65.6 percent and large farmers by 57.4 percent. By analyzing the data, it is clear that the most benefitted group is small farmers when compared to large farmers.

**4.1.6.2. INCOME PER ACRE**

It is clear from the table 8 that the income per acre is high in case of large farmers and growth rate is high in case of small and marginal farmers. The impact of crop loan on all size of farmers is statistically significant.

**TABLE 8: INCOME PER ACRE OF DIFFERENT SIZE OF FARMERS DURING PRE-LOAN AND POST-LOAN PERIOD**

| Size of cultivators | Income per Acre in Rs. | | Growth in percentage |
|---|---|---|---|
| | Pre-loan | Post-loan | |
| **Small (0-2.5)** | 6,218 | 10,466 | **68.3** |
| **Medium (2.5-5)** | 7,215 | 11,823 | **63.8** |
| **Large (above 5)** | 8,300 | 13,284 | **60.0** |
| **Total** | **6,730** | **11,117** | **65.2** |

***Sources***: Compiled from Questionnaires

**4.2 IMPACT OF AGRICULTURAL TERM LOANS**

The agricultural term loans are meant for long-term perspective and are used for development and investment purposes. Such loans can be payable over a number of years and helps the cultivators to proper infrastructure for agricultural development.

Table 9 reveals that 50.2 percent of total borrowers belong to small and marginal, 25.9 percent belongs to medium and remaining 26.8 percent belongs to large size farmers. The percentage of small farmers is more in $V_2$group i.e., 54.7 percent than $V_1$ and $V_3$ sample groups. Big farmers are more in $V_3$ group when compared to other groups. Medium size farmers are also more in $V_1$ group having 28.6 percent.

**TABLE 9: DISTRIBUTION OF SAMPLE BENEFICIARIES ON BASIS OF SIZE OF LAND HOLDING**

| Village | Size of land holding in Acre | | | Total |
|---|---|---|---|---|
| | Small (0-2.5) | Medium (2.5-5) | Large (above 5) | |
| $V_1$ | 26 (53.1) | 14 (20.6) | 9 (18.4) | **49 (100)** |
| $V_2$ | 29 (54.7) | 13 (24.5) | 11 (20.8) | **53 (100)** |
| $V_3$ | 17 (41.4) | 10 (24.4) | 14 (34.1) | **41 (100)** |
| **Total** | **72 (50.3)** | **37 (25.9)** | **34 (23.8)** | **143 (100)** |

***Sources***: Compiled from Questionnaires.

The figures in brackets indicate percentage to total.

**4.2.1. IMPACT ON IRRIGATION**

During the study it is found that there is no impact of agricultural term loans on irrigation in $V_1$ strata, but there is a great change in $V_2$ and $V_3$ groups after obtaining loans. The size of net cropped area has increased due to installation of pump sets, dug wells and well with pump set etc.

**TABLE 10: IMPACT OF AGRICULTURAL TERM LOANS ON IRRIGATION** (Borrowers on the basis of operational holdings)

| Size of Farmers | Percentage of irrigated land | | Variation in Percentage Points |
|---|---|---|---|
| | Pre-loan | Post-loan | |
| **Small (0-2.5)** | 21.6 | 48.3 | ***26.7*** |
| **Medium (2.5-5)** | 24.3 | 54.2 | ***29.9*** |
| **Large (above 5)** | 31.6 | 63.1 | ***31.5*** |
| **Total** | **26.2** | **56.3** | **30.1** |

***Sources***: Compiled from Questionnaires

**4.2.2. IMPACT ON CROPPING PATTERN**

The agricultural term loan has a great role in providing the infrastructural facilities to agriculture. It is observed from the table 6.36 that the agricultural term loan has a significant impact on the small and marginal farmers in the adoption of HYV seeds over pre-loan to post-loan period. The impact is more in case of medium farmers than small farmers. In pre-loan period the medium farmers have adopted HYV seeds on 44 percent of Gross Cropped Area. In post loan period the percentage is increased 84.3 percent. The variation in percentage is 40.2 percent. It is known from the field survey that about 26 percent of small farmers did not utilize the loan in productive purposes. Due to this reason the impact on small farmers is probably less on the adoption of HYV seeds as compared to medium farmers in post-loan period.

**TABLE 11: IMPACT OF AGRICULTURAL TERM LOANS ON CROPPING PATTERN ON DIFFERENT SIZE OF HOLDINGS**

| Size | Percentage of area GCA* | | | | Change in percentage** points of HYV seeds |
|---|---|---|---|---|---|
| | Pre-loan period | | Post-loan period | | |
| | HYV | Non-HYV | HYV | Non-HYV | |
| **Small (0-2.5)** | 53.9 | 46.1 | 86.1 | 13.9 | ***32.2*** |
| **Medium (2.5-5)** | 44.1 | 55.9 | 84.3 | 15.7 | ***40.2*** |
| **Large (above 5)** | 56.2 | 48.1 | 100.0 | 25.2 | ***43.8*** |
| **Total** | **48.7** | **51.3** | **86.2** | **15.6** | **39.5** |

*GCA implies Gross Cropped Area

** Difference between percentages HYV paddy in pre-loan and post-loan period

*** Total value is calculated on total Gross Cropped Area under ATL

***Sources***: Compiled from Questionnaires

With the help of Agricultural term loans the borrowers have been able to increase the use of HYV seeds from 48.7 percent to 86.2 percent of the total gross cropped area.

**4.2.3. IMPACT ON USAGE OF FERTILIZERS, PESTICIDES AND MANURES**

The expenditure on fertilizers, pesticides etc. per acre in total sample has increased from Rs.425 in pre-loan period indicating a growth of 110.8 percent. However the impact on small farmers is more as compared to other size of farmers.

**TABLE 12: USAGE OF FERTILIZERS/ PESTICIDES ETC. PER ACRE IN PRE AND POST-LOAN PERIODS BY DIFFERENT SIZE OF BENEFICIARIES**

| Size | Usage of Fertilizer etc. per acre in Rs | | Growth in percentage |
|---|---|---|---|
| | Pre-loan period | Post-loan period | |
| **Small (0-2.5)** | 275 | 595 | **116.3** |
| **Medium (2.5-5)** | 350 | 765 | **118.5** |
| **Large(above 5)** | 625 | 1050 | **68.0** |
| **Total** | **425** | **896** | **110.8** |

***Sources***: Compiled from Questionnaires

**4.2.4. IMPACT ON LABOUR COST**

The agricultural term loan has a significant impact on labour cost per acre of all size of farmers irrespective of their land holdings.

**TABLE 13: LABOUR COST PER ACRE OF DIFFERENT SIZE OF FARMERS DURING PRE-LOAN AND POST-LOAN PERIOD**

| Size | Labour cost per acre in Rs | | Growth in percentage |
|---|---|---|---|
| | Pre-loan period | Post-loan period | |
| **Small (0-2.5)** | 796 | 1424 | ***78.9*** |
| **Medium (2.5-5)** | 832 | 1116 | ***34.2*** |
| **Large (above 5)** | 1215 | 1906 | ***56.9*** |
| **Total** | **1050** | **1638** | **56.0** |

***Sources***: Compiled from Questionnaires.

**4.2.5. IMPACT ON PRODUCTION**

From the field survey it is observed that the term loan for the purchase of ploughs, bullocks and other implements have played an important role in increasing the yield of crops. This helps the borrowers to get timely service. The farmer who had taken loans for dug well, or pump set or dug well with pump set or land development is able to facilitate irrigation and to convert fallow land to agricultural field and thus increase their yield.

**TABLE 14: YIELD RATE OF PADDY PER ACRE OF DIFFERENT SIZE OF FARMERS DURING PRE-LOAN AND POST-LOAN PERIOD**

| Size | Yield per acre in bags* in Rs | | Growth in percentage |
|---|---|---|---|
| | Pre-loan period | Post-loan period | |
| Small (0-2.5) | 21 | 28 | ***33.3*** |
| Medium (2.5-5) | 25 | 32 | ***28.0*** |
| Large (above 5) | 25 | 38 | ***52.0*** |
| **Total** | **24** | **34** | **41.7** |

***Sources***: Compiled from Questionnaires; *A bag contains 75 kg of paddy.

**4.2.6. IMPACT ON INCOME LEVEL**

Irrigation facilities, change in cropping patterns and increase in yield rate eventually increase the income of the borrowers.

**4.2.6.1. INCOME PER BORROWER**

It can be concluded from the table 15 that the income per borrower has increased in all cases irrespective of size of holdings and sample group villages. However the growth of medium farmers' income is more than the small and big farmers i.e., 54.9 percent. The growth percentage is less in case of large farmers i.e., 39.5 percent.

**TABLE 15: INCOME PER BORROWER PER ACRE OF DIFFERENT SIZE OF FARMERS DURING PRE-LOAN AND POST-LOAN PERIOD**

| Sizeof cultivators | Income per borrower in Rs. | | Growth in percentage |
|---|---|---|---|
| | Pre-loan period | Post-loan period | |
| Small (0-2.5) | 13,890 | 19,473 | ***40.2*** |
| Medium (2.5-5) | 15,750 | 24,396 | ***54.9*** |
| Large (above 5) | 18,915 | 26,386 | ***39.5*** |
| **Total** | **16,250** | **23,884** | **47.0** |

***Sources***: Compiled from Questionnaires.

**4.2.6.2. INCOME PER ACRE**

There is a significant raise in income per acre of sample beneficiaries.

**TABLE 16: INCOME PER ACRE OF DIFFERENT SIZE OF FARMERS DURING PRE-LOAN AND POST-LOAN PERIOD**

| Sizeof cultivators | Income per Acre in Rs. | | Growth in percentage |
|---|---|---|---|
| | Pre-loan period | Post-loan period | |
| Small (0-2.5) | 6,478 | 10,332 | ***59.5*** |
| Medium (2.5-5) | 7,873 | 10,699 | ***35.9*** |
| Large (above 5) | 8,416 | 11,975 | ***42.3*** |
| **Total** | **7,896** | **11,607** | **47.0** |

***Sources***: Compiled from Questionnaires.

It is clear that the income per acre has increased from Rs. 7,896 to Rs.11,607 at percentage growth of 47 over pre-loan to post- loan period. The percentage growth rate is highest in case of small farmers. The increase in income per acre in all size of the farmers is significant.

## 5. CONCLUSION

By the beginning of 20th century, the GOI recognized the root causes of the indebtedness and poverty of the Indian farmers and started Credit Co-operatives to alleviate the poverty to some extent by relieving the Below Poverty Line (BPL) families from the vicious circle of poverty. Co-operative banks were established on the principle of co-operation. The main function of these banks is to relieve the poor farmers from the clutches of the money lenders and to provide adequate and timely credit at lower rates of interest. Sri Rajnath Singh (2006) called upon the Government to take necessary steps so that farmers may not have to pay more than 6 percent interest on the agricultural loans.

The institutional credit increases the purchasing power of the farmers and perhaps due to this reason there is an increase in the use of modern inputs in their farming procedures. It acts as a moral boost to farmers in increasing the productivity which ultimately improves their overall economic growth. Hence it can be said that agricultural credit and agricultural development goes by hand in hand. The present study clearly enunciated the advantages enjoyed through improved technology with the efforts of the cooperative bank for the beneficiaries in terms of high production, increased net returns and subsidiary incomes. The results further emphasized the need to enlighten the farmers about the superiority and profitability of improved technology through the extensive credit services. By and large the role of Credit Cooperatives is highly impressive and clearly exhibited in the socio-economic development gained by the beneficiaries.

The District Central Co-operative Bank ,Kakinada being a farmer's bank in the district covered all 1327 villages and 54 Revenue Mandals by its wide network of 47 branches and 295 Primary agricultural Cooperative Societies providing services from the last 88 years. The role of the DCCB in the field of mobilization of deposits is highly significant. It collects unutilized savings of the public and mobilizes them in productive channels. The deposit mobilization of the DCCB enables the people of the rural area to recycle their funds particularly in the area of credit deployment. They are providing attractive interest rates on deposits.

In order to study the impact of Co-operative credit on agriculture, the beneficiaries were grouped into three categories depending upon the size of land holdings such as small, medium and large farmers. There was no significant impact of crop loans on large farmers whereas there was a significant impact on small and medium size farmers. When compared to large farmers, the crop loans played a very significant role in providing timely credit and inputs to small and medium farmers. The impact of Co-operative credit was analyzed by the modernization of agricultural process during the pre-loan and post-loan periods. There was an enormous increase in the usage of HYV seeds, modernized inputs, fertilizers and pesticides from pre-loan to post-loan period. The modern process of agriculture increased the yield per acre and also the income per acre which in turn increased the income of the sample borrowers. The farmers of the district were greatly benefited by the credit provision of the DCCB, Kakinada. The farmers have taken loans not only to increase the productivity, but to develop the process of cultivation as a whole.

The present study clearly enunciated the advantages enjoyed through improved technology with the efforts of the bank for the beneficiaries in terms of high production, increased net returns and subsidiary incomes. The results further emphasized the need to enlighten the farmers about the superiority and profitability of improved technology through the extensive credit services. By and large the role of cooperative loan is highly impressive and clearly exhibited in the socio-economic development gained by the beneficiaries. Finally it can be concluded that the cooperative credit has a significant impact on the small and marginal farmers in the district by providing adequate, cheap and timely credit to the farmers.

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# AN ECONOMIC ANALYSIS OF DISORDERS AND MENTAL HEALTH STATUS OF HIGH SCHOOL STUDENTS IN VISAKHAPATNAM DISTRICT

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**ABSTRACT**

*Mental health is about coping and adjusting to the demands of growing up. It does not all happen at one point in time, and appears to result from an interactive process to which we can all contribute, based on the child's environmental, social and cultural context. In this context, the present study attempted to analyse the mental health status of school children in Visakhapatnam District of Andhra Pradesh. The sample of the present study covered 9th and 10th classes belonging to low SES urban and rural schools situated in Visakhapatnam city and Araku Valley of Andhra Pradesh. At the end, the study gave interesting results of differences in mental health status between low SES rural and urban adolescent students of 9th and 10th classes.*

**KEYWORDS**

Severe Depression, Social Dysfunction, Socio Economic Status, Somatic Symptoms and urban adolescents.

## INTRODUCTION

Mental, emotional and behavioral disorders may occur during childhood and adolescence. All can have a serious impact on a child's overall health. Some disorders are more common than others, and conditions range from mild to severe. Mental Health is about maintaining a good level of personal and social functioning. For children and young people, this means getting on the others, both peers and adults, participating in educative and other social activities, and having a positive self-esteem. Often, a child has more than one disorder according to U.S. Department of Health and Human Services, 1999. However, it is important to remember that diagnosis is often complex and mental health problems may exist alongside each other. It is also important to guard against the labelling of children and young people as having a mental illness, especially where difficulties may be seen as part of the difficult task of growing up. Emotional disorders refer to the whole range of emotional problems that are experienced by children. The majority of children are miserable on occasions, and the ability to understand and resolve minor setbacks or difficulties is a central part of a child's psychological development in adolescence, young people who are depressed may appear to be overly irritable.

## MENTAL, EMOTIONAL AND BEHAVIORAL DISORDERS

Young people can have mental, emotional, and behavioral problems that are real, painful, and costly. These problems, often called "disorders," are sources of stress for children and their families, schools and communities. The number of young people and their families who are affected by mental, emotional, and behavioral disorders is significant. It is estimated that as many as one in five children and adolescents may have a mental health disorder that can be identified and require treatment. Mental health disorders in children and adolescents are caused by biology, environment, or a combination of the two. Examples of biological factors are genetics, chemical imbalances in the body, and damage to the central nervous system, such as a head injury. Many environmental factors also can affect mental health, including exposure to violence, extreme stress, and the loss of an important person. Families and communities, working together, can help children and adolescents with mental disorders. A broad range of services is often necessary to meet the needs of these young people and their families.

## BIPOLAR DISORDER

Children and adolescents who demonstrate exaggerated mood swings that range from extreme highs (excitedness or manic phases) to extreme lows (depression) may have bipolar disorder (sometimes called manic depression). Periods of moderate mood occur in between the extreme highs and lows. During manic phases, children or adolescents may talk nonstop, need very little sleep, and show unusually poor judgment. At the low end of the mood swing, children experience severe depression. Bipolar mood swings can recur throughout life. Adults with bipolar disorder (about one in 100) often experienced their first symptoms during their teenage years (National Institutes of Health, 2001).

## ATTENTION-DEFICIT/HYPERACTIVITY DISORDER

Young people with attention-deficit/hyperactivity disorder are unable to focus their attention and are often impulsive and easily distracted. Attention-deficit/hyperactivity disorder occurs in up to five of every 100 children. Most children with this disorder have great difficulty remaining still, taking turns and keeping quiet. Symptoms must be evident in at least two settings, such as home and school, in order for attention hyperactivity disorder to be diagnosed.

## CONDUCT DISORDER

Young people with conduct disorder usually have little concern for others and repeatedly violate the basic rights of others and the rules of society. Conduct disorder causes children and adolescents to act out their feelings or impulses in destructive ways. The offenses these children and adolescents commit often grow more serious over time. Such offenses may include lying, theft, aggression, truancy, the setting of fires, and vandalism Current research has yielded varying estimates of the number of young people with this disorder, ranging from one to four of every 100 children 9 to 17 years of age (U.S. Department of Health and Human Services, 1999).

## EATING DISORDERS

Children or adolescents who are intensely afraid of gaining weight and do not believe that they are underweight may have eating disorders. Eating disorders can be life threatening. Young people with anorexia nervosa, for example, have difficulty maintaining a minimum healthy body weight. Anorexia affects one in every 100 to 200 adolescent girls and a much smaller number of boys (National Institutes of Health, 1999). Youngsters with bulimia nervosa feel compelled to binge (eat huge amounts of food in one sitting). After a binge, in order to prevent weight gain, they rid their bodies of the food by vomiting, abusing laxatives, taking enemas, or exercising obsessively. Reported rates of bulimia vary from one to three of every 100 young people (National Institutes of Health, 1999).

## TREATMENT, SUPPORT SERVICES, AND RESEARCH: SOURCES OF HOPE

Now, more than ever before, there is hope for young people with mental, emotional, and behavioral disorders. Most of the symptoms and distress associated with childhood and adolescent mental, emotional, and behavioural disorders can be alleviated with timely and appropriate treatment and supports. In addition, researchers are working to gain new scientific insights that will lead to better treatments and cures for mental, emotional, and behavioral disorders. Innovative

studies also are exploring new ways of delivering services to prevent and treat these disorders. Research efforts are expected to lead to more effective use of existing treatments, so children and their families can live happier, healthier, and more fulfilling lives.

## GENERALISED ANXIETY DISORDER

Generalised anxiety disorder is 'generalised' in the sense that there is often no focus but an ongoing dread; a fear that something bad is going to happen. The child begins to feel 'out of control' and starts to exhibit a number of physical problems such as stomach aches, headaches and problems with sleep. Relationships are affected and schooling may be interrupted.

## PHOBIAS

A phobia is a kind of anxiety disorder that involves a strong and excessive desire to avoid an object, person or situation that in itself presents no actual danger. In this sense, phobias are irrational and sometimes difficult to comprehend. They become a problem when they prevent a person from functioning normally and maintaining normal relationships. Phobias are common in children and young people.

## SEPARATION ANXIETY

While it is normal for a young child to be upset when left by his or her primary caregiver, this anxiety in older childhood or adolescence may indicate that something is wrong. Separation anxiety can return when a young person experiences change, such as that caused by the illness of a parent, changing school, the divorce or death of a parent, or moving house. Symptoms include excessive crying when a parent leaves, fear that harm may come to the parent or that they may not return problems with sleep and refusal to go to or stay at school. Separation anxiety is distressing for the parent as well as the child.

## ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)

ADHD affects about two per cent of children of school age - mainly boys. Young people with ADHD become bored and distracted easily, and may have difficulty playing with other children. They are often disorganised, have difficulty listening for long periods and are easily distracted by other children or external stimuli. They may have difficulty taking turns when playing or in the classroom and engage in risky activities. When frustrated they may express anger in aggressive ways; for example, slamming and kicking doors or shouting. It is not hard to see why ADHD is directly associated with school failure, exclusion and poor future prospects.

## AUTISM AND ASPERGER'S SYNDROME

Autism is a lifelong developmental disorder (not a mental illness) that affects a young person's ability to relate to others. The main difficulties experienced by a young person with autism are known as the 'triad of impairments', which include difficulties with communication, social interaction and 'social imagination', which, among other difficulties, affects a young person's ability to read the emotions of others, predict social behaviour; understand the concept of danger and engage in imaginative play. The term 'autism' covers a spectrum of disorders, including Asperger's syndrome. People with Asperger's syndrome may have difficulties in social relationships and communicating, and limitations in social imagination and creative play.

## BIPOLAR DISORDER

Bipolar disorder (which used to be known as manic depression) is a serious illness characterised by abnormal shifts in mood. It rarely occurs before late adolescence and can be difficult to diagnose. Manic symptoms include elevated mood, inflated self-esteem, decreased need for sleep, hyperactivity, shortened attention span, and ideas and thoughts that are out of control; feelings of euphoria are disproportionate to events in the young person's life. Depressive periods are associated with deep sadness and unhappiness, a loss of interest, inactivity, irritability and sometimes a preoccupation with death and dying.

## DEPRESSION

Depression is characterised by ongoing sadness, irritability and feelings of anxiety, guilt and a sense of worthlessness. It is deeper and more persistent than feeling low. If left untreated, depression can have serious implications for a young person and their family. School performance is likely to be adversely affected as the young person loses motivation and energy and has difficulty concentrating. Young people who are depressed find it hard to establish and maintain friendships and they may turn to alcohol and drugs as a means of coping. Eating habits are often affected, with the young person either over- or under-eating. Sleep patterns are also likely to be affected. Sometimes the child's depression manifests itself as anger, violence or rage. Depression in young people is treatable, especially where there is early diagnosis and treatment and support from family and friends.

## OBSESSIVE-COMPULSIVE DISORDER (OCD)

People with OCD are disturbed by recurring thoughts (obsessions) or a need to engage in repetitive and ritualised behaviours (compulsions). OCD may take the form of excessive hand washing, repeated checking, touching, hoarding and collecting, counting, and/or a need for symmetry and order. Carrying out compulsive acts offers only temporary relief, however, and the child may become consumed by fears about dirt and contamination by germs, death, illness, a lack of order, or the belief that something bad may happen if they do not perform these acts. OCD can cause major difficulties for a child and the adults in their world.

## SCHIZOPHRENIA

Schizophrenia is a serious, complex and often disabling mental health problem. Although it is rare in young people, some children exhibit signs at an early age. The symptoms of schizophrenia take the same form in young people as in adults. These include unnatural suspicions and fear of other people (paranoia); difficulty distinguishing what is real from fantasy, which may include hearing voices (hallucinations); and false beliefs, e.g. that they have been visited by aliens (delusions). Young people with schizophrenia perceive the world differently from others; they are withdrawn, have thought disorders and are sometimes devoid of emotion.

## SELF-HARM

Self-harm (also referred to as self-injury) often involves cutting with blades, glass or any object with a sharp edge. Injury may also be inflicted by rubbing, burning, scratching and swallowing objects, pinching or picking at the skin. Overdosing and misusing drugs may also be regarded as forms of self-harm. Self-harm is most often an expression of deep-rooted emotional problems that a young person has difficulty expressing in less harmful ways. It can be seen as a form of communication and has been described as an 'inner scream'. Paradoxically, self-harm is often a means of coping with difficult feelings and, some argue, lessens the desire to attempt suicide. In this sense, it represents restraint, and may therefore be seen as a survival strategy. Nevertheless, self-harm is distressing for families, teachers and friends who see the results and feel helpless.

## SUICIDE

Suicide is the third main cause of death in young people after illness and accidents. Attempted suicide is often referred to as Para suicide. Girls attempt suicide more often than boys, though young men's attempts are more likely to be fatal. Suicide is linked with depression, loss, failure and abuse, when often a young person cannot see another way out of their despair. Fortunately, statistics show that the suicide rate in young people is beginning to decrease, though it is

certain that many young people consider suicide as an option at some point. Young people who attempt suicide often give indications to those around them that something is seriously wrong and go ahead with extreme step.

## SLEEP PROBLEMS

It is not uncommon for children and young people to experience difficulties with sleeping, which may take the form of nightmares, night terrors or sleepwalking. As with all sleep problems, such difficulties do not necessarily indicate an underlying problem, and sleep disturbance can be caused by a television programme or a scary story. Sleep problems can have biological causes and may result from poor drinking and eating habits. However, if a problem continues, especially in an older child or teenager, there may be an underlying emotional cause.

## METHODOLOGY

The present study aims to examine the differences between low SES urban and rural school Adolescent Students of Visakhapatnam district, regarding to their Mental Health problems. The sample of the present study consists of 193 students (101 students, i.e., 52.33% of them belonging to low SES urban high school adolescents and 92 i.e., 47.66% studying 9th and 10th classes) belonging to low SES urban and rural schools situated in Visakhapatnam city and Araku Valley of Andhra Pradesh. The age range of the sample is from 13 to 16 years. I felt that there is a need to conduct study of Mental Health Status of Low SES Urban and Rural Schools adolescent students. We are selected some individual variables to study Mental Health among Low SES urban and low SES rural Telugu medium school adolescents to know the comparison of different individual variables.

**CULTURALLY RELEVANT BELL ADJUSTMENT INVENTORY (CRBAI)**

Culturally Relevant Bell Adjustment Inventory (CRBAI) is an adaptation of the student form of Bell Adjustment inventory (1962). Norms are provided for each of the five adjustment dimensions and for each of the 25 factorially derived sub factors. As followed by Bell (1963), percentile norms method was used to develop norms and I obtained scores based on their percentile ranks are categorised as Excellent, Good, Average, Poor and Unsatisfactory. Apart from measuring these dimensions DCRBAI also measures a total of 25 sub factors derived by factor analysis.

**GENERAL HEALTH QUESTIONNAIRE**

The GHQ is a 28 item self-administered questionnaire used for the detection of psychiatric distress related to general medical illness. It requires respondents to indicate if their current "state" differs from his or her usual state, thereby assessing change in characteristics and not lifelong personality characteristics. The tool has been used successfully in community settings and non-psychiatric clinical settings in many countries; the GHQ 28 is one of four versions of the GHQ. The original version of the GHQ has 60 items and the three shorter versions have 30, 28, and 12 items. The GHQ-28 yields four subscales including, somatic, anxiety, social dysfunction, and depression. Each subscale contains 7 items in the GHQ 28 and it was designed from the results of a principal component analysis based on the original GHQ.

**PROCEDURE**

First, permission was obtained from the District Education Officer (D.E.O) to collect data from Government schools and also obtained permission from the school principals/ head master. Along with the associates who were trained to administer the Biographical information sheet, CRBAI and GHQ administered the version of these forms in their class rooms during the school hours. Students were assured of the confidentiality of their answers, while administering the checklist, first the students were asked to fill in the demographic data sheet. All the instructions were clearly explained by the administrators. The administrators read aloud the items while the students are asked to read it silently and complete them. No time limit was set for completing the checklist but usually it took 30 to 40 minutes to complete the form.

## DATA ANALYSIS

The results of the anlysed data are presented in the following tables. The mean scores and standard deviation are calculated by applying t-test for the dimensions of CRBAI sub scale.

**TABLE 1: MEAN DIFFERENCE BETWEEN LOW SES URBAN SCHOOL ADOLESCENTS AND LOW SES RURAL SCHOOL ADOLESCENTS ON GENERAL HEALTH QUESTIONNAIRE SCALE**

| G.H.Q Sub -Scale | Mean/S.D | Low SES Urban School (N=101) | Low SES Rural School (N=92) | t-value |
|---|---|---|---|---|
| Somatic Symptoms | Mean | 1.030 | 1.717 | -3.339** |
| | S.D | 1.195 | 1.613 | |
| Anxiety and Insomnia | Mean | 1.337 | 1.707 | -1.534 |
| | S.D | 1.545 | 1.782 | |
| Social Dysfunction | Mean | 1.238 | 1.620 | -1.545** |
| | S.D | 1.686 | 1.741 | |
| Severe Depression | Mean | 1.426 | 1.783 | -2.026** |
| | S.D | 1.043 | 1.365 | |

Note: *Significant at 5%;**Significant at 1%level

Table 1 has explained that mean scores of rural high school adolescents are more on the dimensions of somatic symptoms, social dysfunction and severe depression symptoms when compared to low SES urban school adolescents, are highly significant at 1% level. This shows that significant difference was observed between low rural and urban adolescent students.

**TABLE 2: MEAN DIFFERENCE OF MALE ADOLESCENTS BETWEEN LOW SES URBAN AND RURAL SCHOOL STUDENTS ON THE GHQ SCALE**

| G.H.Q Sub -Scale | Mean/S.D | Low SES Urban School (N=50) | Low SES Rural School (N=37) | t-value |
|---|---|---|---|---|
| Somatic Symptoms | Mean | 1.26 | 1.818 | -1.614 |
| | S.D | 1.3063 | 1.7454 | |
| Anxiety and Insomnia | Mean | 1.680 | 1.486 | .553 |
| | S.D | 1.731 | 1.520 | |
| Social Dysfunction | Mean | 1.360 | 1.513 | -.491 |
| | S.D | .221 | .176 | |
| Severe Depression | Mean | 1.540 | 1.432 | .463 |
| | S.D | .151 | .175 | |

Note: *Significant at 5%;**Significant at 1%level

Table 2 has revealed that mean difference of male adolescents between low SES urban and rural school students on the GHQ Scale. On all the dimensions of somatic symptoms, anxiety and Insomnia social dysfunction and severe depression symptoms the t-value showed insignificant difference between low rural and urban male adolescent students.

**TABLE 3: MEAN DIFFERENCE OF FEMALE ADOLESCENTS BETWEEN LOW SES URBAN AND RURAL SCHOOL STUDENTS ON THE GHQ SCALE**

| G.H.Q Sub -Scale | Mean/S.D | Low SES Urban School (N=50) | Low SES Rural School (N=37) | t-value |
|---|---|---|---|---|
| Somatic Symptoms | Mean | .8039 | 1.654 | -3.369** |
| | S.D | 1.039 | 1.530 | |
| Anxiety and Insomnia | Mean | 1.000 | 1.854 | -2.707** |
| | S.D | 1.265 | 1.939 | |
| Social Dysfunction | Mean | 1.117 | 1.690 | -1.562 |
| | S.D | 1.807 | 1.970 | |
| Severe Depression | Mean | 1.313 | 2.018 | -2.859** |
| | S.D | 1.009 | 1.497 | |

Note: *Significant at 5%;**Significant at 1%level

Table 3 reveals that mean score of low SES rural school adolescent females on the dimensions of somatic symptoms, Anxiety and Insomnia and Severe Depression are higher than that of the mean scores of the low SES urban adolescent females on GHQ scale and they are significant at 1% level. The t-value for the dimension of Social Dysfunction is insignificant between female adolescents of low SES urban and rural schools. It means rural school adolescent females have higher symptoms of Somatic, anxiety and Insomnia, Social dysfunction and severe depression than urban school adolescent female students.

**TABLE 4: MEAN DIFFERENCE BETWEEN LOW SES URBAN AND RURAL SCHOOL ADOLESCENTS OF 9TH CLASS ON THE GHQ SCALE**

| G.H.Q Sub -Scale | Mean/S.D | Low SES Urban School (N=36) | Low SES Rural School (N=48) | t-value |
|---|---|---|---|---|
| Somatic Symptoms | Mean | 1.194 | 1.854 | -2.070* |
| | S.D | 1.283 | 1.637 | |
| Anxiety and Insomnia | Mean | 1.638 | 2.041 | -1.013 |
| | S.D | 1.726 | 1.901 | |
| Social Dysfunction | Mean | 1.417 | 1.896 | -1.259 |
| | S.D | 1.610 | 1.870 | |
| Severe Depression | Mean | 1.472 | 2.062 | -1.951 |
| | S.D | 1.298 | 1.521 | |

Note: *Significant at 5%;**Significant at 1%level

The analysis in Table 4 reveals that the mean scores of 9th class adolescent students of the rural school are higher than that of low SES urban school. It indicates that the dimension of Somatic Symptom on the GHQ scale is significant at 5% level and reveals that low SES rural school adolescents of 9th class have more problems than low SES urban school adolescents. No significant difference was found on the dimensions of anxiety and Insomnia, Social Dysfunction and severe depression.

**TABLE 5: MEAN DIFFERENCE BETWEEN LOW SES URBAN AND RURAL SCHOOL ADOLESCENTS OF 10TH CLASS ON THE GHQ SCALE**

| G.H.Q Sub -Scale | Mean/S.D | Low SES Urban School (N=65) | Low SES Rural School (N=44) | t-value |
|---|---|---|---|---|
| Somatic Symptoms | Mean | .938 | 1.568 | -2.260* |
| | S.D | 1.144 | 1.590 | |
| Anxiety and Insomnia | Mean | 1.169 | 1.341 | -.579 |
| | S.D | 1.420 | 1.584 | |
| Social Dysfunction | Mean | 1.138 | 1.318 | -.566 |
| | S.D | 1.731 | 1.551 | |
| Severe Depression | Mean | 1.400 | 1.477 | -.387 |
| | S.D | .880 | 1.109 | |

Note: *Significant at 5%;**Significant at 1%level

The analysis in Table 5 reveals that the mean scores of 10th class adolescent students of the rural schools are higher than that of low SES urban schools. On the dimension of Somatic Symptoms the mean score of low SES rural adolescent students is higher than that of low SES urban school adolescents, and it is significant at 5% level. It shows that low SES rural school adolescents have higher somatic problems than the low SES urban school adolescents. No significant difference was found on the dimensions of anxiety /Insomnia, Social Dysfunction and severe depression. An examination shows that the 10th class adolescent students of low SES rural school have higher somatic symptoms than low SES urban adolescent students.

**TABLE 6: MEAN DIFFERENCE BETWEEN LOW SES URBAN AND RURAL SCHOOL ADOLESCENT STUDENTS LIVING IN NUCLEAR FAMILY ON GHQ SCALE**

| G.H.Q Sub -Scale | Mean/S.D | Low SES Urban School (N=90) | Low SES Rural School (N=75) | t-value |
|---|---|---|---|---|
| Somatic Symptoms | Mean | .989 | 1.560 | -2.620** |
| | S.D | 1.175 | 1.553 | |
| Anxiety and Insomnia | Mean | 1.267 | 1.56 | -1.178 |
| | S.D | 1.527 | 1.646 | |
| Social Dysfunction | Mean | 1.222 | 1.587 | -1.322 |
| | S.D | 1.573 | 1.771 | |
| Severe Depression | Mean | 1.422 | 1.733 | -1.715 |
| | S.D | 1.080 | 1.222 | |

Note: *Significant at 5%;**Significant at 1%level

The analysis in Table 6 reveals that adolescent students of low SES urban and rural schools living in nuclear family have highly significant Psychological variance on the dimension of Somatic Symptoms on the GHQ scale at 1% level. No significant difference was found on the dimensions of anxiety and Insomnia, severe depression and Social dysfunction. An examination of the analysis shows that adolescent students of rural school living in nuclear family have higher Somatic Symptoms than adolescent students studying in urban school.

**TABLE 7: MEAN DIFFERENCE BETWEEN LOW SES URBAN AND RURAL SCHOOL ADOLESCENT STUDENTS LIVING IN JOINT FAMILY ON GHQ SCALE**

| G.H.Q Sub -Scale | Mean/S.D | Low SES Urban School (N=10) | Low SES Rural School (N=17) | t-value |
|---|---|---|---|---|
| Somatic Symptoms | Mean | 1.300 | 2.411 | -1.808 |
| | S.D | 1.418 | 1.734 | |
| Anxiety and Insomnia | Mean | 1.800 | 2.353 | -.727 |
| | S.D | 1.686 | 2.234 | |
| Social Dysfunction | Mean | 1.300 | 1.764 | -.893 |
| | S.D | 1.059 | 1.640 | |
| Severe Depression | Mean | 1.400 | 2.000 | -1.172 |
| | S.D | .699 | 1.903 | |

Note: *Significant at 5%;**Significant at 1%level

Table 7 presents the mean difference between low SES urban and rural school adolescent students living in joint family on GHQ scale. It reveals that no significant difference was found between the adolescent students living in joint family of low SES urban and rural schools on all sub scales of GHQ scale

**TABLE 8: MEAN DIFFERENCE BETWEEN MALE AND FEMALE OF LOW SES URBAN ADOLESCENT STUDENTS ON GHQ SCALE**

| G.H.Q scale Dimensions | Mean/S.D | Male (N=50) | Female (N=51) | t-value |
|---|---|---|---|---|
| Somatic Symptoms | Mean | 1.260 | 0.804 | 1.939 |
| | S.D | 1.306 | 1.040 | |
| Anxiety and Insomnia | Mean | 1.680 | 1.000 | 2.250* |
| | S.D | 1.731 | 1.265 | |
| Social Dysfunction | Mean | 1.360 | 1.118 | 0.772 |
| | S.D | 1.562 | 1.807 | |
| Severe Depression | Mean | 1.540 | 1.314 | 1.091 |
| | S.D | 1.073 | 1.010 | |

Note: *Significant at 5%;**Significant at 1%level

Table 8 reveals that no significant mean difference was found between males and females on the subscales of Somatic Symptoms, Social dysfunction and severe depression of GHQ scale. However, the dimension of anxiety/insomnia is significant at 5% level which indicates that male adolescents are experiencing more Anxiety/Insomnia symptoms than female adolescents studying in urban school in Visakhapatnam.

**TABLE 9: MEAN DIFFERENCE BETWEEN $9^{TH}$ AND $10^{TH}$ CLASS STUDENTS OF THE LOW SES URBAN SCHOOLS ON GHQ SCALE**

| G.H.Q scale | Mean/S.D | $9^{th}$ Class (N=36) | $10^{th}$ Class (N=65) | t-value |
|---|---|---|---|---|
| Somatic Symptoms | Mean | 1.194 | 0.939 | 0.997 |
| | S.D | 1.283 | 1.144 | |
| Anxiety and Insomnia | Mean | 1.639 | 1.169 | .392 |
| | S.D | 1.726 | 1.420 | |
| Social Dysfunction | Mean | 1.417 | 1.139 | .809 |
| | S.D | 1.610 | 1.731 | |
| Severe Depression | Mean | 1.472 | 1.400 | .298 |
| | S.D | 1.298 | 0.880 | |

Note: *Significant at 5%;**Significant at 1%level

The analysis in Table 9 reveal that no significant mean difference was found between $9^{th}$ and $10^{th}$ class adolescent students of the low SES urban school on all dimensions of somatic symptoms, anxiety and insomnia, social dysfunction and severe depression on the GHQ questionnaire. The high mean scores of $9^{th}$ class students than $10^{th}$ class students on all these dimensions has explained that the $9^{th}$ class students have significant problems than $10^{th}$ class students.

## CONCLUSION

Families with low socioeconomic status often lack the financial, social, and educational supports that characterize families with high socioeconomic status. Poor families also may have inadequate or limited access to community resources that promote and support children's development and school readiness. Parents may have inadequate skills for such activities as reading to and with their children, and they may lack information about childhood immunisations and nutrition. Morbidity was significantly higher in children hailing from nuclear families and among children who had either failed or those who had scored highest in the class.

Rural school adolescents belonging to low SES have more Somatic symptoms, social dysfunctions and severe depression when compared to low SES urban school adolescents. Low SES rural school adolescent females have significantly higher adjustment problems like Home, Health, Emotional, Hostility and Submissiveness problems than the low SES urban school adolescent females. Further, low SES rural school adolescent females have higher and significant symptoms of somatic symptoms, anxiety and severe depression than low SES urban school adolescent female students. It has been observed that low SES Rural adolescents of $9^{th}$ class have significantly higher somatic symptoms than the Low SES Urban school adolescents. Mental health problems of school children need to be addressed by the school health services.

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# SIMULATION BASED STUDY AND INVESTIGATING THE THROUGHPUT OF WSN BY GRID BASED PATH PLANNING

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## ABSTRACT

*Wireless networks are networks which provide users with connectivity regardless of their actual physical location. Wireless networks are networks that do not involve cables. It is a technique that saves the cost of cables for networking and helps entrepreneurs and telecommunication networks in specific premises in their installations. The transmission system is usually implemented and administrated via radio waves where the implementation takes place at physical level. In the wireless networks there are two infrastructures used for communication in the networking environment that was fixed infrastructure and Ad hoc networks. In the fixed infrastructure the node has no mobility but in the second case shows the mobility. This paper uses grid based network (use Ad hoc type) for providing better path planning and updated messages to and fro in order to achieved the throughput of the WSNs. we are using an AODV protocol that employing in the sensor nodes networks and worked on both heterogeneous and homogenous networks. The aim of this paper to modeled the grid sensor networks. The main challenge of this paper is to work on the IEEE 802.15 standard and provides a packet forwarding approach from source node to destination node. The final direction of this paper has to avoid broadcasting problem by using effectively path planning approach.*

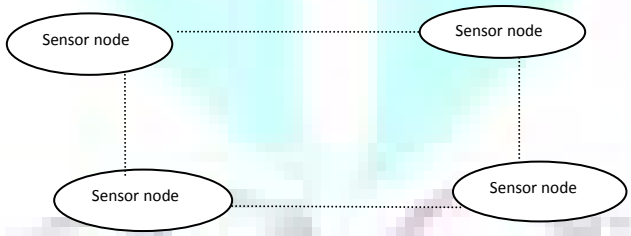
## KEYWORDS

grid based path planning, wireless networks.

## 1. WSN

A wireless sensor network is a network which consists of a number of sensor nodes that are wirelessly connected to each other as shown in fig.1. This small, low-cost, low-power, multifunctional sensor nodes can communicate in short distances. Each sensor node consists of sensing, data processing, and communication components. A large number of these sensor nodes collaborate to form wireless sensor network. A WSN usually consists of tens to thousands of such nodes that communicate through wireless channels for information sharing and cooperative processing. To ensure scalability and to increase the efficiency of the network operation, sensor nodes are often grouped into clusters. A sensor node is battery powered and is equipped with integrated sensors, data processing capabilities, and short-range radio communications.

**FIG.1: COMMUNICATING SENSOR NODES**




### 1.1 SENSOR NODES

Wireless sensor networks (WSNs) consist of a large number of tiny, cheap, computational, and energy-constrained sensor nodes that are deployed in network service area. Due to wireless nature, it is easy to add more sensor nodes or move deployed nodes for better coverage and reach.

## 2. AODV PROTOCOL

In reactive routing protocols the routes are created only when source wants to send data to destination whereas proactive routing protocols are table driven. Being a reactive routing protocol AODV uses traditional routing tables, one entry per destination and sequence numbers are used to determine whether routing information is up-to-date and to prevent routing loops.

The maintenance of time-based states is an important feature of AODV which means that a routing entry which is not recently used is expired. The neighbors are notified in case of route breakage. The discovery of the route from source to destination is based on query and reply cycles and intermediate nodes store the route information in the form of route table entries along the route. Control messages used for the discovery and breakage of route are as follows:

- Route Request Message (RREQ)
- Route Reply Message (RREP)
- Route Error Message (RERR)
- HELLO Messages.
- Route Request (RREQ)

A route request packet is flooded through the network when a route is not available for the destination from source. The parameters are contained in the route request packet are presented in the following table:

**TABLE1.1 ROUTE REQUEST PARAMETERS**

| Source Address | Destination Address | Destination Sequence no. | Hop Count | Life Time |
|---|---|---|---|---|

A RREQ is identified by the pair source address and request ID, each time when the source node sends a new RREQ and the request ID is incremented. After receiving of request message, each node checks the request ID and source address pair. The new RREQ is discarded if there is already RREQ packet with same pair of parameters.

A node that has no route entry for the destination, it rebroadcasts the RREQ with incremented hop count parameter.

A route reply (RREP) message is generated and sent back to source if a node has route with sequence number greater than or equal to that of RREQ.

- Route Reply (RREP)

On having a valid route to the destination or if the node is destination, a RREP message is sent to the source by the node. The following parameters are contained in the route reply message:

**TABLE1.2.ROUTE REPLY PARAMETERS**

| Source Address | Source ID | Source Sequence no. | Destination Address | Destination Sequence no. | Hop Count |
|---|---|---|---|---|---|

- Route Error Message (RERR)

The neighborhood nodes are monitored. When a route that is active is lost, the neighborhood nodes are notified by route error message (RERR) on both sides of link.

## 3. PROBLEM FORMULATION

In this research work, created a WSN grid network where graph G(V,E) , in which V is the set of all the nodes in the network and E consists of edges presented in the graph. An edge e = (u,v) , e $\in$ E exists if the Euclidean distance between node u and v is smaller than r , where r is the radius of the coverage of nodes and assumed all links in the graph is bidirectional, and the graph is in a connected state. Given a node i , time t is recorded since it receives the broadcasted message for the first time, and t = 0 . The majority of the previous work on routing techniques in MANETs has focused on homogenous MANETs. In a Wireless Sensor Network (WSN for short), individual sensor nodes, or sensors, are constrained in energy, computing, and communication capabilities. Typically, sensors are mass-produced anonymous commodity devices that are initially unaware of their location. Once deployed, sensors should self-organize into a network that works unattended.

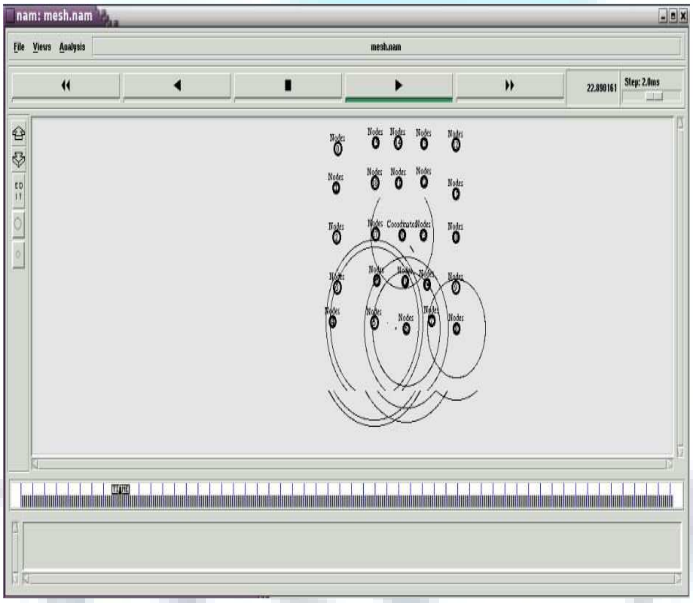
## 4. SIMULATION RESULTS

In this section, we present simulation results and investigating the Throughput in coming sections. The throughput measures the data packets (in bytes) delivered to a source node to the destination node.

### 4.1 SIMULATION SETUP

The nodes are uniformly and randomly deployed in the simulator as shown in fig.2. In addition, they form a connected stationary network. We simulated a network of 25 static nodes placed randomly in a 700 m · 700 m area. We used one coordinator node that senses the other nodes during transmission of packets. This coordinator further helps to link up the node if the destination can't received the packets due to link failures. The radio propagation range was 250 m and the channel capacity was 2 Mbps (the data rate used for broadcast in 802.11 MAC protocol). The simulation duration was 150 s. The Two Ray propagation model was used.

**FIG.2: WSN GRID BASED SCENARIO**




### 4.2 RESULTS

To verify the effectiveness of the throughput of WSNs, the TCP metrics for unicast is observed in our simulation study, we performed experiments on a 25-node wireless mesh network scenario as shown in above figure. Our implementation is based on the AODV specification.We implemented AODV protocol in the WSN network and enhanced it with the different link-quality. The AODV at each node can deliver data packets for all unicast addresses to the applications running on the node. The simulation graphs as shown in subsections 4.2.1. NS2 network simulator is used to evaluate the performance of grid based WSN. Simulation parameters are given in the following table:

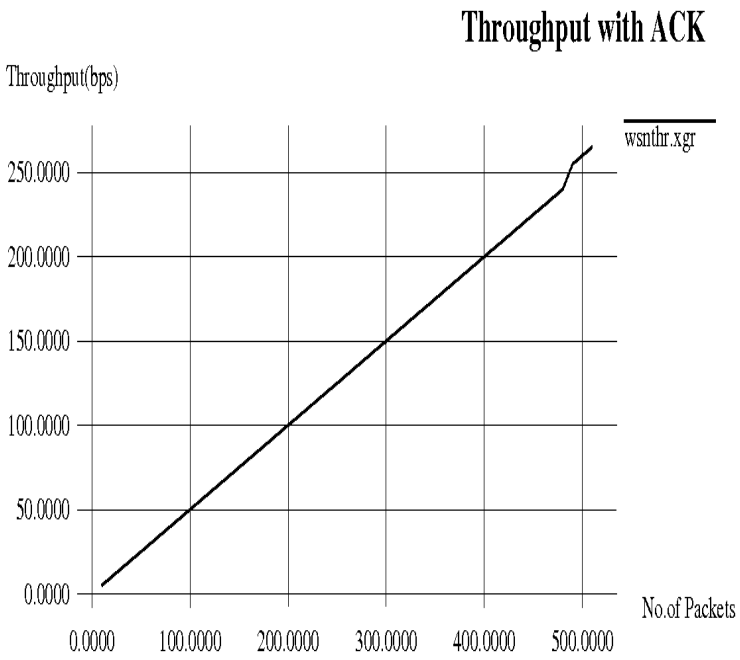
**TABLE 4.1: PARAMETER USED IN SIMULATION**

| Parameter | Value |
|---|---|
| Area | 1000*1000 meter |
| No. of Nodes | 25 |
| Radio Type | 802.15 |
| Data Rate | 2 Mbps |
| Data Link Layer Protocol | 802.15 MAC |
| No. of Channels | 01 |
| Antenna Model | Omni directional |
| Simulation Time | 150s |
| Routing Protocol | AODV |

#### 4.2.1 THROUGHPUT OF WSN

The Throughput of a packets send by the sender node to the destination node that was calculated by the number of packets sent and received with observed the throughput with Kbps. The total number of active nodes was 25 that send and received the packets and observed that the packet sending ratio is 95%. The throughput that was achieved from this paper was better on other WSN published paper.

**FIG.3: THROUGHPUT OF WSN**




We performed the test on a 10-node balanced grid based network on the test bed, with the topology as shown in Figure 2.it shows that properly choosing the grid based sensors will improve the performance of the overall throughput of the network. We observed from the graph the arrangement of the sensors nodes achieving higher throughput and better than other paper because of we use a coordinator that link up the connection when it sees that link was down/broke. From the figure 3 it achieves more than 20 kbps throughput for transmitting 500 packets and resultant achieving higher throughput. The performance always decreased when the contention of the channel is affected by many factors such as the error rate, traffic model, and the type of connection (TCP or UDP).

## 5. CONCLUSION AND FUTURE WORK

In this paper, we have studied the link-quality routing metrics for high-throughput in grid based mesh networks. We first discussed the unicasting routing and how data packets are transmitted at the link layer, and then showed accordingly how to adapt routing metrics for unicast routing to be used in WSNs. We studied the performance of different metrics via extensive simulation and experiments on a mesh network test bed, using ADOV as a representative unicast protocol.

It should also be noted that the future directions of work must also be carried to develop highly scalable and large applications which might require an additional component i.e.an coordinator or router between the different clusters to scale up the application.

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# THE DETERMINANTS OF LEVERAGE OF THE LISTED COMPANIES IN SRI LANKA: AN EMPIRICAL STUDY

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**ABSTRACT**

*The role of financial leverage in magnifying the return of the shareholder is based on the assumptions that the fixed charges fund. A company increases its leverage because it can invest in business operations without increasing its equity. Leverage is not always bad, however it can increase the shareholder's return on their investment and often there are tax advantages associated with borrowing. The purpose of present study is to investigate the determinants of leverage (or capital structure) decision of Sri Lankan firms based on a panel data set over a period of five years from 2007-2011 comprising of 60 companies.This study examines the impact of five firm specific factors – firm size, firm growth rate, profitability, and asset tangibility, on the leverage decision of listed companies in Sri Lanka. The results show that financial leverage of Sri Lankan firms is influenced by firm size, firm growth rate and profitability .This study contributes to the literature on the factors that influence financial leverage of the firm.*

**KEYWORDS**

financial leverage, firm size, firm growth rate, profitability, and asset tangibility.

## BACKGROUND OF THE STUDY

A company can finance its investments by debt or Equity**.** The modern theory of capital structure began with the landmark paper of Modigliani and Miller published in 1958. In this paper, they argued the irrelevance of capital structure to the value of firm under certain restrictive assumptions – no transaction costs, the equality of lending and borrowing rates, no bankruptcy costs, and absence of corporate taxes. The theoretical and empirical literature developed over a period of time suggests that, once the restrictive assumptions are relaxed, firms are able to change their value by altering their leverage or debt-equity ratio. The research in the capital structure field is dominated by two principal theories (1) the trade-off theory and (2) pecking-order theory. The trade-off theory of capital structure is established around the concept of target capital structure that balances between the benefit of debt-tax shields and cost (excess risk taking by shareholders) of debt financing. In contrast, the pecking-order theory, developed by Myers and Majluf (1984), suggests that managers do not seek to maintain a specific capital structure. Firms prefer to issue debt rather than equity if internally generated cash flows are not sufficient; external equity is offered only as a last resort when company runs out of its debt capacity as informational asymmetry between managers and investors make it costly to raise funds through equity. Asymmetric information term indicates that managers and other insiders have more information about the firms' prospects and risks than do outside investors. Investors, realizing this, judge that managers are more likely to offer equity when shares are over-valued. Due to this, investors price equity issues at a discount. Thus, according to pecking-order theory, in general it will be the cheapest for a firm to use from the least to the most expensive source of finance in the following order: internal financing, bank debt, bond market debt, convertible bonds, preference capital, and common equity (Myers, 1984). Much of the empirical research on the determinants of leverage has been directed largely towards companies listed in developed companies. There is very few published work on determinants of leverage in Sri Lankan companies and this paper intends to contribute further evidence to this debatable topics. So The purpose of present study is to investigate the determinants of leverage (or capital structure) decision of Sri Lankan firms based on a panel data set over a period of five years from 2007-2011 comprising of 60 companies.

## LITERATURE REVIEW

Colombage (2005) empirically investigates the capital structure of Sri Lankan companies and find the financing trend of Sri Lankan firms confirms the pecking order hypothesis to a greater extent that predictions of information asymmetry and static tradeoff consideration.

Champika and Gunaratrne (found that Sri Lankan firms demonstrated a market timing behavior in adjusting their capital structure. They also revealed that profitable firms are particularly very much reliant on internal financing.

Samarakoon (1999) examines the use and the determinants of leverage in a cross- section of quoted companies in Sri Lanka using a sample of firms listed in the Colombo stock exchange. The results indicate that the use of long term debt is relatively low. The tangibility and growth opportunities are not related to leverage.

At the outset, it is worth reviewing the previous studies on Sri Lankan companies that are related to leverage and capital structure. Samarakoon(1997) investigated the ability of market beta, book-to-market equity.

Senerathne (1998) tested the applicability of pecking order theory of financing in Sri Lanka. The results suggested that Sri Lankan companies follow the pecking order partially.

Diamond (1989), Bender *et al.* (2005), Campbell and Kracaw (1990) introduced the concept that management, which is actually working for the best interest of shareholders, may wish to limit the asset substitution. Nevertheless, practically, optimal leverage instability choice has never been considered through the use of derivatives in which it can be controlled continuously. Similarly, Myer's (1984), worked on role of dividend policy and underinvestment issue in enabling a firm. Fan and Sundaresan (1997); Zweibel (1996) and Paul (1997) all have considered the levered firm and optimal dynamic dividend policies for them. From all these recent papers, Zweibel (1996) have addressed the agency problem of dividends. Many papers have focused on financial policy. Until today, there are three major classes of models, the agency, the trade-off theory and the pecking order hypotheses. The agency hypothesis states that firms also face the cost of financial distress due to divergence in the utility function of stakeholders and informational irregularities but in this situation, the level of debt becomes a governance device for a firm. Similarly, the trade-off hypothesis says that the optimal financing policy consists of adjustment towards the target debt level. The target leverage ratio balances the marginal financial distress cost of debt with marginal tax benefit. Pecking order hypothesis talked about the firm value, which is affected by informational irregularity bias investment policy. The unfavorable selection discount leads to rejecting the positive NPV projects. The optimal financial policy in a result, firstly, tires out the least sensitive financing source, i.e. internal financing, then debt and as a last resort, equity. Although many variables affect the capital structure systematically, but they are also failed to distinguish between the above three hypotheses.

Bender *et al.* (2005) indicated that in the understanding process of financial policy, neither a simple pecking order nor a simple trade-off model is adequate; they also highlighted the timing issues and agency problem impacts upon capital structure. For the debt ratios, they figure out that firms limit themselves only to an upper barrier. As per pecking order theory also, firms prefer to issue equity or repayment of debts rather than to increase the debts level. Debt- equity choice is affected by both market and operating performance since debt limit the managers for cash payout and because of this reason during a lot of opportunity windows, equity may become cheap.

## PROBLEM STATEMENT

Most companies use debt to finance operations. By doing the primary motive of a company in using financial leverage is to magnify shareholder's return under favorable economic conditions. The role of financial leverage in magnifying the return of the shareholder is based on the assumptions that the fixed charges fund. A company increases its leverage because it can invest in business operations without increasing its equity. The degree to which an investor or business is utilizing borrowed money companies that are highly leveraged may be at risk of bankruptcy if they are unable to make payments on their debt. They may also be unable to find new lenders in the future. Leverage is not always bad, however it can increase the shareholder's return on their investment and often there are tax advantages associated with borrowing.

There is no exact formula available for the establishing optimal target debt and equity, empirical studies indicate that Size of the company, growth of the company, Non-debt tax shield , profitability and tangibility should be considered when formulating capital structure policy. Does an optimal leverage exist? To what extent the exploratory variables (Size of the company, growth of the company, Non-debt tax shield, profitability and tangibility*)* impact on leverage of listed companies in Sri Lanka. These are the questions to be answered by a researcher.

However most of the research work carried out in developed countries and very little is known about the determinants of leverage of firms in developing economies. Thus this study intends to fill this research gap.

## RESEARCH METHODOLOGY

### THE DATA COLLECTION AND SAMPLING

This study investigates the impact of five firm-specific variables on firms' leverage choice decision. The sample of study contains 60 Sri Lankan companies listed on the Colombo Stock Exchange (CSE) whose published financial information for the period 2007-2011. The panel data analysis is done for observations of five consecutive years starting from 2007-2011. In this way, the sample of the study consists of 300 firm-year observations.

### VARIABLES USED IN THIS STUDY

Literature on the subject matter suggests a number of factors, which may affect firms' financing decision. This study examines the impact of five firm specific factors – firm size, firm growth rate, non-debt tax shields, profitability, and asset tangibility, on the leverage decision of listed companies in Sri Lanka . While dependent variables are leverage ratios such as Debt to Equity ratio and Debt to Total Asset Ratio.

**DEBT TO EQUITY RATIO** is a measure of a company's financial leverage calculated by dividing its total liabilities by stockholders' equity. It indicates what proportion of equity and debt the company is using to finance its assets.

**DEBT TO TOTAL ASSET RATIO:** A measurement representing the percentage of a firm's assets that are financed with loans and financial obligations lasting more than one year.

**Independent variables are defined as f**irm size is measured by taking the natural logarithm of the total assets.

**Growth** is measured as the change in total assets between two consecutive years divided by previous year total assets.

**Non-debt tax shield** (NDTS) is defined as a ratio of total annual depreciation to total assets.

**Profitability** is defined as earnings before interest and taxes scaled by k value of Sales Tangibility is measured as a ratio of net fixed assets divided by total assets.

After careful study of the review of literature, the above conceptual model was developed by the researcher.

## HYPOTHESIS

The hypothesis of the research paper are given below

H1: There is a relationship between size and leverage of Sri Lankan firms.

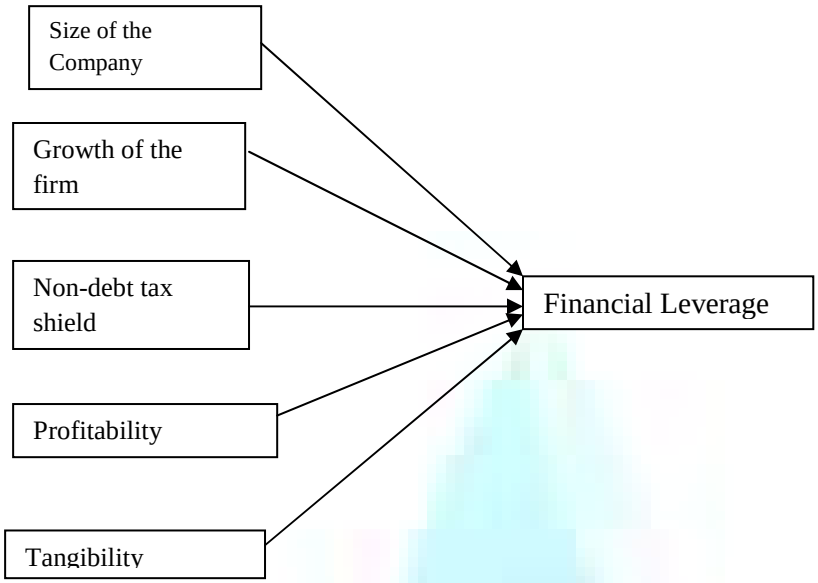
H2: There is a relationship between firm growth rate and leverage of Sri Lankan firms.

H3: There is a relationship between non-debt tax shields and leverage of Sri Lankan firms.

H4: There is a relationship between profitability, and leverage of Sri Lankan firms

H5: There is a relationship between asset tangibility and leverage of Sri Lankan firms.

**FIGURE 1: CONCEPTUAL FRAME WORK**




## STATISTICAL TECHNIQUE USED IN THIS STUDY

This paper uses panel data set over a period of five years between 2007-2011 to investigate the linkage between leverage and the firm specific factors. The fixed effects test is employed to test the hypotheses. The fixed effects regression equation can be expressed as:

**MODEL 01**

***Debt to Equity i*** **t = α i + β1 Size i t+ β2 Growth i t+ β3 NDTS i t+ β4 Profitabilityi t + β5 Tangibility i t + ε i t**

Where i =1, 2, 3,…, 60 for the sample companies

t = 1, 2, 3, 4, 5 (time period).

α is the intercept of the equation

β1, β2, β3, β4, β5 = are the coefficients for the five explanatory variables in the model.

**MODEL 02**

***Long Term Debt Ratio i*** **t = α i + β1 Size i t+ β2 Growth i t+ β3 NDTS i t+ β4 Profitabilityi t + β5 Tangibility i t + ε i t**

Where i =1, 2, 3,…, 60 for the sample companies

t = 1, 2, 3, 4, 5 (time period).

α is the intercept of the equation

β1, β2, β3, β4, β5 = are the coefficients for the five explanatory variables in the model.

## ANALYSIS AND DISCUSSION OF RESULTS

Table 1 summarizes the statistics for the selected variables and leverage measures for the whole sample of Sri Lankan companies.

**TABLE 1: DESCRIPTIVE STATISTICS**

| | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|
| Leverage(Debt/Equity) | 0.43 | 19.43 | 3.2778 | .821 |
| Size | 8 | 11 | 9.16 | 11.31233 |
| Growth | -122.37 | .91 | -2.0680 | 4.35556 |
| Debt /TA | 0.21 | 0.92 | 0.1088 | .62009 |
| Net fixed asset/TA | 0.32 | 0.88 | 1.2015 | 4.60875 |
| Debt | 8667700300 | 215938000000 | 12007005501.03 | 35369796768.88996 |
| Equity | 67670290 | 31029565 | 2088189711.6667 | 4497617200.68848 |
| Valid N (list wise) 300 | | | | |

Source: Survey data

According to the Table 1 the minimum value of the Debt to Equity ratio is 0.43 and the maximum value is 19.43. The mean value of the debt to equity ratio is 3.2778 and its standard deviation is .821. Regarding the size of the companies, the minimum and maximum values are 8 and 11 respectively. The mean value is 9.16 and it's standard deviation is 11.31233.

When the firm's growth values are considered the minimum value is -122.37 and the maximum value is 0.91. The minimum and the maximum values of debt to total assets are 0.21 and 0.92 respectively. Its standard deviation value is 0.62009. When we consider the fixed assets to Total assets ratio the minimum value is 0.32 and the maximum value is 0.88. The standard deviation for the above is 4.60875.

## EMPIRICAL RESULTS

To find the determinants of leverage of listed Sri Lankan companies, fixed effect regression

The estimation using Eviews 6 in Table 02 indicate that estimated coefficients of all the five explanatory variables used in the model- firm size(Ln assets) ,Growth of the firm, non-debt tax shield, EBIT and asset tangibility. All variables are significant at 1 percent significance. In this model R2 value is 0.731. The R2 statistics shows that approximately 73percent of variation in the firm's leverage can be explained by movements in the vale of independent variable used in the model and the rest of 27 percent is due to the extraneous factors. F statistics indicates that overall significance or goodness of fitness of the model is very high.

Firm size has a positive impact on leverage .The Beta Value of the firm size is 3.469 and the P value is .000. So this is significant at 1 percent significance. So Hypothesis H1 is accepted. We can say that the size of the company significantly affect the leverage of the firm. This finding reveals that larger companies in Sri Lanka use more debt as compared to small companies.

The relationship between leverage and growth in total assets is found to be negative .The beta value of the growth in total assets is -0.017 and p value is 0.010. So H2 is accepted. That is growth of the firm significantly impact on leverage. This results indicates that growing firm in Sri Lanka rely on less on debt and more on retained earnings or equity to finance their new investment opportunities.

The non – debt tax shields are positively related to leverage. Non tax Beta value is 15.118. and P value is 0.000. So H3 is accepted. This finding is consistent with other studies smith and watts (1992) and Liaqal Ali (2011) .

Profitability to Total assets is estimated to have negative impact on leverage. The Beta value of the profitability is -1.647 and the P value is .000.Then H4 is accepted. This finding suggests that Sri Lankan firms prefer to finance new investment using equity funds.

Tangibility of assets to Total assets is positively associated with the leverage. The beta value of the tangibility is 0.018 and the P value is .000. Then H5 is accepted .This results indicates that with a 1 percent increase in the firm's net assets , relative to total assets, there is 0.018 percent rise in debt- equity ratio or leverage ratio of firm.

**REGRESSION RESULTS (MODEL 1)**

**TABLE 02**

| Predictors | Coefficient | Std.Error | t-statistic | p-value |
|---|---|---|---|---|
| Constant | -27.818 | .311 | -8.403 | .000 |
| Size(Ln assets) | 3.469 | .362 | 9.581 | .000 |
| Growth | -0.017 | 0.023 | -2.611 | 0.010 |
| NDTS | 15.118 | 2.979 | 5.075 | 0.000 |
| Profitability | -1.647 | 0.404 | -4.076 | 0.000 |
| Tangibility | 0.018 | 0.019 | .927 | .000 |
| No. of Observations | 300 | | | |
| R2 | 0.731 | | | |
| F-Statistics | 53.392 | | | |
| Prob(F-Statistics) | 0.000 | | | |

**Dependent Variable (**Debt to Equity Ratio)

**REGRESSION RESULTS (MODEL 02)**

**TABLE 03**

| Predictors | Coefficient | Std.Error | t-statistic | p-value |
|---|---|---|---|---|
| Constant | -30.706 | .1357 | -2.262 | .025 |
| Size(Ln assets) | 3.548 | 1.539 | 2.306 | .022 |
| Growth | -0.254 | 0.231 | -1.100 | .0273 |
| NDTS | 8.513 | 0.470 | .836 | .0404 |
| Profitability | -0.299 | 1.349 | -.221 | 0.0825 |
| Tangibility | 0.071 | 0.010 | 7.396 | .000 |
| No. of Observations | 300 | | | |
| R2 | 0.537 | | | |
| F-Statistics | 14.853 | | | |
| Prob(F-Statistics) | 0.000 | | | |

**DEPENDENT VARIABLE (DEBT TO TOTAL ASSET RATIO)**

In this model $R^2$ value is 0.537. The $R^2$ statistics shows that approximately 54 per cent of variation in the firm's leverage can be explained by movements in the changes of independent variable used in the model and the rest of 46 percent is due to the extraneous factors. F statistics indicates that overall significance or goodness of fitness of the model is very high.

Firm size has a positive impact on leverage .The relationship between leverage and growth in total assets is found to be negative .The beta value of the growth in total assets is -0.254 and p value is 0.0273. So H2 is accepted.

The non – debt tax shields are positively related to leverage . Non tax Beta value is 8.153. and P value is 0.0404. So H3 is accepted . Profitability to Total assets is estimated to have negative impact on leverage. The Beta value of the profitability is –0.299 and the P value is .0825.Then H4 is accepted.

Tangibility of assets to Total assets is positively associated with the leverage. The beta value of the tangibility is 0.071 and the P value is .000. Then H5 is accepted.

## CONCLUSION

This paper examined the impact of five firm specific factors – firm size, firm growth rate, non-debt tax shields, profitability, and asset tangibility, on the leverage decision of listed companies in Sri Lanka The results of the study based on the fixed effect estimation show that the explanatory variables in the model 01 and 02: firm size, growth, non-debt tax shields, profitability and tangibility have strong significant influence on firm's leverage. This paper support for existing literatures such as Samarakoon P(2009) Liaqal Ali(2011) , smith and watts(1992),and Fan, H. Sundaresan, S. (1997) . The objective of an investment is to maximize the wealth of owners. In order to achieve this objective investors should select the shares of companies which have higher profitability. Therefore the findings of this research will help investors in selecting profitable shares by considering their capital structure and to maximize their return. Companies can alter their capital structure according to their needs. The findings of this study will also help to companies to determine the optimum leverage which maximizes their profitability. By increasing their profitability companies can also increase the market values of their shares.

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# IMPACT ASSESSMENT OF AGE ON PROFESSIONAL STRESS OF ACTUARIAL AND INSURANCE EDUCATORS IN INDIA

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**ABSTRACT**

*Irrespective of discipline and trade-boundaries, pedagogy of Insurance Education demands specialty in most of the cases. Teachers' style of teaching [rather to assist in the process of learning] accords influence of sequels of factors and variables some of which may be clubbed under 'psychopedagogical attributes'. Among the many other factors, these include professional-interest, job-satisfaction, collectivism and professional- stress. The present study attempts to explore the level and interrelationship of these psycho pedagogical attributes as apparent among the female educators from selected states of eastern-India. Attempt was also made to explore the impact of age of the female educators over these psychoeducational-attributes. Findings of the study reveal that age of the respondents possesses significant impact over the major psychopedagogical attributes viz., professional-interest, job-satisfaction, collectivism and professional-stress.*

**KEYWORDS**

Distance Education, Engineering Education, Phychopedagogical attributes, Professional-stress, professional-interest, job-satisfaction, collectivism.

## INTRODUCTION

Insurance Education in the Indian context is yet to be defined Kavita al.2009). As apparent, the terminology 'Industrial Education' is more a phenomenon imposition over the past-colonial nations by UNO through its sister concern, UNICEF for convenience, it may be assumed that 'Insurance Education' is the activity of professional teaching. The generalized goal of insurance education, irrespective of levels and national boundaries, is to prepare people to practice insurance as a profession increase students' interest in industrial vis-a-vis technological careers through computer and technical education, accompanied with hands-on-learning.

As like performing arts, it is more akin to 'psychomotor domain' of learning apart from cognitive and affective domain. Insurance Education forms a sub-domain within the formal system of industrial education, which basically thrives to develop specified sets of skill apart from knowledge. This makes the system distinct (Siddiqui 2009). Insurance education in the globalized Perspective has been undergoing metamorphic changes in hanging paradigms. In this context, as a developing nation, India has an opportunity share the experience of the advanced nations and thereby, through juxtaposition, can adopt appropriate policies for strengthening the existing system of insurance education that best suits for national interests.

It was predicted in recent past that, '...insurance learning will become more and more popular amount the students, and a craze may be observed to be enrolled in the well-known management institutes imparting education.

The increase of women insurance participation in 'teaching of insurance' as profession changes the traditional understanding of insurance education. In India, the available data refers that only 2.3% of female insurance are employee are in industrial courses at graduation level, representing no more than 4.7% of total male students, suggesting the existence of the largest gender imbalance. However, a sizable percentage among those who are working with actuarial courses are opting for teaching instead of insurance as profession. Effectiveness of leadership and performance of the educators depend upon a sequel of factors arid variables, some of which can be grouped under psychopedagogical attributes.

## REVIEW OF LITERATURE: EXPLORING THE THEORETICAL BASES

Several studies have been conducted by the scholars of India mostly from 'the field of psychology, centering round the impact of different psychopedagogical attributes. The studies range from purely psychological to applied psychology dimensions, sharing the discipline-education. However, none such studies, as appears through browsing dissertation abstracts, concentrates over the specific components of psychopedagogical attributes like professional-stress, professional-interest, job-satisfaction and individualism-collectivism in a common frame. Hence an attempt is being made to explore the theoretical bases of these attributes.

Stress at work is a relatively new phenomenon of modem life-styles. The nature of work has gone through drastic changes over the last century and it is still changing at whirlwind speed. They have touched almost all professions and teachers are no exceptions. Professional stress appears as a chronic disease caused by conditions in the workplace that negatively affect an individuals performance and/or overall well-being of the body and mind (Kelly. 1951).

Specially Women among the educators may suffer from mental and physical stress at workplaces, apart from the common professional stress. Sexual harassment in workplace has been a major source of worry for women, since long, which may not be a rare occasion. "Women may suffer from tremendous stress such as 'hostile work environment harassment', which is defined in legal terms as 'offensive or intimidating behavior in the workplace'. This can consist of unwelcome verbal or physical conduct These can be a constant source of tension for women in job sectors.

Theoretically, the word 'stress' is defined by the Oxford Dictionary as 'a state of affair involving demand on physical or mental energy'. A condition or circumstance (not always adverse), which can disturb the normal. physiological and psychological functioning of an individual (Colman, 2006). In medical parlance 'stress' is defined as a perturbation of the body's itomeostasis (Maslow, 1968; Aiken, 1984). This demand on mind-body occurs when it tries to cope with incessant changes in life. A 'stressed condition seems 'relative' in nature. Extreme stress conditions psychologists say, are detrimental to human health but in moderation stress is normal and, in many cases, proves useful. Generally stress, nonetheless, is synonymous with negative conditions. Today, with the rapid diversification of human activity, we come face to face with numerous causes of stress and the symptoms of anxiety and depression.

So far only few studies are reported by the insurance scholars in India centering round the stress of the teacher and allied groups. Some such studies were conducted by Bhatt (1997), Kudav (2000), Rao, K, et. al. (2000), Singh (2003), Bandhu (2008), Saroj Bala (2008), Dholakia (2009), Kavita Kumari (2009), Siva Sankar (2009), Siddiqui (2009).

While Vernon (1967) suggests that it is difficult to specify certain fixed number of dimensions of interest, according to McDougall (1908), interest may be reflected to the motivating force that compels us to attend a person, thing or any given activity; or it may be the effective experience that has been stimulated by the activity itself. In other words, interest can be the cause of an activity and the result of participation in the activity.

Until and unless a person is having strong positive interest towards her profession, it is difficult for the individual to do well in profession. Therefore, as in other professions, it is essential for the teachers to enhance the level of interest towards their profession aching (Roy and Paira, 2009a). In the changing socioeconomic fabric, it is often observed that joining the teaching profession, especially for a section of the technocrats, after completion of their course of study becomes a compulsion. In other words, an individual, in some cases, opts for certain profession merely out of some socioeconomic compulsion. In such cases, it is for the individual, who joined in a profession primarily due to certain compulsion, to decide whether s/he will try to enhance his/her professional interest or not. Some studies are also available on educators professional interest (Shakuntala and Sabapathy, 1999; Roy, et. al. 2005; Roy, 2007)

Collectivism is defined as a human (and also non-human) propensity, which guides the organism to follow the principle of extending priority over group than that of an individual. Individualism is just the reverse principle where the group priority is dominated by individual priority (Goldman, 1991, 2004). However in psychopedagogy, individualism is perceiyed as a trait, (which in course of time becomes habit) of being independent and self-reliant. Individualism is also perceived as a brewing factor of egoism (Roy et.al. 2005).

Project, in insurance education, is define purposeful wholehearted activity completed in cooperation in educational setup. As insurance education depends much on imbibing manipulative, computing ans statistical skill, therefore team-effort is an important consideration in insurance education, It is often quoted that success of insurance education hinges on 'learning' by doing' principle. In this very spectrum, most of the practical works need collective effort; and at times, nature of skill demands (and therefore is planned) that it is transmitted among the learners as a collective effort.

It is an age-old axiom that in educational setup educator is viewed as a role model for the professionals. Personal qualities of the teacher often disseminates among the students. As such, the importance of collectivism among the teachers is a truly supportive factor in the process of acquiring skill. Having a higher level of collective attribute would influence the students to imbibe the characteristics of the teacher.

In insurance sector, Job satisfaction refers to one's feelings or state-of-mind regarding the nature of their work. Job satisfaction can be influenced by a variety of factors, such as the quality of one's relationship with their colleagues or supervisor, the quality of the physical environment in which they work, degree of fulfillment in their work, and so on. It may have resultant impact with professional stress or interest.

However, there is no strong acceptance among researchers, academicians or consultants that increased job-satisfaction produces improved job-performance. In fact, improved job-satisfaction can sometimes decrease job-performance. For example, one could let sometime sit around all day and do nothing. That may make them more satisfied with their 'work' in the short run, but their performance certainly didn't improve.

Within the actuarial education spectrum, apart from the three important psychopedagogical attributes, viz., professional stress, professional interest and collectivism of a teacher, the level of job-satisfaction also matters a lot to find the success of the system, as reflected through the outputs of the system. Now-a-days, it is often argued that insurance experts of the day need to have in their possession, the most important skill, i.e., the soft skill, which includes the entire attitudinal domain of the personality, interaction pattern and expression of feelings towards situation - all of which possess a close relationship with the social adjustment and Success in the profession.

However, a close look over the dissertation abstracts makes it clear that not even a single study has yet been taken up neither in India, nor in abroad, incorporating all the above factors. It is also interesting to note that none of the studies referred in this section has addressed the psychopedagogical attributes of teachers, teaching in actuarial education system.

## DEFINING THE KEY ATTRIBUTES

The key attributes, on which the present study hinges on, are: professional-stress, professional-interest, job-satisfaction and individualism-collectivism. Together, these psychopedagogical attributes in a bunch, forming the bases of psychopedagogical status of the sample group of respondents for the present investigation. Impact of age is explored to meet the stated objectives of the study.

**PROFESSIONAL STRESS**

The present investigation consider 'professional stress' as the preliminary form of burnout and post status of estrous, caused due to professional overload and tensions among the educators, engaged in actuarial education.

**PROFESSIONAL INTEREST**

The present investigation used the term 'professional interest' so as to find out the tendency of insurance educators towards their profession - that is, whether they feel any urge towards their profession-which may be positive or negative.

**INDIVIDUALISM-COLLECTIVISM**

For the present study, individualism-collectivism is considered as a trait-continuum, which is reflected through the persons' positional existence in the trait (measuring) scale.

**JOB-SATISFACTION**

For the sake of the present investigation. the terminology is considered as the sense of inner fulfillment and, pride achieved when educators, involved in teaching actuarial subjects.

**AGE GROUP**

The sample respondent group of the present investigation was classified in three broad categories, based on their age. such as lower age group, middle age group and older age group.

## OBJECTIVES

The objectives of the present investigation were to:

- Explore the level of professional stress professional interest, individualism collectivism and job satisfaction of the actuarial teachers working in insurance organizations and are offering instruction through direct education.
- Explore the interrelationship of the four psypedagogical attributes of the respondents of insurance sector; and
- Explore the impact of age over the stated psychopedagogical attributes.

## METHODOLOGY

Methodology adopted to carry out the study was as follows:

**SAMPLE**

The sample for the present investigation incorporates 112 member of actuarial faculties from 4 different subject specialisation teaching in twenty-four off-campus centers of actuarial/insurance/management organisations in Eastern India.

A stratified random sampling technique was adopted to deduce the sample for the present investigation, based on the age strata. These are as follows:

**LOWER AGE GROUP**

The group of respondents falling in the age span includes seventy-five (75) acturials teachers. The maximum age considered under the category was 35 years.

**MIDDLE AGE GROUP**

The group of respondents falling in the age span includes fourteen (14) insurance educators. The respondents falling under the category includes respondents with an age range 36 years to 45 years.

**OLDER AGE GROUP**

The group of respondents falling in the age span includes twenty-three (23) insurance educators. The minimum age considered under the category is 46 years. Maximum age range of the category though not specified however appears 62 years.

The peculiarity of the sample for the present investigation was in terms of their affiliation towards subject-discipline. gender and mode of teaching.

**TOOLS USED**

To explore the psychopedagogical attributes of the respondents, four sets of standardized scales, developed by the investigator, were used, which include a Professional Stress Scale (PSS) for actuarial teachers, Professional Interest Scale (PIS) for actuarial teachers, an Individualism-Collectivism Scale (ICS) and a Job-Satisfaction Scale (JSS).

**PROFESSIONAL STRESS SCALE**

To ascertain the level of professional stress of the respondents, the PSS was administered over the respondents. The scale was developed in a questioning cum statement pattern, including twenty-four items. with a scale range of 0 to 60 and a midpoint of 30. The reliability coefficient of the scale was determined as 0.76.

**PROFESSIONAL INTEREST SCALE**

PIS used for the study incorporates thirty (30) items, with proportionate positive and negative ratio, placed in a five point Likert scale, with a scale ranging from 30 to150 and a scale mid point of 90. The scale bears a reliability coefficient of 0.84.

**INDIVIDUALISM-COLLECTIVISM SCALE**

With a view to measure individuality-collectivity attribute of the respondents, the ICS was administered. The scale was a seven point Likert scale, incorporating sixteen items with proportionate positive and negative ratio, placed haphazardly on the scale. Scale range varied from 16 to 112, with a midpoint of 64 and a reliability coefficient 0.86.

**JOB SATISFACTION SCALE**

To ascertain the level of Job satisfaction of the respondents, the JSS was administered over the respondents. The scale was a five-point Likert scale, including twenty items, distributed proportionately, placed haphazardly in statement from. The scale possesses a scale range 0 to 100 and a midpoint of 50. Reliability coefficient of the scale was determined as 0.92.

**DATA**

Data were collected from the respondents by administering the scales. By nature, collected data were quantitative; and were analyzed through descriptive statistics, correlation and 't' test. For the purpose of analyzing data, different statistical symbols were used, which are introduced as follows:

**σ** indicates standard deviation of a set of data
**N** indicates the number of individuals in a given group
**D** indicates differences of two mean scores under comparison
**σD** also termed as standard error of differences between two means under comparison. The value is calculated following squire root of sum of two sets of squire values of standard deviation of a given set of data, further divided by the respective N
**df** refers to degree of freedom to deduce confidence level
**LoS** refers associates to level of Significance
**t** refers to the ratio of D & σD

## FINDINGS OF THE STUDY

Findings of the present investigation are derived at, based on the analyzed data on the total group, initially, to explore the psychopedagogical status of the entire group of sample. It is further followed by analyzed data obtained from the subgroups, formed based on the age strata. In tune with the stated objectives of the study, impact of age has been explored over the psychopedagogical status components.

Stress in profession does not always possess negative impact. Certain degree of stress, if remains within the range of eustress, helps enhance professional performance. As apparent from the Table 1, the sample group of respondents possess a moderately higher level of Professional stress [M=48.5833, 6 = 5.1499] in the professional stress scale.

On the other hand, professional interest is the mirror, which reflects the positive urge of the professionals towards the profession. It is clear from the Table 1 that the group of respondents possesses moderately higher degree of professional interest [M=112.045, 6 = 12.7152, Midpoint :90] in the professional interest scale.

**TABLE 1: OBSERVATION OVER THE TOTAL GROUP IN TERMS OF M & σ**

| Total Professionals | N = 112 | Professional Stress | Prof. Interest | Job Satisfaction | Individualism-Collectivism |
|---|---|---|---|---|---|
| | M | 48.58 | 112.045 | 49.727 | 47.0984 |
| | σ | 5.1499 | 12.7152 | 5.134 | 6.4914 |

Job satisfaction refers to the extent to which the professionals are satisfied with their job description and accomplish those. It possesses closer relation with job performance too. Keeping in view the mean Job-satisfaction score of the respondents (Table I), it may be reported that the group of respondents possesses almost a neutral degree of Job- satisfaction [M=49. 727, 6 = 5.134, Midpoint =50] in the job-satisfaction scale.

In consonance with the analyzed data in Table 1, one can see that on an average, in terms of their mean score over the trait scale of Individualism-collectivism, the group of respondents are akin towards individualistic trait [M=47.0984, 6 = 6.4914, Midpoint =50] than over the collectivistic trait.

## CORRELATIONAL FINDINGS

The inter-correlation of the psychopedagogical attributes of the insurance educators are briefly presented in Table 2.

**TABLE 2: CORRELATION MATRIX OF THE PSYCHOPEDAGOGICAL ATTRIBUTES**

| N=112 | Prof. Interest | Job Satisfaction | Individualism-Collectivism | Professional Stress |
|---|---|---|---|---|
| Prof. Interest | 1.00 | 0.448873 | 0.094749 | 0.005694 |
| Job Satisfaction | | 1.00 | –0.07384 | –0.16112 |
| Individualism-Collectivism | | | 1.00 | –0.0096 |
| Professional Stress | | | 1.00 | |

While finding correlation with professional interest, it was observed that the group exhibits significantly positive correlation with job satisfaction as also with individualism.

It was also observed that the group exhibits positive but insignificant correlation between professional interest and professional stress, as apparent from Table 2.

While binding correlation with job satisfaction, the group exhibits negative and insignificant correlation with individualism, as also with professional stress (Table 2).

Table 2 also reveals that the group exhibits negatively insignificant correlation between Individualism and Professional stress.

## FINDINGS ON AGE-BASED JUXTAPOSITION IN CONNECTION WITH PROFESSIONAL INTEREST

The findings in this section deal with age based juxtaposition of the mean professional interest score of three different age-groups. For the treatment of data, 't' test has been ,applied. This juxtaposition has been carried out between lower verses middle age group. Iwer verses older age group and also over the middle verses older age group. Findings over the juxtaposition are presented in Table 3, 4 and 5.

**TABLE 3: LOWER VERSES MIDDLE AGE GROUP**

| Groups under Comparison | Factor | N | Mean | σ | D | σD | Dt | t | LoS |
|---|---|---|---|---|---|---|---|---|---|
| Lower age group | Prof. | 75 | 118.4266 | 10.615 | 23.9981 | 2.1203649 | 87 | 11.31791 | Signif-iant |
| Midle age group | Intere-st | 14 | 94.4285 | 6.4738 | | | | | at 0.01 LoC |

Table 3 reveals that the respondents belonging to lower and middle age group differ significantly in terms of their level of professional interest. Respondents belonging to were age group possesses significantly higher level of professional interest compared to their counterparts belonging to middle age group.

**TABLE 4: LOWER VERSES OLDER AGE GROUP**

| Groups under comparison | Factor | N | Mean | σ | D | σD | df | t | LoS |
|---|---|---|---|---|---|---|---|---|---|
| Lower age group | Prof. Interest | 75 | 118.4266 | 10.615 | 11.4266 | 1.8531248 | 116 | 6.1661254 | Significant |
| Older age group | | 23 | 107 | 9.1139 | | | | | at 0.01 LoC |

It is apparent from Table 4 that the respondents belonging to lower and older age group differs significantly so far their level of professional interest is concerned. Respondents belonging to lower age group possess significantly higher level of professional interest compared to their counterparts belonging to older age group and the difference is significant at 0.01 level of confidence.

**TABLE 5: MIDDLE VERSES OLDER AGE GROUP**

| Groups under Comparison | Factor | N | Mean | σ | D | σD | df | t | LoS |
|---|---|---|---|---|---|---|---|---|---|
| Middle age group | Prof. Interest | 14 | 94.4285 | 6.4738 | 12.5715 | 2.2192953 | 55 | 5.6646359 | Significant |
| Older age group | | 23 | 107 | 9.1139 | | | | | at 0.01 LoS |

In tune with the above two findings, Table 5 also reveals that the respondents belonging to middle and older age group differs significantly so far their level of professional Interest is concerned. Respondents belonging to middle age group possess significantly lower level of professional interest compared to their counterparts belonging to older age group and the difference is significant at 0.01 level of confidence.

## FINDINGS ON AGE-BASED JUXTAPOSITION IN CONNECTION WITH PROFESSIONAL STRESS

The findings in this section deal with age based juxtaposition of the mean professional stress score of three different age groups. For the treatment of data, 't' test has been applied. This juxtaposition has been carried out between lower verses middle age group, lower verses older age group and also over the middle verses older age group. Findings over the juxtaposition are presented in Table 6, 7 and 8.

**TABLE 6: LOWER VERSES MIDDLE AGE GROUP**

| Groups under Comparison | Factor | N | Mean | σ | D | σD | df | t | LoS |
|---|---|---|---|---|---|---|---|---|---|
| Lower age group | Prof. Stress | 75 | 48.1466 | 5.1507 | 1.4324 | 1.193015 | 87 | 1.2006554 | NS |
| Middle age group | | 14 | 46.7142 | 3.8696 | | | | | |

Table 6 reveals that though respondents from lower age group possess comparatively higher level of professional stress, they don't differ significantly from the respondents belonging to middle age group.

**TABLE 7: LOWER VERSES OLDER AGE GROUP**

| Groups under Comparison | Factor | N | Mean | σ | D | σD | df | t | LoS |
|---|---|---|---|---|---|---|---|---|---|
| Lower age group | Prof. Stress | 75 | 48.1466 | 5.1507 | 1.8766 | 1.0021482 | 116 | 1.872577 | NS |
| Older age group | | 23 | 50.0232 | 5.2891 | | | | | |

Table 7 reveals that respondents from older age group possess comparatively higher degree of professional stress; however they also don't differ significantly from the respondents belonging to lower age group.

**TABLE 8: MIDDLE VERSES OLDER AGE GROUP**

| Groups under Comparison | Factor | N | Mean | σ | D | σD | df | t | LoS |
|---|---|---|---|---|---|---|---|---|---|
| Middle age group | Prof. Stress | 14 | 46.7142 | 3.8696 | 3.309 | 1:3115369 | 55 | 2.522994 | Signi-ficant |
| Older age group | | 23 | 50.0232 | 5.2891 | | | | | at 0.01 LoS |

Table 8 reveals that respondents from older age group possess comparatively higher degree of professional stress, and this difference is quite significant (at 0.01 Level of confidence) from the respondents belonging to middle age group.

So far the preceding three findings (in table 6, 7 and 8) are concerned, it may be assumed that age possesses significant impact Over the level of professional stress of the respondents, however the respondents from middle are group are less stressed compared to their counter age groups.

## FINDINGS ON AGE-BASED JUXTAPOSITION IN CONNECTION WITH JOB SATISFACTION

The findings in this section deal with age based juxtaposition of the mean job satisfaction score of three different age-groups. For the treatment of data, 't' test has been applied. This juxtaposition has been carried out between lower verses middle age group, lower verses older age group and also over the middle verses older age group. Findings over the juxtaposition are presented in Table 9, 10 and 11.

**TABLE 9: LOWER VERSES MIDDLE AGE GROUP**

| Groups under Comparison | Factor | N | Mean | σ | D | σD | df | t | LoS |
|---|---|---|---|---|---|---|---|---|---|
| Lower age group | Job Satisf-action | 75 | 51 | 4.2936 | 1.7143 | 0.590225 | 87 | 2.9044855 | Signi-ficant |
| Middle age group | | 14 | 49.2857 | 1.1983 | | | | | at 0.01 LoS |

Table 9 reveals that respondents from lower age group possess comparatively higher degree of job-satisfaction, and this difference is quite significant at 0.01 LoS from the respondents belonging to middle age group.

**TABLE 10: LOWER VERSES OLDER AGE GROUP**

| Groups under Comparison | Factor | N | Mean | σ | D | σD | df | t | LoS |
|---|---|---|---|---|---|---|---|---|---|
| Lower age group | Job Satisf-action | 75 | 51 | 4.2936 | 3.1486 | 1.100123 | 116 | 2.8624360 | Signi-ficant |
| Older age group | | 23 | 47.8514 | 6.4399 | | | | | at 0.01 LoS |

Table 10 reveals that respondents from lower age group possess comparatively higher degree of job-satisfaction, and this difference is quite significant at 0.01 LoS compared to the respondents belonging to older age group.

**TABLE 11: MIDDLE VERSES OLDER AGE GROUP**

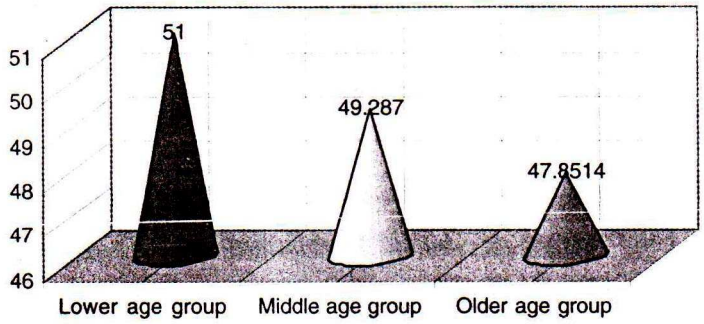
| Groups under Comparison | Factor | N | Mean | σ | D | σD | df | t | LoS |
|---|---|---|---|---|---|---|---|---|---|
| Middle age group | Job Satisf-action | 14 | 49.2857 | 1.1983 | 1.4343 | 1.0329754 | 55 | 1.3885732 | NS |
| Older age group | | 43 | 47.8514 | 6.4399 | | | | | |

Table 11 reveals that respondents from middle age group Possess comparatively higher degree of job-satisfaction, compared to the respondents belonging to older age group, however the difference is not significant at any standard level.

So far the preceding three findings (in Table 9,10 and 11) are concerned, it is crystal clear that age Possesses significant impact over the level of job-satisfaction of the respondents, and the same decreases in as the educator grow older (Fig. 1)

**MEAN JOB SATISFACTION SCORE**

**FIG.1: MEAN JOB SATISFACTION SCORE IN DIFFERENT AGE GROUP** (Total group, N=112]




**FINDINGS ON AGE-BASED JUXTAPOSITION IN CONNECTION WITH INDIVIDUALISM-COLLECTIVISM**

The findings in this section deal with age based juxtaposition of the mean individualism- collectivism score of threat different age groups. This juxtaposition has been carried out between lower verses middle age group, lower verses older age group and also over the middle verses older age group. Findings Over the juxtaposition are presented in Table 12, 13 and 14.

**TABLE 12: LOWER VERSES MIDDLE AGE GROUP**

| Groups under Comparison | Factor | N | Mean | σ | D | σD | df | t | LoS |
|---|---|---|---|---|---|---|---|---|---|
| Lower age group | Ind.- Collec- tivism | 75 | 74.32 | 6.066 | 2.4629 | 2.0195203 | 87 | 1.2195470 | NS |
| Middle age group | | 14 | 71.8571 | 7.0873 | | | | | |

Tab1e 12 reveals that respondents from lower age group possess comparatively higher degree of collectivistic trait, if compared with the respondents belonging to middle age group.

**TABLE 13: LOWER VERSES OLDER AGE GROUP**

| Groups under Comparison | Factor | N | Mean | σ | D | σD | df | t | LoS |
|---|---|---|---|---|---|---|---|---|---|
| Lower age group | Ind.- Collec- tivism | 75 | 74.32 | 6.066 | 05404 | 1.26818062 | 116 | 0.42612226 | NS |
| Older age group | | 23 | 74.8604 | 6.9325 | | | | | |

Table 13 reveals that respondents from lower age group possess marginally higher degree of collectivistic trait, if compared with the respondents belonging to older age group.

**TABLE 14: MIDDLE VERSES OLDER AGE GROUP**

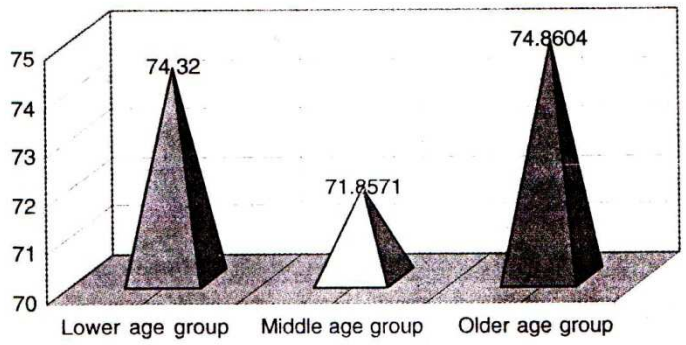
| Groups under Comparison | Factor | N | Mean | σ | D | σD | df | t | LoS |
|---|---|---|---|---|---|---|---|---|---|
| Middle age group | Ind.- Collec- tivism | 75 | 71.8571 | 7.0873 | 3.0033 | 2.16921838 | 55 | 1.3845079 | NS |
| Older age group | | 23 | 74.8604 | 6.9325 | | | | | |

Table 14 reveals that respondents from older age group possess comparatively higher degree of collectivistic trait, if compared with the respondents belonging to middle age group. However this difference is not significant at any standard level.

Findings of the Tables 12, 13 and 14 categorically establishes the fact that the respondents belonging to middle age group exhibits a comparatively lesser degree of collectivistic trait, if compared with the other two terminal age groups.which is also apparent from Fig.2.

**MEAN INDIVIDUALISM-COLLECTIVISM SCORE OF DIFFERENT AGE GROUP**

**FIG.2: MEAN INDIVIDUALISM-COLLECTIVISM SCORE IN DIFFERENT AGE GROUP** [Total group, N=112]




On the other word, respondents from middle age group possess comparatively higher degree of individualistic trait, compared to lower and older age group. However this difference is not significant at any standard level.

## DISCUSSION AND CONCLUSION

It is apparent from the findings of the study that age of the respondents possesses significant impact over the major psychopedagogical attributes viz., professional-interest, job-satisfaction, collectivism and professional-stress. Respondents belonging to middle age group [with an age range 36-45years] require special mention as they exhibit individualistic trait much than the collectivistic trait, compared to the tenninal age groups. The group is also lacking on professional-interest and job-satisfaction, however they are professionally less stressed. The study predicts possibility of allied intervening factors, possibly socio-biological, having impact over age and thereby over their Psychopedagogical attributes, as displayed in the study.

Irrespective of having a moderate size of sample, the uniqueness of the present study stands with its sample group. Criteria considered for selection of sample includes the actuarial teachers, engaged in teaching system probably this is the first attempt to explore the psychopedagogical status profiles of the insurance educators, engaged in educating with special bearing with insurance education and its effectiveness. Therefore the findings of the study would be quite helpful to the future researchers, to initiate further research in actuarial education. It is also expected that such studies would enhance the effectiveness the efficacy of insurance education system and thereby help achieve the nation the desired development, as actuarial education posses a direct bearing with socioeconomic development of a given nation (Goss, 1969; Haq, 1975; Ahlstrom, 1982; Mazumder, 1998; Jakobeit, 1999; Sen, 2000, Roy, 2009)

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# THE EFFECTS OF ENTREPRENEURSHIP AND WORK ENVIRONMENT TO PERFORMANCE WITH INDIVIDUAL INNOVATION CAPABILITY AS INTERVENING VARIABLE AT PT. PAKERIN GROUP, INDONESIA

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**ABSTRACT**

*The use of wood from tropical rain forest is no longer permitted since it can cause environmental pollution and destruction. The Limited Liability Paper Company PT Pakerin Group in Indonesia does not use the wood from tropical rain forest, instead it uses raw material deriving from cane pulp and used paper. If the entrepreneurship and work environment are good, the individual innovation capability can be improved. Improvement of individual innovation capability is required in order to improve the Company Performance. This research is intended to analyze the influence of entrepreneurship and work environment to the individual innovation capability and performance. This research applies AMOS – the program of Analysis of Moment Structure as the analytical instrument. The data are taken from the Heads / Vice Heads of Representative of 65 Business Units of PT Pakerin Group in Indonesia. Outputs of this research indicate that the Work Environment has significant influence to Individual Innovation Capability. Entrepreneurship, Work Environment and individual Innovation Capability have significant influence to the Performance. The finding of this study indicates that the Performance is influenced by two exogenous variables, namely Entrepreneurship and Work Environment, whereas the positive dominant influence is given by the Work Environment.*

**KEYWORDS**
Entrepreneurship, Individual Innovation Capability, Work Environment and Performance.

## 1. INTRODUCTION

In this twenty first century, the era declared as being the actual globalization, the role of innovation certainly becomes more important and determinant. Innovation in development of products or processes constitutes one of the strategic key prerequisites, because companies must be able to improve technology, knowledge, capacity exploitation and able to grab the market from such ideas **(Miller and Friesen, 1982; Aldridge and Swamidas, 1996: 29).** Companies at the global era are required to have high individual innovation capability in order to be able to compete with others. Individual innovation capability shall be supported by good work environment. The work environment is an important factor determining the survival of a company or an organization.

Individual innovation capability becomes the focus in this study, since in reality the innovative individuals are capable in producing new things, so that they become *the business pioneers*. The company can survive if each individual inside has the *innovative spirit*.

There are two contradictory discussions concerning with the relation between *entrepreneurship* and *performance*. In one hand, there is a positive significant relation between entrepreneurship and performance, since there is a mediator of market orientation as indicated by a research conducted at the *US Manufacturing Companies* (**Matsuno et al., 2002**); a research carried out in *Spain* (**Garcia et al, 2006; Gonzales et al., 2009**); a research in *Istambul Small Firms* (**Ahmad and Hoffmann, 2008**); a research conducted at the *Cooperatives in East Kalimantan* (**Amins, 2010**). On the other hand, there is an empirical study proving that there is no relation between *entrepreneurship* and *performance,* as shown by a research conducted at *small firms in hostile and benign environment* (**Covin and Slevin, 1989**).

There is also a contradictory discussion concerning with relation between *work environment* and *performance*. One side declares that there is a positive significant relation between *work environment* and *performance* as indicated by a research conducted at PT Pertamina in Cirebon (**Eka and Subowo, 2005**); a research done on highway traffic controllers in Medan (**Herman, 2009**). On the other side, an empirical research proves that there is no relation between *work environment* and *performance* as indicated by a research performed on the employees of the limited liability company *PT Sumber Djantin in West Kalimantan* (**Shalahuddin, 2012**).

The supporting and profitable environment are important for employees to establish innovative solutions (**Charbonnier-Volrin and Akremi; 2011; and Wang et al., 20110**). *Entrepreneurship* directly influences the respective marketing ability, innovation capability as well as the sustained competitive advantage; but indirectly it influences the sustained competitive advantage through the respective marketing ability and innovation capability (**Jia-Sheng and Chia-Jung, 2010)**. **Aulawi et al, (2009)** states that knowledge sharing takes the important role in improvement of Individual Innovation Capability.

**Akbar and Geoffrey (2005)** state that innovative capabilities of a company and good network structure can improve the performance. **Ming and Chung (2010)** declare that innovation capabilities have positive influence to performance. This study tries to develop a theory concerning with the *Relation between Entrepreneurship and Work Environment to the Individual Innovation Capability and Performance*.

This research is carried out at a *Limited Liability Paper Company* PT Pakerin Group in Indonesia. Though this company is still traditional in its nature, it tries to be able to compete with other paper companies by improving its innovation capability. This is required after realizing that its production cost increases due to high raise in employees' minimum wages specified by the government.

## 2. LITERATURE REVIEW

### 2.1 INDIVIDUAL INNOVATION CAPABILITY

**Adler and Shenbar (1990)** define *Innovation Capability* as a capability to develop, to respond and to identify the four dimensions, namely: (1) *Capability to develop new products* meeting the market demands; (2) *Capability to apply the suitable processing technology* in order to produce new products; (3) *Capability*

*to develop and adopt new products and the processing technology* to fulfill the future needs, and (4) *Capability to respond to the related technological activities* and to the unexpected activities created by competitors.

**Angerhrn et al. (2001); Raava (2007)** state *that innovation capability* can be measured either at the individual or at company level.

**Ussahawanitchakit (2007)** defines *innovation capability* as the ability to develop new products able to satisfy the market needs, to apply the more suitable processing technology to produce such new products, to develop and adopt new products and the processing technology for the future needs, and also to respond to activities of the unexpected technological changes as well as the unexpected opportunities conducted by the competitors.

**Tidd and Bessant (2009: 27)** declares that a company with high innovation capability at the average is able to obtain the profit twice as much compared to that if the company has no innovation.

**Aulawi et al. (2009)** states that knowledge sharing takes the role in improving individual capability, because it can facilitate individuals to perform the *knowledge re-use* and *knowledge regeneration* available at the company, so that in the end the innovation capability of individuals in the said company will increase.

**Ru-Jen et al. (2010)** states that there are five aspects of Innovation Capability, namely: *product, process, administration, marketing and service innovation.*

**2.2 ENTREPRENEURSHIP**

**Kristanto (2005:29)** declares that entrepreneurship is so much needed to improve: the competitive ability, the change, innovation, growth and sustainability of the company business. *Entrepreneurship* can be used as *business strategy* either for short term or in the long run as life strategy in general.

**Tengtarto (2006); Thomas et al. (2008:74)** state that there are eight entrepreneurship indicators, namely: *vision, planning, motivation, innovation, opportunity, self confidence, risk and adaptation*.

**Schumpeter (1910)** in **Jia-Sheng and Chia-Jung (2010)** declare that *entrepreneurship* is a new motivating factor of production. There are three entrepreneurship dimensions, namely: *innovation, initiative, and risk taking.*

**2.3 WORK ENVIRONMENT**

**Nitisemito (1998:183)** states that the *work environment* is anything available around an employee able to influence him in performing the tasks assigned to him.

**Ahyari (1999:97)** states that the work condition is actually one of the elements of *work environment*.

**Timpe (2002:6)** declares that the *work environment* is determined based on six dimensions, namely: *responsibility, coordination, group spirit, reward, standard and organizational clarity*.

**Eka and Subowo (2005)** state that that a *work environment* can be designed in such a way in order to establish a work relation binding the employees into their environment.

**2.3 PERFORMANCE**

**Venkatraman and Ramanujam (1986)** state that there are two things to be put into our attention in evaluating the performance, namely: *the sources of data* and *the objectiveness of evaluation*.

In term of data sources, our attention needs to be focused on whether the evaluation is based on *primary* or *secondary data*. Whereas on objectiveness of evaluation, our attention needs to be focused on whether it is *an absolute evaluation* (such as: accounting internal system, or from external agencies) or a *perception evaluation* (such as perception of manager and vice manager of the company).

**Sink and Tuttle (1989: 39)** declare that performance is a kind of complex interrelation among *effectiveness, efficiency, quality, productivity, quality of work life / work condition, innovation and profitability.*

**Zahra and Das (1993)** prove that the evaluation of performance is *subjective* and has *high level of reliability and validity***.**

**Bredrup (1994:24)** states that the dimensions of performance are *effectiveness, efficiency and changeability*.

**Keegan and Green in Waterhouse (1997:65)** declare that performance measurement is required In order to be able to know what things have been done and achieved in a certain period of time, the problems being encountered, as well as the preparation in concrete steps for future improvement.

**Makelainem (1998:49)** states that measurement and size of performance have several means, bases and standards, whose applications are adjusted to their needs.

**Beal (2000)** states that the performance measurement can use either the subjective or objective concept. The *subjective concept* is the evaluation of Manager upon the relative performance of his competitor or of the pre-determined targets. Whereas *the objective concept* is the absolute performance evaluation. The subjective measurement is based on the perception of manager to anticipate the unavailability of the objective performance data in a research.

**Gonzales et al. (2009)** states that the four performance dimensions are as follows: *profitability, market response, position of market value, and the success of new products*.

## 3. RESEARCH METHODOLOGY

This research analyses 4 latent variables, namely: *Entrepreneurship, Work Environment, Individual Innovation Capability, and Performance*. Data are taken from Heads / Vice Heads of Representative of 65 Business Units of the Limited Liability Paper Company PT Pakerin Group in Indonesia. There are 142 respondents filling-up the questionnaires that have already got their validation tested.

***Entrepreneurship*** is measured by using nine (9) observed indicators consisting of: *innovation, initiative, risk taking, vision, planning, motivation, opportunity, self confidence, and adaptation*.

***Work Environment*** is measured by using seven (7) observed indicators comprising of: *responsibility, coordination, group spirit, reward, standard, organizational clarity, and work condition*.

***Individual Innovation Capability*** is measured by using five (5) observed indicators consisting of: *product innovation, process innovation, administration innovation, marketing innovation and service innovation.*

***Performance*** is measured by using six (6) observed indicators consisting of: *efficiency, effectiveness, changeability, profitability, market response and position of market value.*

***Variable Measurement*** applies the **Likert Scale** with the gradation commencing from *'Absolutely Agree' (5*) until *'Absolutely Disagree (1).* Respondents answer the *questionnaires*, and collection of data obtained from the Respondents' answers are analyzed by using SEM – the *Structural Equation Modeling* with the program of ***AMOS*** – the *Analysis of Moment Structure*.

## 4. RESULTS AND DISCUSSION

Having put the data into the ***Statistical Product and Service Solutions*** (***SPSS***) program, the validity test is then performed. In this research, the validity test is viewed from the score of its ***Critical Ratio (CR).***

**Anderson and Gerbing (1998) in Ferdinand (2002: 187)** state that the indicator validly measures the subjects that should be evaluated at the presented model, if the coefficient of indicator variables is twice as much bigger than its error standard (**Score of CR>2.S.E**.). All indicators produce the estimation score with the *Critical Error (CR)* twice as much bigger than its *Standard Error (SE).*

**Validity Test** is intended to know whether the statements at the questionnaires are sufficiently representative. This test is executed by using the *confirmatory factor analysis* at the respective latent variables, namely: *entrepreneurship (X1), work environment (X2), individual innovation capability (Y1) and performance (Y2)* by applying the program of AMOS.

Not all the loading scores are bigger than 0.5 although statistically significant. There are three indicators unable to be used to measure the entrepreneurship (X1), namely: *motivation, self confidence, and adaptation*, while others are able to. Therefore, the factor confirmatory analysis is performed without involving the aforesaid three indicators.

Data are then analyzed using the AMOS program with the results as shown on Table-1.

**TABLE-1: OUTPUTS OF TESTING ON ENTREPRENEURSHIP AND WORK ENVIRONMENT MODELS UPON INDIVIDUAL INNOVATION CAPABILITY & PERFORMANCE**

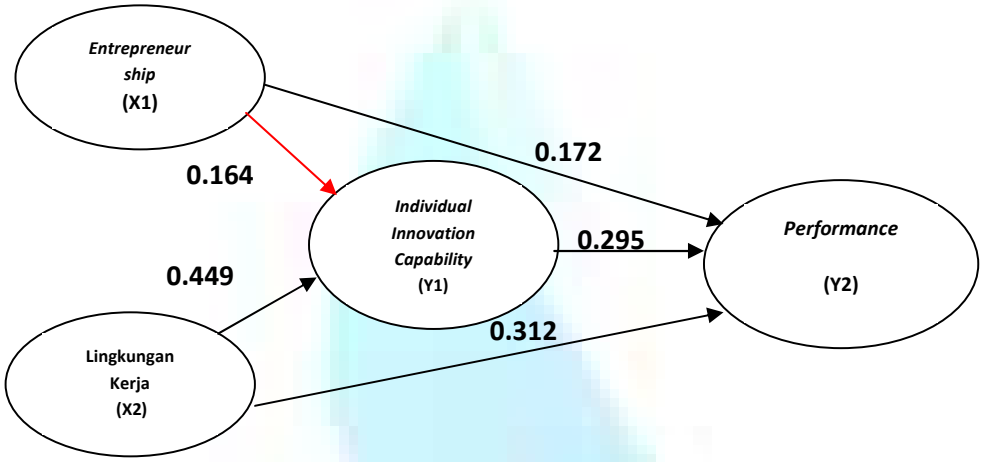
| No. | Goodness of Fit Index | Value | Cut-Off* | Status |
|---|---|---|---|---|
| 1. | Chi Square | 409.463 (p=0.000) | Probability of Chi Square ≥ 0.05 | Marginal |
| 2. | RMSEA | 0.069 | ≤ 0.08 | Fit |
| 3. | CMIN/DF | 1.664 | ≤2.00 | Fit |
| 4. | TLI | 0.917 | ≥0.90 | Fit |
| 5. | CFI | 0.926 | ≥0.90 | Fit |

*) Quoted from Ferdinand, 2002:61.

Table-1 indicates that the chi square value is 409.463 (p=0.000) resulting the *Marginal Status*. Four other indexes, namely RMSEA, CMIN/DF, TLI and CFI indicate the *Fit Status*. This shows that the *Entrepreneurship* and *Work Environment Models* are acceptable on *Individual Innovation Capability* and *Performance*.

Based on this fit model, the respective linear coefficient can be interpreted (**Hair et al., 2006: 777)** as shown in Drawing-1.

**DRAWING-1: INFLUENCE OF ENTREPRENEURSHIP AND WORK ENVIRONMENT MODELS UPON INDIVIDUAL INNOVATION CAPABILITY AND PERFORMANCE**




**Note**

s : significant

ns : non significant

Drawing-1 indicates that the biggest influence of Work Environment to the Individual Innovation Capability is at the value of 0.449.

Outputs of Linear Coefficient Testing on Individual Innovation Capability obtained from the Drawing-1 processing using the AMOS program are as shown in Table-2.

**TABLE-2: OUTPUT OF LINEAR COEFFICIENT TESTING ON INDIVIDUAL INNOVATION CAPABILITY MODEL**

| Independent Variables | Dependent Variables | Coefficient | C.R. | Prob. | Remarks |
|---|---|---|---|---|---|
| Entrepreneurship (X1) | Individual Innovation Capability (Y1) | 0.164 | 1.748 | 0.080 | Not Significant |
| Work Environment (X2) | Individual Innovation Capability (Y1) | 0.449 | 4.392 | 0.000 | Significant |
| Entrepreneurship (X1) | Performance (Y2) | 0.172 | 1.996 | 0.046 | Significant |
| Work Environment (X2) | Performance (Y2) | 0.312 | 3.310 | 0.000 | Significant |
| Individual Innovation Capability (Y1) | Performance (Y2) | 0.295 | 2.961 | 0.003 | Significant |

**Source:** The Processed Drawing-1.

**OUTPUTS OF STUDY SHOWN IN TABLE-2 ARE S FOLLOWS**

1. Entrepreneurship (X1) has positive but not significant influence to Individual Innovation Capability (Y1).
2. Work Environment (X2) has positive and significant influence to Individual Innovation Capability (Y1).
3. Entrepreneurship (X1) has positive and significant influence to the Performance (Y2).
4. Work Environment (X2) has positive and significant influence to the Performance (Y2).
5. Individual Innovation Capability (Y1) has positive and significant influence to the Performance (Y2).

**4.1 INFLUENCE OF ENTREPRENEURSHIP TO INDIVIDUAL INNOVATION CAPABILITY**

***Entrepreneurship (X1) has positive but not significant influence to Individual Innovation Capability (Y1).*** This is indicated by the linear coefficient with positive sign (+) at the amount of 0.164 and the CR value of 1.748 and the probability of significance (p) is at the sum of 0.080 bigger than the standard of significance (α) determined at the amount of 0.05. Therefore, Entrepreneurship has no significant influence to Individual Innovation Capability (Y1).

**4.2 INFLUENCE OF WORK ENVIRONMENT TO INDIVIDUAL INNOVATION CAPABILITY**

***Work Environment (X2) has positive and significant influence to Individual Innovation Capability (Y1).*** This is shown by the linear coefficient with positive sign (+) at the amount of 0.449 and the CR value of 4.392 and the probability of significance (p) is at the sum of 0.000 smaller than the significance standard (α) determined at the amount of 0.05. Therefore, the *Work Environment (X2)* has a direct influence to *Individual Innovation Capability (Y1)* at the sum of 0.449.

**4.3 INFLUENCE OF ENTREPRENEURSHIP TO PERFORMANCE**

***Entrepreneurship (X1) has positive and significant influence to the Performance (Y2).*** This is indicated by the linear coefficient with positive sign (+) at the amount of 0.172 and the CR value of 1.996 and the probability of significance (p) is at the sum of 0.046 smaller than the significance standard (α) determined at the amount of 0.05. Therefore, the *Entrepreneurship (X1)* has a direct influence to the *Performance (Y2)* at the sum of 0.172.

**4.4 INFLUENCE OF WORK ENVIRONMENT TO PERFORMANCE**

***Work Environment (X2) has positive and significant influence to the Performance (Y2).*** This is indicated by the linear coefficient with positive sign (+) at the amount of 0.312 and the CR value of 3.310 and the probability of significance (p) is at the sum of 0.000 smaller than the significance standard (α) determined at the amount of 0.05. Therefore, the *Work Environment (X2)* has a direct influence to the *Performance (Y2)* at the sum of 0.312.

**4.5 INFLUENCE OF INDIVIDUAL INNOVATION CAPABILITY TO PERFORMANCE**

***Individual Innovation Capability (Y1) has positive and significant influence to the Performance (Y2)***. This is shown by the linear coefficient with positive sign (+) at the amount of 0.295 and the CR value of 2.961 and the probability of significance (p) is at the sum of 0.003 smaller than the significance standard (α) determined at the amount of 0.05. Therefore, the *Individual Innovation Capability (Y1)* has a direct influence to the *Performance (Y2)* at the sum of 0.295.

## 5. CONCLUSIONS

1. ***Entrepreneurship has no significant influence to Individual Innovation Capability.*** Output of this research weakens the theory of **Drucker (1985), (2002: 25),** suggesting that in social services, in economic activities, in public institution or in private companies, all entrepreneurships need to be innovated and

developed. *Entrepreneurship* can help apply the innovative ideas, including new products, new services, new production process, new technology, new materials and new business models / styles. Outputs of this study also has different opinion with the theory of **Bygrave (1996) in Yuyus and Kartib (2010: 47)** declaring that innovation is the beginning of entrepreneurship process.

2. ***Work Environment has significant influence to the Individual Innovation Capability.*** Result of this research is in the same opinion with the theory of **Kelly and Kranzburg (1978: 36)** stating that the organization gives a response to the opportunity available at the internal and external environments, utilizes its energy to introduce new ideas in the forms of process or products. Output of this research also has the same opinion with result of research done by **Woodman et al. (1993)** declaring that the work environment influences the individual's stages and frequency of creative ideas and innovative behavior.
3. ***Entrepreneurship has significant influence to Performance.*** Output of this research has different opinion from the output of research conducted by **Covin and Slevin (1989)** who performed the research at small firms with hostile and benign environment; declaring that there was no correlation between *entrepreneurship* to *performance.* Combination of opportunity, capability and resources do not always lead to the entrepreneurship, if the opportunity costs (for example scarifying the salary and the loss of health insurance) and the start-up with bigger costs rather than its potential usages. This research has the same results with the research held at the *US Manufacturing Companies* **(Matsuno et al., 2002)** stating that the entrepreneurship has positive influence to the performance when there is a mediator in the form of market orientation; with the research conducted at *the Istambul Small Firms* **(Ahmad and Hoffman, 2008)** declaring that the entrepreneurship occurs in the framework of regulation influencing the performance.
4. ***Work Environment has significant influence to Performance.*** Output of this research is in the same opinion with the result of research conducted by *Medan City Administration* **(Herman, 2009)** stating that the Employees' Performance is indeed much influenced by the work environment and the organizational culture. The dominant influential variable is the organizational culture which gives a lot big influence to the *work discipline* of employees. Result of this study is also in line with the theory of **Kusriyanto (1991: 122)** declaring that the physical work environment constitutes on of the factors influencing performance of an employee. An employee working at the physical work environment supporting him to work optimally will produce good performance. On the contrary, if an employee working at an insufficient physical work environment and not supporting him to work optimally, such condition will make th said employee lazy, easily gets tired so that his performance will be low. Output of this research does not support result of research conducted by **Shalahuddin (2012)** who carried out a research on the employees of a limited liability company '**PT Sumber Djantin'** in West Kalimantan, stating that *Leadership has significant influence* to the *organizational commitment* and *work motivation*. Leadership *has no significant influence* to the employee's performance. *Work environment* has significant influence to the *organizational commitment* and *work motivation*. Work environment *has no influence* to the employee performance. The organizational commitment has significant influence to the work motivation and has no significant influence to the employee performance. *Work motivation* has significant influence to the *employee performance*.
5. ***Individual Innovation Capability has significant influence to Performance***. Result of this research is in difference of opinion from output of research conducted by **Loof and Hesmati (2002)** declaring that the project and innovative activities will have negative effect to the organizational performance. Result of this research is in the same opinion with that of **Angerhm et al.(2001) and Raava (2007)** stating that the innovation capability can be evaluated either at the individual or at company level. Output of this research also has the same opinion with that of **Hurley and Hult (1998)** who carried out a research at the *US Federal Government,* declaring that the organization with bigger innovation will reach better response from the environment, easier to get the required capability to improve the organizational performance and to consolidate its sustainable competitive superiority.

## 6. SUGGESTIONS

1. The development program of paper business of the Limited Liability Paper Company PT Pakerin Group in Indonesia is to be more emphasized in creating Work Environment suitable with the condition of this company by improving responsibility, coordination, group spirit, reward, standard, organizational clarity, and work condition of the Heads /Vice Heads of Representative in PT Pakerin Group in Indonesia.
2. The efforts to gain the effective development of paper business of PT Pakerin Group in Indonesia are to be emphasized more on the change in work environment on better company culture pursuant to the awareness of the Heads / Vice Heads of Representative and the company owner. This is intended to get the Individual Innovation Capability improved and being in linear proportion the work environment which is getter better and better at PT Pakerin Group in Indonesia.
3. The efforts to improve the Performance at PT Pakerin Group in Indonesia emphasize more on the improvement of Individual Innovation Capability by means of improving the Product Innovation, Process Innovation, Administration Innovation, Marketing innovation and Service Innovation given by Heads / Vice Heads of Representative at PT Pakerin Group in Indonesia.
4. The efforts to improve the Individual Innovation Capability can be carried out through the improvement in quality of raw materials received, considering the fact that around 70% of production cost is allocated on the use of raw material. Types of raw material applied among others are '***afval'*** deriving either from domestic markets or from import.
5. Output of this study is expected to be able to be used as new information and new thought about paper business development in Indonesia and also able to be used as material for further study.
6. Paper businessmen need to perform the sustainable innovation in order to be able to compete in global markets.
7. Output of this study is expected to be able to become a reference for other companies wishing to implement a sustainable innovation in order to win the competition.
8. This study is far from being perfect, therefore it still requires further betterment to make it perfect in the future.

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# CORPORATE TAXATION, INVESTMENT DECISIONS AND ECONOMIC GROWTH: A STUDY OF SELECTED MANUFACTURING COMPANIES IN NIGERIA

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**ABSTRACT**

*This study examines the effect of corporate taxation on investment decision of manufacturing companies in Nigeria. It also establishes the relationship between tax revenue and economic growth, in order to determine the effects of rates, double and multiplicity of taxes on corporate income as well as the impact of tax revenue on economic growth. The study basically makes use of secondary data. Stratified sampling method was used to ensure proper grouping of the companies while Correlation and Regression analysis were employed to analyze data. The study established that there are cases of double and multiplicity of taxes levied by all the tiers of government. It was also found that, tax revenue has insignificant impact on economic growth. Therefore, government should create conducive and friendly business environment by a way of reducing the rate and numbers of taxes levied on the corporate organization's income to encourage investment. Government should also provide necessary infrastructural facilities to reduce the cost of doing business. Nigerian government should encourage tax compliance and self assessment in order to increase revenue from taxes and achieve sustainable economic growth.*

**KEYWORDS**
Corporate Taxation, Investment, Economic Growth, Manufacturing, Nigeria.

## 1. INTRODUCTION

A major concern of the government of any nation is to achieve sustainable economic growth and development. Economic growth and development is a function of some key macroeconomic variables which are full employment level, low level of inflation and interest rate, price stability, even distribution of income and favourable balance of payment. These macroeconomic variables are determined by many factors among which are the levels of investment in both real and financial sectors of the economy. High level of investment enables a country to attain full employment level, low level of inflation and favourable balance of payment amongst other benefits. Therefore, for a government to achieve economic growth and development there is need to create a favourable and conducive investment environment through its regulatory policies and reforms that will sustain and maintain existing investors, in addition to attracting prospective ones. These include use of low interest rates, availability of credit facilities, political stability, adequate savings and favorable tax reforms.

Taxation in most countries has been one of the most widely discussed issues in the area of public finance, more especially corporate taxation (Contos, 2006). Corporate revenue is currently subject to double and multiple taxation in Nigeria. Profits are taxed first at the corporate level and then, when distributed as dividends or when capital gains are realized, taxed a second time at the individual level. Critics argue that business entities have a financial incentive to organize as corporations. Corporations are legal entities that can have multiple owners and separate management. Their ability to attract multiple investors through the sale of shares or bonds, gives corporations broad access to capital and greater potential for growth, but as a result of double and multiple taxes imposed by government, it discourages business entities from organizing as Taxable Corporation and encourages them to veer from investment and socially-efficient decision (Scholes, 2005)

Taxation is one of the instruments that government uses to create a conducive and enabling environment for investment. Although, taxation contributes to economic growth and development of any nation by serving as primary sources of revenue to government, in addition to being used as an instrument of fiscal policy to regulate economy, various empirical studies have shown that, taxation impacts economic growth and development positively up to a point beyond which the losses caused to the economy is far higher than the positive impacts (Scully, 1991; Engel and Skinner, 1995; Leach, 2003).

In view of the above, this study examines the effect of corporate taxation on investment decision of manufacturing companies in Nigeria with a view to determining the effects of double and multiple taxation on investment decision of cooperate organizations and to examine the magnitude of the effect on the investment decision of manufacturing companies. It is also part of the focus of this study to establish the relationship between tax revenue and economic growth, in order to determine the extent to which taxation affects economic growth and development.

This study is significant because it determines the magnitude of the effects of corporate taxation on manufacturing companies in Nigeria, unlike previous studies such as those of Simeon et al (2007) which show that taxation has effects on investment decision of corporate organizations, but fails to determine the magnitude (significant or insignificant) of the effects.

Moreover, the empirical studies of Hassett et al (2002), Desai et al (2004), and Simeon et al (2007) used the corporate organization across countries comprising all the sectors of the economy in the developed world without reference to individual sectors of the economy. This study intends to add to the existing literature in that it seeks to examine the effects of corporate taxation in a developing economy and with respect to a specific sector of the economy (i.e. manufacturing sector).

As a result of the dual effects of taxation on economic growth and development, which in the long-run discourage investment, and pose problems to policy makers in the area of public finance, finding possible solutions to the causes of disinvestment will be of benefit to government, financial managers, policy makers and prospective investors at large.

## 2. LITERATURE REVIEW

### 2.1 CORPORATE TAXATION AND ECONOMIC GROWTH

Sustainable economic growth and development are major challenges of every developing nation including Nigeria. This can be achieved through full control of some key macroeconomic variables which create conducive environment for investment opportunity. Tax reforms and policy are some of the key variables the government of any country uses in creating investment-friendly environment. Taxation plays an important role in the economic growth and development of a country. There are various tax instruments at the disposal of a government that can be used singly or in concert to finance their activities, but in choosing what tax instrument to use and what rates to impose, governments are typically influenced by their expectations of the effects of taxation on investment and economic activities.

Empirical studies show that taxation can affect growth through its effects on incentives faced by individual and corporate entities. Gupta (2002) believes that taxes can influence firms' decision regarding how much to invest and what kind of assets, taxes on labour that can affect the level of employment and decision on the acquisition of education and job training. Taxes on capital income can affect incentives to save, the absence of emission charges can lead to excessive pollution, the availability of special tax breaks and subsidies for those with political connection can encourage rent-seeking behaviours and reduce incentives to engage in productive activities. Generally, taxation causes a lot of distortion to the economy. For example, increase in corporate tax rate with the intention of raising the revenue base may cause the firm or the company to relocate to another country with lower rates. This in turn affects economic development.

Therefore, tax and expenditure policies should aim to minimize adverse incentive effects. The optimal tax policy is that which does not discourage investment, distort labour supply, consumption and savings (Gupta, 2002).

According to Mintz (2003), tax and expenditure policies have enormous impact on an economy, given that a government often accounts for a significant share of output in developing economies. He further opines that tax structure and tax burden can significantly affect economic growth. Economic growth and development can be enhanced by productive capacity of the economy which he said is a function of investment. Hasset (2002) reaffirms the position of taxation in economic development by saying that revenue structure of a country changes with economic development. According to him, in the early stage of economic development characterized by low level of per capital income, high unemployment, large dependence on agricultural sector, low level of industrialization and underdeveloped money market, countries rely much on taxation to raise revenue to finance their expenditure. However, as the economy advance into an industrialized one and become monetized with booming productive capacity, full employment level, government expenditure will be reduced, so in order to sustain this growth government need to create investment conducive environment by relaxing tax rates to encourage investment.

Theodora (2000) sheds more light on the impacts of taxation on economic development and is of the view that though corporate taxation still remains the main source of government revenue to ensure effective organization of the whole society, and to provide infrastructural services like roads, hospitals, bridges, schools etc. However, the issue of double taxation of corporate revenue and high tax rate discourages production and makes many corporate organizations relocate to the environment with low tax rate. Adedoyin (1997) advises that while pursuing the economic development objectives of taxation, the government should not forget the negative effects of taxation, because high tax rate will discourage hard work, saving, encourage inflation and it may cause division among the factors of production. Similarly, Salawu (2004) notes that, taxes on the profit of firms will raise the cost of production and price of the commodity. Heavy taxes on income serve as a disincentive for those who would have worked for more hours than they do currently particularly overtime workers. In addition, taxes on profit of entrepreneurs make them less willing to take risks since they consider profit taxes as a penalty for success.

Leach (2003) studied the relationship between taxation and economic growth and concludes that there is a threshold beyond which taxes would have a negative impact on economic growth. He notes that tax growth relationship was non-linear and could in fact be described as inverted "U" meaning that tax could impact positively up to a point beyond which the distortionary effect would negate growth. Similarly, Litan and Schramm (2007) argue that investment and entrepreneurship are crucial determinants of economic growth and that distortionary effects of taxation on investment could result in negative impact on economic growth. He empirically established the relationship between effective taxation and economic growth and found that they are negatively correlated.

In addition, Toder (2005) argues that reducing the tax rate on income from capital may stimulate more saving, thereby increasing investment and economic growth. This could happen because raising the after-tax return on saving increases the amount of future consumption that an individual can obtain by sacrificing additional money of consumption today. However, he maintains that tax cuts can only increase investment and economic growth if it increases saving rather than accumulation of more wealth for retirement or other future purposes. In addition, a number of economists have stimulated models which replaced an income tax with consumption tax that remove the tax on the returns to capital which will improve economic efficiency and raise GDP eventually (Gale and Orszag, 2004). But the conclusion that growth will increase is based on the implicit assumption in the model that implementing a new consumption tax will impose a lump sum tax on current wealth.

In general, empirical studies show that taxation performs vital roles in an economy. Taxation contributes to economic growth and development of a nation positively to certain level after which its distortionary effects negate the growth and development in the economy (Leach, 2003). Therefore a government in deciding what tax instrument to use and what rate to impose are typically influenced by their expectation of the effect of taxation on investment and economic activities.

**2.2 THEORETICAL FRAMEWORK**

The effects of taxation on investment is one of the most thoroughly investigated and significant questions in public finance. The simple reason is that taxation, being a primary source of revenue to government and an instrument of fiscal policy for regulating economic activities also has negative effects on economic growth and development. According to Leach (2003), there is threshold by which taxation could impact positively on economic growth beyond which its distortionary effect negates the growth.

In the study carried out by Ronald, Masulis and Trueman (1988), on the implication of differential taxation for corporate investment and dividend decision, an issue that has received little attention in the public finance literature, shows that tax advantage of dividend deferral causes shareholder to generally prefer greater investment in real asset under internal as opposed to external finance. Furthermore dividend deferral is shown to be costly at the corporate level causing shareholders in different tax brackets at times to disagree over optimal investment and dividend policy under internal financing. Their findings also revealed that profitability of internally financed security investment is shown to depend on security tax status and shareholders tax bracket, while externally financed security purchases are unprofitable from a tax stand point.

Ronald and Trueman (1988) established that differential personal tax disadvantages affect the investment decision of corporate organization and that investment in real asset is subject to diminishing returns to scale while investment in financial asset is subject to a form of double corporate taxation.

Contos (2006) sees double taxation as a major effect of taxation on corporate income. He argues that the corporate profits are taxed at corporate level, and then when distributed as dividends or when capital gains are realized, taxes a second time at individual level. He said the reduction in corporate tax rate based on Growth Tax Relief Reconciliation Act of 2003 in U.S.A did not eliminate double taxation and therefore, the discussion for corporate integration is clearly not over. In understanding why corporate taxation is such a highly contested issue, Contos (2006) says, critics argue that the current tax system discourages business entities from organizing as taxable corporations and encourage corporations to move from socially efficient decisions. Those critics (i.e.Scholes, Woltson, Erickson, Marydew, and Shevlin, 2005), believed that the losses to the economy caused by the current tax system far exceeded the gains from the revenues raised. They called for a neutral tax system that does not enter into the decision making process of firms and does not distort economic efficiency.

In the study carried out by Simeon et al (2007) using 85 countries of developed economies, they show that corporate taxation has a consistent adverse effect on investment. According to their finding, a 10 percentage point increase in the effective corporate tax rate reduces the investment to GDP ratio by about 2 percentage points and the official entry ratio by 1.3 percentage points. Based on the data used, a number of additional issues were looked at, which are: first, they compared their result to several other potential deterrents of investment and entrepreneurship. Previous work had developed cross-country measures of entry (Djankov, Simeon, Florecio and Andrei, 2002) and Labour by (Botero et al 2004) regulation for large samples of countries. Their findings were consistent with many researches in recent years on the effects of these measures of regulation on unemployment, labour reallocation, investment, and firm entry by Alesina et al (2005), Haltiwanger et al (2006), Micco and Pages (2006) and Klapper et al (2006) respectively. Although, these regulations matter for some measures of investment, they do not eliminate the large adverse effect of corporate taxation on these variables. Second, Simeon et al (2007) examined the effects of other taxes paid by the firm, as well as of tax administration variables such as the number of payments per year, and the time spent to comply with the tax code on investment. For this result, since some important taxes such as those on labour were sometimes paid by the firm, and sometimes by individuals, other tax cuts do not have nearly as large an influence on investment. Finally, they considered the effects of corporate taxation on other important outcome variables. Authors such as Barro (1991), De Long and summers (1991) and Baumol et al (2007) argue that investment and entrepreneurship are crucial determinants of economic growth. Their empirical studies suggested that there is a negative correlation between these measures of effective taxation and recent growth in economy. They also extend their work to find out whether corporate taxation encourages debt as opposed to equity finance and found a large significant positive correlation between the effective corporate tax rate and the aggregate debt equity ratio. However, their study was restricted to the developed economies.

According to the recent study carried out by PriceWaterHouseCooper and the World Bank on doing business (2009), the result shows that Nigeria is among the first twenty economies with high tax rate in Africa and their findings also show that reducing corporate income tax rate has been the most popular reform features in more than sixty economies of the world. Countries can increase tax revenue by lowering rates and persuade more business to comply with the more favorable rules. For example, Russian Federation cuts corporate tax rate in 2001 from 25% to 24% and a simplification tax scheme lowered rates for small business. Yet, tax revenue increased by an annual average of 14% over the next three years.

In general, the review of various studies shows that taxation has effect on income of the company in a developed economy which affected their investment decision. The work of various scholars on other variables affected by taxation which have a long- run effect on investment opportunities and decision were also reviewed. Their various results showed that the taxation effects on these variables have aggregate effects on investment opportunities and decision of company. Some results of these scholars on other variables are very ambiguous and the magnitudes of taxation effects are still under debate which calls for further study. However, most of the literature on the topic "effects of taxation on investment" were carried out in developed economy, there is therefore a need for such study in developing economy like Nigeria and other third World Countries most especially the effects of taxation on other macro-economic variable such as inflation, labour, unemployment and capital structure decision.

## 3. MATERIALS AND METHOD

The study makes use of secondary data. The data was sourced from financial report of selected manufacturing companies (2000 – 2007) from the Nigeria stock exchange (NSE). The population of the study comprises all listed companies by (NSE). The companies were grouped into five sub- sectors by NSE (see Appendix i) out which five companies were selected for the study analysis. The grouping and selected companies are: United Textile Nigeria Plc, from textile industry, Flour Mill of Nigeria Plc from food and beverages industry, Ashaka Cement from building material industry, Vita Foam and GlaxoSmithKline Consumer Plc from industrial domestic and Healthcare/pharmaceutical industries respectively.

The grouping of companies into five sub-sectors facilitates the use of stratified method of sampling. Each sub-sector is taken as strata out of which a company is chosen for the study, considering the nature of business and type of product (necessity or luxury) produced. The selected companies are those that produce basic necessity of life which include food, clothing, health care, housing etc of which the high cost of producing them has a serious negative impact on the life of the general citizenry.

For the analysis, total annual profit, total taxes provision , total transfer to retain earning and total amount set aside for shareholder return (dividend) from each selected company were obtained from their annual financial statement. correlation coefficient analysis were employed to establish the relationship between total profit earned i.e., profit before taxation, total taxes provision and retains earning for the selected manufacturing firm and this gives room for Pearson correlation test to determine the magnitude of the effects (significant or insignificant) of corporate taxation on investment decision and general performance of the companies.

Finally, information on total revenue from taxation (independent variable) and total federally collected revenue (dependent variable) for the period under-consideration were gathered. Regression analysis was employed to establish the relationship between taxation and economic growth and to determine the effects of tax revenue on economic growth and development of the country, that is whether the effects is significant or not.

## 4. RESULTS AND DISCUSSION

Correlation and regression analyses were employed to establish relationship between the company's profit and tax provision and whether total revenue growth depends on total tax revenue respectively, and the results were used for hypothesis testing.

The correlation analysis schedule (Table 1.1 in appendix ii) shows the total profit and total taxes paid (i.e. profit, withholding and value added tax) for all selected companies. Column X represents annual total profit while column Y represents total taxes for the period under consideration (i.e. 2000 – 2007). The value of the correlation coefficient (0.98) indicates a strong relationship between corporate income and profit taxes. The value of the correlation coefficient is further used for hypothesis one.

Also, the Table 1.2 (in appendix iii) shows the total federally collected revenue (TFR) and total taxes revenue (TTR) for the period 2000 to 2007. The regression analyses were used to examine the impact of tax revenue on economic growth in order to establish the extent to which taxation impact positively on economic growth and development of the country. The dependent variable Y represents (TFR) for the period under consideration while column "X" (independent variable) represents (TTR) from various forms of taxes in the country. The result of the coefficient of determination from regression analysis (i.e. $r^2 = 0.084$) indicates that the relationship between total federally collected revenue and revenue from taxes is weak. The result is further used to test hypothesis two.

### 4.1 HYPOTHESIS TESTING

$Ho_1$ : Incidence of double and multiple taxes has no significant effect on investment decision of manufacturing firms

***The two hypotheses to be tested are:***

$H_O$ : The effect of double and multiple taxes on corporate income is insignificant.

$H_1$ : The effect of double and multiple taxes on corporate income is significant

At 5% level of significant with (n-2) degree of freedom for a two tail test.

The decision rule is to accept $H_0$ (i.e. the null hypothesis) If T-calculated is less than T-critical (i.e. T-cal < T-critical) and conclude that double and multiple taxation effect on corporate income is insignificant, otherwise reject $H_0$ and accept $H_1$ and conclude that the effect of double and multiple taxation on corporate income is significant. From appendix x (b), T-cal is 12.06 and T critical at (8-2) degree of freedom two tail test (i.e. t=0.025) is 2.447 therefore, T critical = 2.45. Since the T-calculated is greater than T-critical (i.e. 12.06 > 2.45) we reject $H_0$ (i.e. null hypothesis) and accept $H_1$ (alternative hypothesis) and conclude that the incidence of double and multiple taxation has significant effect on corporate organization's income which has effects on their investment and dividend decision.

$H_{o2}$ : Tax revenue has no significant effects on economic growth

***The two hypotheses to be tested are:***

Ho : Tax revenue has no significant effects on economic growth

Hi : Tax revenue has significant effects on economic growth

The decision rule is to accept Ho (i.e. null hypothesis) if coefficient of determination $r^2$ is weak and closer to zero (0) and conclude that tax revenue does not have significant effect on the economic growth otherwise, accept Hi(alternative hypothesis) if the coefficient of determination is strong and closer to one (1).

From Appendix x(c), since the value of coefficient of determination $r^2 = 0.084$ is very weak and closer to zero (0), it indicates that the variable X (total tax revenue) does not accounts for major growth of the GDP value (variable Y) hence economic growth and development. This proves the hypothesis ($Ho_4$) that says taxes revenue has no significant impact on the economics growth to be null hypothesis hence, we accept $H_o$ and reject $H_1$ and conclude that the effect of tax revenue on economic growth is insignificant.

The effect of double and multiple taxes on investment decision of manufacturing companies was tested in hypothesis $Ho_1$ . It indicates that it has significant effect on investment decision of corporate organization. The implication of this is that it reduces the amount available for the shareholders (dividend) and transfer to retained earnings for further expansion. This makes shareholders less willing to inject their capital into real investment as substantial part of the profit goes to government coffer and at times make the companies to falsify their record to avoid and evade tax and even relocate to another country with less number of taxes.

The second hypothesis $Ho_2$ (i.e. tax revenue has no significant impact on economic growth), equally uphold that the impacts of tax revenue on economic growth is insignificant and, since investment is generally seen as one of the prime mover of economic growth and development, therefore government should encourage investment by providing favourable investment environment through reduction in the rates and numbers of taxes levied on corporate organization's income, so that manufacturing company in Nigeria will have a sound basis to operate.

## 5. CONCLUSION AND RECOMMENDATIONS

The study is an empirical investigation of the impact of corporate taxation on investment decisions and economic growth, with particular reference to selected manufacturing companies in Nigeria. The empirical results show that double and multiple taxation has significant effects on corporate organization's income by reducing retain earnings and funds available for shareholders which consequently affects future expansion and the growth of the organization. It was also demonstrated that tax revenue has insignificant impact on total revenue which means its contribution to economic growth and development is not significant.

Therefore, there is need for government and policy-makers to create a conducive environment to sustain the existing investment and encourage prospective ones. This is by reducing the rate and number of taxes levied on corporate organizations' income.

Based on the findings of the study, the following recommendations are made:

1. There is need for government to reduce the rates and numbers of taxes levied on the income of manufacturing companies in Nigeria. The justification for this is that since it is mandatory for all the companies to undertake various development project and programs in their respective location which is the government responsibility to be provided from revenue generated and it was even established that tax revenue has insignificant impact on economic growth therefore, tax cuts and reduction will ideally increase the companies income there by gives room for further expansion and new investment hence economic growth and development. This will also encourage the companies to undertake more of developmental project and programs in their respective location and it will also facilitated self assessment and increase the level of compliance hence increase in taxes revenue to the government.
2. Provision of infrastructural facilities is necessary in order to make doing business in Nigeria less expensive. These facilities which include constant water and electricity supply, good road among others, makes doing business very expenses because it added to the cost of production. The present tax rate may be bearable that is, most manufacturing companies may be ready to comply with the present rate of taxation, if government makes the necessary infrastructural facilities available at all time most especially facility like constant electricity, water and good road. The double taxation in addition with cost of provide these infrastructural facilities themselves, escalate the cost of production which in turn reduces their profit making. Therefore it is hereby recommended that government should create enabling business environment by a way of providing the necessary facilities in order to reduce cost of doing business in Nigeria to increase revenue generation hence economic growth.
3. Multiplicity of taxes should be discouraged. The situation whereby the federal, state and local government authority collecting different form of taxes to generate more revenue and also foreign and indigenous companies with many subsidiaries are being taxed differently. This discourages the company's expansion and future growth. It is therefore recommended that government should set up committee to harmonize different forms of taxes collected by the three tiers of government to eliminate the problems of multiplicity of taxes. This will also have long way in creating business friendly environment for economic growth and development. Another way of minimizing the severity of taxes is for the companies to derive associated tax advantage of using more of debt capitalization or leverage financing for new investment project rather than equity financing. This is because interest paid on debt financing is lower than the tax rate chargeable and is not tax deductible, while principle capital, profit and dividends paid to equity and preference shareholders are all tax deductible. Thus, there is an advantage of using leverage financing than equity in view investment projects.

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## APPENDIX

### APPENDIX I

**GROUPING OF MANUFACTURING COMPANIES INTO 5 SUB-SECTORS BASED ON NIGERIAN STOCK EXCHANGE CLASSIFICATION AS AT 31ST DECEMBER 2009**

| S/no. | Sub-sector | Number of companies |
|---|---|---|
| 1 | Conglomerates, Engineering, Technology, Construction and Building Materials | 17 |
| 2 | Agriculture, Food and Beverage Tobacco, Chemicals & Paints | 33 |
| 3 | Packaging Healthcare and Breweries | 33 |
| 4 | Petroleum and Industrial Domestic Products | 13 |
| 5 | Textile, Automobile Emerging market, Computer and Office Equipment | 18 |

Source: Nigerian Stock Exchange

### APPENDIX II

**TABLE 1.1: CORRELATION ANALYSIS SCHEDULE i**

| Year | X | Y | $X^2$ | $Y^2$ | XY |
|---|---|---|---|---|---|
| 2000 | 2569 | 855 | 6599761 | 73125 | 2,196495 |
| 2001 | 3387 | 1235 | 11471769 | 1,525,225 | 4,182945 |
| 2002 | 7197 | 2398 | 51796809 | 5,750,404 | 17,258406 |
| 2003 | 3611 | 1177 | 13,039321 | 1,385329 | 4,250147 |
| 2004 | 6519 | 2083 | 42497361 | 4338889 | 13,579097 |
| 2005 | 8291 | 2604 | 68,740681 | 6780816 | 21,589,764 |
| 2006 | 13406 | 4584 | 179,720836 | 21,013056 | 61453104 |
| 2007 | 15197 | 4187 | 230,948,809 | 17530969 | 63,629839 |
| **Total** | **60,177** | **19,123** | **604,815,347** | **59,055,713** | **188,139774** |

***Source***- from selected company's annual report and account statement

Coefficient of correlation formula is given as:

$$r = \frac{\text{xy} - \bar{\text{y}}\bar{\text{x}}}{\sqrt{(\sum \text{x}^2 - n\bar{x^2})(\sum y^2 - n\bar{y^2})}}$$

$$\sum \text{y} = 60177$$

$$\sum y = 19123$$

$$\sum X^2 = 604{,}815{,}347$$

$$\sum Y^2 = 59{,}055{,}713$$

$$\sum XY = 188{,}139774$$

$$\bar{X} = \frac{60177}{8} = 7522.13$$

$$\bar{Y} = \frac{18123}{8} = 2{,}390.38$$

$$\therefore \text{r} = 0.98299$$

$$\text{r} = 0.98$$

### APPENDIX III

**TABLE 1.2: REGRESSION ANALYSIS SCHEDULE**

| Year | Total revenue | Taxes revenue | $Y^2$ | $X^2$ | XY |
|---|---|---|---|---|---|
| 2000 | 949.2 | 210.4 | 900980.64 | 44268.16 | 199711.68 |
| 2001 | 1906.5 | 258.4 | 3634742.25 | 66770.56 | 492639.60 |
| 2002 | 2331.7 | 401.7 | 4980484.89 | 161362.89 | 896473.89 |
| 2003 | 1731.9 | 413.2 | 29994777.61 | 170734.24 | 715621.08 |
| 2004 | 2575.1 | 446.6 | 6631140.01 | 199451.06 | 1150039.66 |
| 2005 | 3920.5 | 506.8 | 15370320.25 | 256846.24 | 1986909.40 |
| 2006 | 5547.5 | 573.0 | 30774756.25 | 328329.00 | 3178717.50 |
| 2007 | 5965.1 | 644.2 | 355822418.01 | 414993.64 | 3842717.42 |
| **Total** | **24827.5** | **3454.3** | **100,874,319.9** | **3,003,868.53** | **12,462,830.23** |

***Source***: CBN annual report and statement of account

Regression equation is given as

$Y = \hat{a}_0 + b_1 X$

$$b_1 = \frac{\sum \text{xy} - \bar{\text{y}}\bar{\text{x}}}{\sum x^2 - n\bar{x^2}}$$

Where $\sum$xy = 12,462,830.23

$\sum y^2 = 100,874,319.90$

$\sum x^2 = 3,003,868.53$

$$\bar{y} = \frac{24827.5}{8} = 3101.44$$

$$\bar{x} = \frac{3454}{8} = 431.79$$

$$\overline{y^2} = 9631339.83$$

$$\overline{x^2} = 186442.60$$

n = 8

$\therefore b_1 \approx 1.152$

$$\hat{a}_0 = \bar{Y} - \bar{b}_1 \bar{X}$$

$$\therefore \hat{a}_0 = 2606.02$$

Regression line Y = 2606.02 + 1.15

**TEST STATISTIC**

$$Tcal = \frac{r\sqrt{n-2}}{1-r^2}$$

(a)

Where r = 0.98 and n = 8

$$Tcal = \frac{0.98\sqrt{8-2}}{0.1989974}$$

$$Tcal = \frac{2.400499}{1-(0.98)^2}$$

$$Tcal = 12.0629$$

$$Tcal = 12.06$$

**COEFFICIENT OF DETERMINATION**

$$r^2 = \frac{bi(\sum xy - n\bar{x}\bar{y})}{\sum y^2 - n\overline{y^2}}$$

$r^2 = 0.08426$

$r^2 \approx 0.084$

# BUSINESS PROCESS REENGINEERING IN HIGHER EDUCATION INSTITUTIONS: THE CASE OF ADDIS ABABA UNIVERSITY AND BAHIR DAR UNIVERSITY

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**ABSTRACT**

*The teaching learning processes of Ethiopia Universities were devised some decades back and passed through little modification since then. It is only after the problems were accumulated and customers were dissatisfied that the universities came to understand the need of transformation from the old system to the new one which is customer focused. As a result, all government universities attempted to embark Business Process Reengineering (BPR), as the tool is believed to bring the desired result of matching the universities' products to the country's vision of joining the middle income countries in the coming twenty years. To this end, this piece of study was undertaken and the case study design was chosen and data were obtained from three sources; Ministry of Education, Bahir Dar University, and Addis Ababa University. The study envisages that there is confused prospect for the BPR implementation. Besides, the study also found out communication problems in both case universities in general and in Bahir Dar University in particular which will threaten the prospect unless immediate measure is taken. As to the BPR implementation, the attempt so far is best described rather as business process improvements than business process reengineering.*

**KEYWORDS**
BPR, Higher educations institutions, Ethiopia

## 1. INTRODUCTION

Expansion of higher education has led to a need for improved efficiency in administrative services, along with a greater range and flexibility in degree programmes than currently exists: new organisational structures are required (Ford et al., 1996). The ultimate purpose of reengineering universities is to improve productivity and customer satisfaction. And to properly reengineer the processes, it is important first to understand whether a change is really needed. Many literatures claim that the need for change in today's environment is unquestionable because virtually all organizations operate in dynamic environment when sticking to the already designed process may mean lagging behind the demand of the day. Furthermore, Penrod and Dolence (1992) argue reengineering as a suitable means for ensuring higher educations instructions adapt to the changing demands being placed upon them.

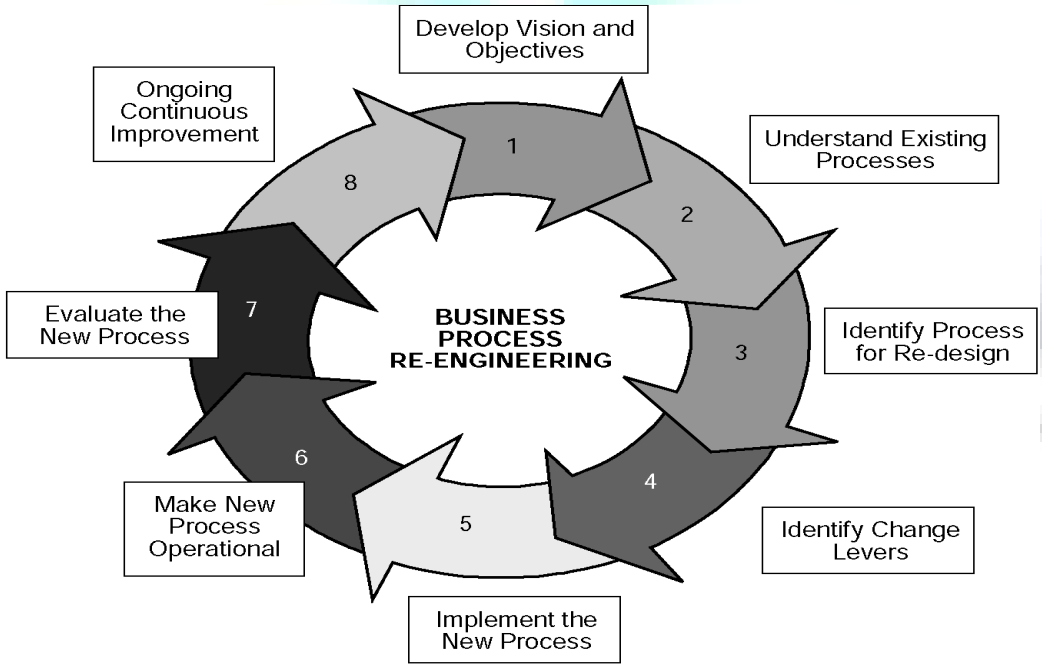
The long run goal of implementing BPR is to achieve efficiency, effectiveness and economy (Hammer, 1995). Through employing the right strategy, policy, and structure in general it is possible to achieve efficiency. Besides, delivering customer satisfaction better than competitors do will secure competitive advantage. In this regard, it is a new phenomenon for our country, Ethiopia, to redesign the process though the practice of revising the past system has been practiced since the past years as a form of governmental reforms. What is new in the BPR which doesn't exist in any other systems of process revising is that implementing BPR will lead to paradigm shift from the existing process which requires starting from the scratch

## 2. LITERATURES REVIEW

### CONCEPTUALIZATION OF BPR

According to Hammer and Champy (1993) business process reengineering is defined as the fundamental rethinking and radical redesign of business process to achieve dramatic improvements in critical contemporary measures of performance, such as cost, quality, services and cycle time. BPR removes hindrances and using technology to drastically invent the way in which work is done.

In addition to the three core characteristics of BPR, rethinking, radical, and dramatic improvements in critical measures of performances, Vokola et al (1998) recommended the essential processes to be followed cyclically. Such processes, as depicted below, dictate BPR implementation to be continuous as there always exists room for improvement in the world of dynamism.




**Source:** Vakola *et al.* (1998)

In the cyclical process, Vakola et al. identified eight essential processes which begins with redefining the mission and objectives and ends with seeking for ongoing and continuous improvement. According to them, the process continuous as the vision and objective of the organization scales up due to quality improvement, cost reduction, and delivery speed improves.

**FACTORS AFFECTING THE IMPLEMENTATION OF BPR**

Despite the significant growth of the BPR concept, not all organizations embarking on BPR projects achieve their intended result. Hammer and Champy (1993) estimate that as many as 70 percent do not achieve the dramatic results they seek. Having BPR repeatedly at the top of the list of management issues in annual surveys of critical information systems reflects executives' failure to either implement properly or acquire the benefits of BPR (Alter, 1994). This mixture of results makes the issue of BPR implementation very important. BPR has great potential for increasing productivity through reduced process time and cost, improved quality, and greater customer satisfaction, but it often requires a fundamental organizational change. As a result, the implementation process is complex, and needs to be checked against several success/failure factors to ensure successful implementation, as well as to avoid implementation pitfalls.

## 3. STATEMENT OF THE PROBLEM

Business Process Reengineering (BPR) has become a major concern to our country, Ethiopia, since the past few years. Almost all governmental and some private organizations attempted BPR implementation hoping to result in better performance and superior customer satisfaction. Although the notion of BPR is many decades old, Ethiopia has currently overwhelmed with its implementation. Some governmental organization, which so far have implemented BPR, claim to have better results. Being one of governmental organizations, the Federal Democratic Republic of Ethiopia Ministry of Education has currently demanded all governmental universities to implement BPR since the past five years.

Currently, the number of government universities increased to thirty, and hoped to be more in the near future. However, the ever increasing numbers of students who join government universities together with the dynamic global environment necessitate well equipped and modern universities with technological driven process which the old system can not accommodate.

Thus, transforming to the new system from the old one needs a fundamental redesigning of university systems. Seemingly, cognizant to this fact, universities tried to rethink the way they used to do business through BPR. However, critics of failure overshadowed universities claim of BPR implementation in the case universities. Examining the extent to which such critics holds true is the very reason why this research was undertaken. The central research question is " have the case universities implemented BPR according to their designs and the theory?"

## 4. OBJECTIVES OF THE STUDY

The major objective of the research is to examine the implementation of Business Process Reengineering (BPR) in the case universities. To better understand this, the following specific objectives are worth stating.

- To validate whether there was real need for universities to implement BPR
- To assess how different stakeholders participate in the study and implementation of the BPR?
- To evaluate the extent to which the BPR implementation meets the standards of BPR as recommended by Hammer & Champy, 1993

## 5. SIGNIFICANCE OF THE STUDY

The results of the study would contribute meaningfully to the implementation of BPR by pin pointing possible sources of challenges and suggesting possible strategies of alleviating the problems, as BPR is a continuous process. In addition to this, comparing the results of BPR with the former traditional method promotes its acceptance. Besides providing empirical evidence from the literatures enhances stakeholders' confidence on the BPR as a real preferred tool of achieving the desired objective. The study can also contribute its part to the customized body on knowledge in the area.

## 6. RESEARCH METHODOLOGY

**DESIGN OF THE STUDY**

The study attempted to examine the implementation of BPR in Ethiopia government universities in particular reference to how the selected universities perceive BPR and how they are implementing it to realize the country's aim of producing practical and real problems solution oriented manpower.

To better approach the respondents and gain appropriate response, the qualitative method that searches for meanings, reasons, and explanations that considers the explanatory research design was used. The study used case design for it is believed to be the appropriate for the study concerned, as could be justified below.

**CASE STUDY DESIGN**

Existing literatures such as Hall et al. (1993) suggest that the assessment of BPR in organizations including in higher education institutions would benefit more by investigating in-depth understanding of the real experience of implementing BPR. Therefore, the research will use government higher education institutions which have embarked on BPR for its detailed case study design.

The selection of the case study in government universities is based on one decisive factor: Evaluating nature of radicalness in process change implementation and the universities status so far. Therefore, I have chosen case 1: Bahir Dar University (where I belong), and case 2: Addis Ababa University, a 60 years old and multi campus university and whose system I had known well before BPR implementation and I believe it is important for comparison and to evaluate wholeness of the Ministry of Education BPR strategy.

Actual case study fieldwork had been done through a triangulation approach to get both breadth and depth information, and which is in line with suggestions in Yin (1994), with an open-ended interview involving BPR team leaders and the Ministry of Education concerned person for higher educations' BPR.

**DATA ANALYSIS**

I used thematic analysis. The themes were developed based on the extant literature reviews, especially from the recommendations of Hammer & Champy,(1993) and Penrod and Dolence(1992). In the process of assimilating data in to themes, the raw data were broken down into manageable forms. I also conducted an audit trail, a scheme for identifying these data forms according to their speakers and the context. Speakers were also typically referred in a manner that would provide a sense of context. The next stage of analysis involved reexamination of the categories to determine how they are linked, a complex process called "axial coding" (Strauss and Corbin, 1990). The discrete categories that were identified in open coding were compared and combined in new ways as I began to assemble them in to the themes. Finally, I translated the conceptual theme based model into the story line that would give meaning to readers.

## 7. FINDINGS AND DISCUSSION

**INTRODUCTION**

The BPR projects at the case universities have been implemented since 2009. For this reason, the interviews sought to examine the design of the BPR studies, the challenges that BPR stakeholders are facing in the initial stages of project roll-out and problems faced so far, the role of Ministry of Education in supervising and helping to synchronize BPR in all universities, and availability of resources for the full implementation of BPR. The discussion that follows begins by identifying whether there was really a need to launch BPR and the participation of stakeholders that went on at the outset of the BPR programs.

The cases are reviewed under the themes of: Need for BPR in academic institutions Involvement of different stakeholders in the study of BPR, communication, IT infrastructures, Role of MoE- in keeping harmony/synchronization, adequacy of financial resources, success results so far, and future conditions. These headings are identified to be thematic areas for BPR implementation based on the research objectives of this study and key findings gathered through interview and the universities' BPR study reports.

**NEED FOR BPR IN ACADEMIC INSTITUTIONS**

The Ethiopian universities' processes have been formulated many decades back. For example Addis Ababa University is the pioneer university in Ethiopia and has been in operation for the last six decades. Its organization process was devised since the beginning with little modification through the periods it has passed. Since the process considered only the time it was devised, it can't satisfy its customers as it should these days. To this end, AAU's key informant and BPR study report strongly claimed a felt need for a dramatic change of the systems even before MoE initiated the idea of BPR.

Similarly, both MoE and BDU informants support the AAU's felt need for change as both of them criticize the old system for its obsolescence, rigidity, and falling far from the demand of the country and the global environment in general. The performance of higher education is of great significance for the competitiveness of nations (Porter, 1990). Therefore universities should produce competent and skilled manpower for Ethiopia to be competitive in the global arena. *"The country's universities should design their processes in a way that enable their graduates execute the country's policy and hence it was inevitable for universities to redesign their processes considering the 70/30 policy."* (Informant, MoE)

It is therefore clear from the key informant that there is really a need for change from the old system and BPR is the preferred tool for its completeness and innovative nature. Ford *et al.* (1996) argue that BPR could enable HEIs to develop organizational structures that enable innovative teaching and learning methods, whilst maintaining some element of the important student-teacher relationship. The process needs to be student centered and available means of transferring knowledge from the teachers to the students shouldn't be confined to a chalk and talk method. The old Ethiopia curriculum was devised based on the social science theory dominant and didn't take in to account today's competitive global environment. Thus, considering the global environment and the current policy of Ethiopia, the change to fit these things is inevitable for Ethiopia universities to play their roles of producing the right amount and kind of graduates to the market.

**INVOLVEMENT OF DIFFERENT STAKEHOLDERS IN THE STUDY OF BPR AND THE CONFORMITY OF IMPLEMENTATION WITH THE PLAN**

For the full implementation of BPR, so as to achieve the desired objective, all stakeholders should be involved in the study mainly because reengineering the process should be studied, executed, and evaluated by these stakeholders at the end of the day. The teaching and learning process is one of the core processes for universities and hence the academic staffs are the major stakeholders and need to contribute their opinion to the BPR study. The informants explained how the staff involved in the study process; "Major stake holders had been involved in the study of BPR in each university and the universities had come up with important ingredients for their final studies." (Informant, MoE)

However, the informant's source to say so is the universities report and the Ministry didn't establish a supervising team to ensure whether the claimed involvement was done as stated in the report. "Teams were established including the top management of the universities and the teams tried to incorporate the staffs' view in the study" (BDU's and AAU's report on staff involvement). As can be read from the BPR studies of both universities, teams were established which includes the top management in the universities. And as the informants explained, the final draft of the report was presented to the staff and clarification was made for sought points.

However, the opportunities made to get access to the team were not sufficient. For the full involvement of the staff and full disclosure of the whereabouts of the study, there must have been regular meetings to at least brief such a matter. Besides, these days it seems that BPR has undergone a deep sleep as rumors circulate around the case universities, as I have tried to observe, and key informants also acknowledged.

By and large there should have been and should be greater involvement of the stakeholders in the implementation with good understanding of what to do. The study found out that the involvements of academic staffs are not satisfactory. And the 'implementation' lagged behind the duration set in the study of both universities. This may in turn can have implementation on involvement and commitment levels of both top management and academic and administrative staffs.

**RADICALNESS OF THE CHANGE PROCESS**

BPR involves radical and fundamental changes, and it evolves from the need to recognize that the long-established ways of doing business were mostly designed for customers, services and products that are different in today's competitive environment. There has also been a shift in organizational focus towards improving quality, the customer, and innovation, rather than emphasizing control and cost cutting (Hammer, 1990). Therefore, organizations are moving to re-engineer old business processes by introducing new structures and procedures, and are including new ways of doing business. This must hold true for Ethiopia universities.

Building an imaginative thinking and a clear and compelling vision for future processes is critical to the successful implementation of BPR (Talwar, 1993). BPR calls for a radical change that involves focusing on the analysis of business processes rather than the functions of an organization, and reengineering these processes in order to maximize the performance. The bit by bit change and improvement process will not solve the problems our universities were having and only the radical change can cure them.

In this respect, the case universities seem to understand the importance of the radical change in their core processes such as the teaching learning and research and community services so reform their curriculum in a different approach than it used to be.

The course alignment approach is completely new to Ethiopia universities in general so far. The fact that students will be given the opportunity to take aligned courses in any order they like makes the system very flexible. Besides, students' stay in the campus is determined by their academic performance and interest to shorten the duration. This makes a sense that the fast performer can get his/her degree in less duration than slow performer. And there are also two versions of certification; complete degree after taking all the course system modules and core competency certificate after taking a single aligned course system. Furthermore, in the BPR study of BDU, the design deserves to be called radical as many of the processes are conceptually designed from the clean slate. And the introduction of course chairs and assistants seem ideally feasible for flexibility education system. However, such radicalness and brilliance remained on the study report to date and the changes are mere improvements. Similarly, in AAU, the implementation seems as per the study except for few deviation in the undergraduate program such as the report claims to allow students the have major-major, major-minor, and the flexibility to allow students take as many general courses as they can across departments.

**COMMUNICATION**

Communication is one of the essential change management tools perceived as very important in facilitating BPR (Hammer, 1993). He emphasizes the need for communication throughout the change process at all levels and for all individuals, and stress that communication should occur regularly between those in charge of the change initiatives and those affected by them, and that this communication should discuss sensitive issues.

Despite the importance, there have been insufficient communications in the case studies as BDU informant stated "There had been some meetings to communicate to the staff in the first two year but I don't think they were sufficient." For the past two years, there has never been any formal communication about the whereabouts of BPR in BDU to the staff formally. Such a delay or negligence in communication opens the door for rumors to circulate in the university that the process fails. On the other hand, the Ministry of Education has facilitated the way for universities to communicate their achievements by letting universities establish the higher education council. But the communication should have grass root level clearances before the top management presents 'achievements' to the national meetings. Otherwise, the implementation will remain live only in reports.

Communication to all levels of personnel must remain active from start to finish keeping everyone involved and working towards a common goal. Without a common understanding about what is happening, confusion and uncertainty about the future can result in resistance strong enough to stop any reengineering effort (Penrod & Dolence, 1992).

The communication in the case universities is poor, both internal and external, and needs immediate improvement. Universities need to communicate the paradigm to everyone concerned and foster an environment that rewards teamwork, creativity, and value-added thinking (Hammer, 1995). Otherwise such overlooking of communication may cumulate and finally cause the BPR implementation fail. It is easier to communicate day to day and eliminate the confusion than trying to take remedial action ones the accumulation of confusion mounts up.

**IT INFRASTRUCTURES**

BPR initiatives would attempt to utilize IT to link teaching and learning process across the functional boundaries of academic departments. Information should become an institution wide resource and should be transferred and accessed and institutionalized (Ford *et al.* 1996). According to MoE informant, the Ministry of Education has exerted considerable effort to make sure that universities have appropriate IT infrastructures.

Information technology is both an enabler and a driver for BPR implementation. However, the information system is only a tool to be manipulated by human beings. It is therefore important to acquaint the staff with the new technology mainly through training. The information technologies are hoped to be enlarged and be available to the users in the near future, according to MoE informant. Still the available ones are encouraging and hence will not hinder the implementation process as this study found out. The failure in getting appropriate connection and usage of information technology is highly attributed to universities' leadership commitment rather than absence of opportunities, according to MoE informant. The student information management system in Bahir Dar University can be regarded as breakthrough to the university. However, there is still the business as usual tendency around the registrar that instructors are required to submit students' grades in both SIMS and in hard copy. Similarly, the IT infrastructure is better in AAU as there are broad band connections in every office in the university and the university's website becomes prudent and continuously updated.

**ROLE OF MOE IN KEEPING HARMONY/SYNCHRONIZATION**

For the development of any country, educated and qualified man power is needed. Different sectors in that country should work harmoniously with the country's goal and vision. As a result, universities play pivotal roles for such support because they are the source of skilled man power. Besides, to realize the country's wide transformation process and zeal for development, universities are expected to play leading role in BPR implementation. Although the need seems to be felt by the top level of the country, informants in the case study fully support the idea of reforms in universities old education system.

The Ministry of Education should play monitoring and supporting role for universities for the full implementation of BPR. The new universities have both advantages and disadvantages for being new. The fact that there is no deep rooted old organization culture reduces the possibility of resistance for the new change. Besides, there might be few resources to restructure and the new systems to be established will be according to the requirements of BPR. On the other hand, being new also has disadvantages in resource shortage and getting experienced personnel for the core processes obtained. In both cases, MoE is expected to play organizing role. According to MoE key informant, so far the attempts are not sufficient. For example, the existence of course alignment system in BDU for undergraduate students and major-major curriculum for the equivalent students in AAU is evident for failure in curriculum harmonization between the case universities.

**ADEQUACY OF FINANCIAL RESOURCES**

Financial resources are obviously important to move the initiatives, since without enough funding any efforts would end meaningless and stagnant. Therefore, budget allocations to BPR should be viewed as a long-term investment to get favorable results which would give profit to the organization (Kotnour, 2001). Since the BPR is a deliberate tool for effective transformation and the country in general needs the change, appropriate budget has been considered since the conception of BPR.

It was realized from the discussions that in order for BPR to happen successfully, a university needs to have an adequate amount of funding sufficient to implement change and to back up unpredictable circumstances or uncertainty. BDU's informant support the above idea that to the best of his knowledge, there has never been financial shortage in real sense as there is a possibility of transferring budget from one account to the other within the university. Therefore, finance is not the restrictive factor in the case universities. This is really the much unexpected finding in this study because literatures claim that in developing countries finance is one of the major constraints for BPR implementations.

**PROSPECTS OF BPR IN THE CASE UNIVERSITIES**

The government invested huge investment and will continue to invest on higher education institutions to accomplish the desired goal. All the sought goals and the vision of the country to join middle income countries in the coming twenty years will only be possible through skilled and able manpower. Similarly, information technology will make BPR effective and efficient or dull and nonsense otherwise; it all depends on how individuals manipulate it.

The research findings were gathered till the mid of 2012 and it may be early to make a comprehensive judgment about the fate of BPR in Ethiopia universities. But it is still possible to evaluate whether the tool is on the right truck to its way of success. The study found out that the resource shortages are not of major threats for BPR implementation. But the human aspect of the implementation seems lagging behind the expected and deserves attention in the case universities and probably to other universities in the country. *"BPR is the new concept to our country and hence people may not be fully involved and be dedicated to the process at once. There will be a tendency to look backward to business as usual. There should be extensive communication to clear out doubts from the BPR teams and especially from the top management of the universities"* (Informant MoE).

This implies that it is of great responsibility to the top management of each university to the full implementation of BPR. There should also be strong and sustainable commitment and above all continuous communication to the staff. ''*There seems to be role confusion in the implementation of BPR in our university. These days, there is no even specific office for the BPR team and the communication seems almost dead. I think there should be top management stability in the area. If there are turnover on the executive side, it will be difficult for the newcomers to address the issue on time and as required.*'' (Informant BDU)

Therefore, the prospect of BPR implementation lies on the effectiveness of the top management of universities. If there are committed executives with higher dedication and resume the implementation afresh, still the prospect is not dark. Regular communication with the staff, allocating budget for the infrastructure, and instilling sense of belongingness in the staffs' mind are the means to make the prospect even bright. Otherwise, there will be a huge lose of the country's resource which could have brought better result had it been invested in some other change management tools. In all cases, there will not be excuse for failure and if at all happens it will be to the executives' negligence.

Generally, getting the top managements' undivided attention in facilitating BPR success factors; communication, motivation, reestablishing qualified team for executions, and resources on the one hand and getting the stakeholders involvement in all matters on the other hand remain major challenges for BPR implementation in Ethiopia Universities.

## 8. CONCLUSIONS AND RECOMMENDATION

**CONCLUSION**

It is to the country's need and a question of survival in the global environment for Ethiopia higher education to go through transformation which demands radical change from the theory loaded and talk and chalk method of delivery to the student centered and practical oriented education system.

This study found out few problems with many of the core processes identified as the building blocks of BPR in the case universities' studies. Change management that includes cultural and structural changes is well asserted by both sets of findings as a core element of BPR implementation in the studies. However, the implementation deviates from the study especially in BDU despite considerable improvements from the past practices. Hence the process is rather better referred to as business process improvements than of business process reengineering.

The communication problem exists in the case universities. Such problems are both internal to the staff and external among the other universities. A lot needs to be done in communication especially within the staff because their irreplaceable responsibility for the actual implementation

The Ministry of Education's involvement is found to be low especially in the curriculum harmonization. As a result, differences in the undergraduate programs between the case universities BPR studies exist. And such differences may create student transfer and employment problems, if implemented according to the studies. Its involvement in facilitating information technology in the universities in collaboration with telecommunication is encouraging.

The enormous initiation of the government and its readiness to support universities with the needed resources and the overall country's plan for transformation can be taken as furculum for the BPR implementation. However, threats will also overshadow if there will not be commitment from the top management, as the cases these days, and if the staff continue to remain passive for the implementation. As a final point, the prospect for the BPR success heavily lies on the hands of the top management in each university.

**RECOMMENDATIONS**

The government universities had established council and used to communicate every three months. Such communication is very important to learn from one another and to search for solutions together for common problems. The meeting is also important to harmonize the country's BPR studies implementation since many of them have similar departments, schools, or institutes and to keep core curriculum uniform throughout the country. Therefore it is highly recommended that the council should resume its work in a better and more frequent manner.

The Ministry of Education is responsible for the overall implementation of BPR in all higher education institutions of the country. Not only should it facilitate the necessary resources to universities, it should also supervise whether the studies share uniformity, where they should, and supervise the implementation on time and accordingly.

There should also be regular communication about each progress to the staff as such communication can develop trust in the system and indicate clear role each staff should play. It will also diminish the impact of rumors. Especially for BDU, there should be clear and responsible body with identified place to monitor the overall implementation of its BPR.

The staffs should also be demanding in getting information about BPR implementation, communicate when problems are observed immediately with the concerned officials, and be part of the solution since the universities achievement will be the sum total of individual staff efforts put all together. There should be togetherness and team spirit to develop synergy and still the top managements of the universities are responsible to foster all these.

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# EVALUATION OF MICRO FINANCE FINANCIAL AND OPERATIONAL PERFORMANCE: A CASE STUDY OF DCSI

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**ABSTRACT**

*Micro finance Institutions (MFIs) should work towards institutional Profitability and sustainability; because these factors are the most comprehensive and reflect their ability to continue operation in the future.. As a result, this research project describes financial and operational performance of Dedebit Credit and Saving Institution (DECSI) - Mekelle Branch, with the main objective of "evaluating financial and operational performance" of the branch as a case study. The researcher focuses mainly on the outreach, portfolio quality, profitability, productivity, efficiency, financial management, and financial sustainability of the branch's performance. Data for the study was from primary source through unstructured personal interview with different management bodies of the institution and secondary sources of financial statement and operational data were analyzed via different techniques and performance indicators. In order to see the trend in performance, five years data (2007 to 2011) were used and revealed using tables, figures, and ratios. The major findings of the study indicate that, the performance of the branch have declined in terms of outreach, efficiency, productivity, profitability and financial sustainability in last year (2011). However; the overall performance of the branch is encouraging. It attains operational self sufficiency beyond threshold, ROE and ROA are attractive and an average portfolio at risk is too low (only 0.75% for days 91 to 180). In addition; the branch has good potential in terms of clients since it is located in the city.*

**KEYWORDS**
asset/liability management, financial performance, Micro finance, operational performance, poverty.

## 1. INTRODUCTION

Provision of financial services is one of the important economic inputs in the effort to reduce poverty and empower economically marginalized segments of the society. These marginalized poor people have limited access to financial services from the formal financial institutions especially in developing countries. Because formal financial system has inadequate geographical outreach, lack of adequate management system, lack of skilled manpower, high risk perception and inadequate collateral, poor people found it difficult to obtain adequate amount of credit and were charged high rates of interest by monopolistic moneylenders (Tiruneh, 2006).

Microfinance is created in response to the missing credit market for the poor. In the developing countries most recently for instance, governments are also incorporating Microfinance in their strategies towards achieving the Millennium Goals that involves halving extreme poverty by the target date, which is 2015. Given the complex nature of poverty together with the current Microfinance intermediation approach, it is however, becoming increasingly difficult to judge whether such programs should be advocated as a means of poverty alleviation (Irobi, 2008). The micro-finance revolution has changed attitudes towards helping the poor in many countries and in some has provided substantial flows of credit, often to very low-income groups or households, who would normally be excluded by conventional financial institutions. Bangladesh is starkest example of a very poor country, where currently roughly one quarter of rural households are direct beneficiaries of these programs (Khandker, 2003).

Microfinance is the provision of a broad range of financial services such as deposits, loans, payment services, money transfers, and insurance to poor and low-income households and, their microenterprises. Microfinance services are provided by three types of sources: formal institutions, such as rural banks and cooperatives; semiformal institutions, such as nongovernment organizations; and informal sources such as money lenders and shopkeepers. Institutional microfinance is defined to include microfinance services provided by both formal and semiformal institutions. Microfinance institutions are defined as institutions whose major business is the provision of microfinance services (Asian Development bank, 2005).

The microfinance sector in Africa is quickly expanding, and institutions have increased their activities. In fact, African Micro Finance Institutions (AMFIs) are among the most productive globally, as measured by the number of borrowers and savers per staff member. They also demonstrate higher levels of portfolio quality, with an average portfolio at risk over 30 days of only 4.0 percent. Still, they face many challenges. Operating and financial expenses are high, and on average, revenues remain lower than in other global regions. Efficiency in terms of cost per borrower is lowest for African MFIs. Technological innovations, product refinements, and ongoing efforts to strengthen the capacity of African MFIs are needed to reduce costs, increase outreach, and boost overall profitability. Overall, African MFIs are important actors in the financial sector, and they are well positioned to grow and reach the millions of potential clients who currently do not have access to mainstream financial services (Anne-Lucie et al, 2005).

When we came to Ethiopian financial sector, until the initiation of financial sector reforms in 1993, state-owned banks were the only authorized providers of financial services in country, although a few small informal private financial institutions existed. Responding to unsatisfied gap in financial services for micro and small-scale enterprises, formal MFIs began emerge.

Institutionalization of microfinance is evolved after the Ethiopian government issued the proclamation No.40/1996. Because, NGOs, government agencies, and cooperatives and others perform micro credit delivery and savings mobilization in the country, in a scattered and inconsistent way, the government took the initiative to establish the regulatory framework in order to facilitate the sound development of the microfinance industry (Arega, 2007). This resulted in institutionalization of 29 MFIs (AEMFI, 2009)[7] which are currently operating in the economy.

The Ethiopia's 1996 law on Licensing and Supervision of Micro-Financing Institutions evidently shifted the basis of microfinance from humanitarian-oriented projects to a more commercial orientation as incorporated financial intermediaries. Despite the limited format permitted by the regulatory framework, Ethiopia has a relatively large number of licensed MFIs, with strong rural penetration and high operational efficiency, some reaching significant scale. Nevertheless, the system has some weaknesses in terms of supervision, compliance with regulatory norms, governance, and lack of flexibility. Prior to 1996, microfinance in Ethiopia (apart from traditional informal mechanisms) consisted primarily of projects by some 30 NGOs with mainly humanitarian objectives and was not based on sound, sustainable financial principles. Default rates were high, with little attempt at savings mobilization. Although Ethiopia was a leader in Africa in moving to treat MFIs as financial intermediaries, it has only gradually moved toward promoting financial self-sufficiency. The interest rate was initially fixed at 12.5% above the maximum rate for commercial banks. Although the ceiling was removed in 1998, most MFIs were slow to go above the previously mandated rate of 12.5%, reflecting both the influence of the regional governments and the view that the poor cannot afford higher rates. With a floor of 6% on savings, they found it difficult to cover the relatively high costs involved and had to depend on subsidies and concessional funding. By 2002, however, most MFIs were charging 18-24% (flat rate) and achieving high levels of operational self-sufficiency. While Ethiopian MFIs had kept costs low by international standards, that had come in part through complementary efforts of government agencies, especially to support the regional MFIs and implementation of the government's agricultural input credit scheme. All MFIs were depending to some extent on a combination of government support and donor funding, although a few had been moving toward full financial sustainability (William et al, 2003).

The absence of financial institutions which can provide financial services to the poor was one of the obstacles that hindered the undertaking of rehabilitation and development activities after downfall of socialist administration of Ethiopia. As a response, Dedebit Credit and Saving Institution /DECSI/ was established in 1994 as one development wing of the Relief Society of Tigray (REST) to provide financial services to the poor households. After 3 years of its operation, DECSI was reregistered in the form of a Share holding Company as a legal entity in 1997 following the proclamation of the National Bank of Ethiopia. With such commitment, DECSI has been working widely in rural and urban Tigray for the last 21 years. Currently DECSI has providing financial services through 139 offices, 8 main branch offices and 15 micro finance collateral based branches. Up to now Birr 4 billion loans have provided, over 407,780 active loan clients and have around 2000 staff employees. Mekelle branch is one of the 15 branches which located in Mekelle city (DECSI, 2011).

The main aim of this study is to analyze the financial and operational performance of this branch of the DECSI as a case study. The main performance measurement indicators are incorporated to measure the performance of the branch.

## 2. STATEMENT OF THE PROBLEM

The overall objectives of all MFIs in the world would be; (1) mobilizing the vast majority of the poor people in order to participating in the economic activity with little support from the institutions and (2) making profit for their continued existence. To attain these objectives the institutions should work towards institutional Profitability and sustainability; because these parameters are the most comprehensive and reflect the ability of the MFI to continue operating in the future. This is possible only if the institutions are measure their financial as well as operational performance using measurement indicators which are developed by different scholars.

The objectives of DECSI in brief are food security, creation of job opportunity and stimulating the local economy. To achieve these objectives the institution should be financially viable and sustainable. Judging success and progress based on size of amounts dispersed, repayment levels and numbers of clients in a scheme may sometimes lead to wrong conclusion. Moreover; international best practice in microfinance around the world suggests, good financial analysis is the basis for successful and sustainable microfinance operations. Some would even say that without financial analysis MFI will never achieve sustainability.

The success of an enterprise to a great extent depends upon its financial and operating performance. A careful and well-planned financial management is needed for raising resources and utilizing them effectively. The financial performance of an enterprise greatly influences its operational results and business efficiency. Besides, healthy financial and operating performance of microfinance institutions is obviously very important for a well functioning financial system in developing countries. Therefore, it is highly significant to evaluate the financial performance of DECSI in relation to efficiency in mobilizing the required credit and savings, and effectiveness in utilization of these resources. For this purpose DECSI - Mekelle Branch is selected. Hence, the present study entitled "Evaluation of Financial and Operational Performance: A Case Study of DECSI - Mekelle Branch is intended to make a detail examination of the financial and operating performance of this selected Branch.

## 3. OBJECTIVES OF THE STUDY

### MAIN OBJECTIVE

The main objective of this study is to analyze the financial and operational performance of DECSI by taking Mekelle branch as a case study.

### SPECIFIC OBJECTIVES

The specific objectives of the study are focuses on the following points:-

1. To assess the outreach of the branch
2. To examine the quality of portfolio of the branch
3. To evaluate asset/liability management of the branch
4. To assess how well the branch is operating
5. To find out whether the branch cover its operational cost or not with its earned profits
6. To assess whether the institution make necessary adjustments to the subsidies, inflation and portfolio at risk or not

## 4. JUSTIFICATION OF THE STUDY

The importance of microfinance institutions to one country is multidimensional; at glance, poverty eradication, healthy financial circulation, and contribution of economic growth of the country. Therefore, the success of micro-financing operations has a paramount importance in the development endeavor of the country. The rationale of the study is aimed at shading some light as a contribution to address the problem, to waken up further researchers in these institutions and suggest possible recommendations. Furthermore, the findings of this research will be disseminated to officials in of the institution to take whatever benefits of the study.

## 5. SIGNIFICANCE OF THE STUDY

In spite of the fact that DECSI Mekelle branch has been undertaking its financial and operational performance based on its own procedures and time, this study may indicate the gap that the institution might not have been considered yet. Therefore, the study adds value to the institution's managers, policy makers and workers so that they can evaluate their performance once again. The study may also indicate the direction for latter research work in the area as well.

## 6. SCOPE OF THE STUDY

The outcomes of the research are more pleasing if it was be able to cover more branches of the institution. However; due to the shortage of time to study and the scattered nature of the locations of the branches in the region, the scope of the study limited to the Mekelle branch which is located in Mekelle city. Moreover; the study was also delimited to the assessment of financial and operational performance of the branch for the last five years starting from 2007 up to 2011.

## 7. RESEARCH METHODOLOGY

### SAMPLING TECHNIQUE

This is analytical research based on a case study approach. Because of scarcity of resources at disposal and time limit given to the study; and more important the locations where the branches exist are so scattered; using convenience sampling technique one branch was chosen by the researcher to make thorough investigation believing that it will throw a highlight as to the performance of the other branches of DECSI . For this end a recent five-year data were gathered to best describe the performance.

### TYPES OF DATA COLLECTION

This study has conducted based on secondary as well as primary data. The secondary data were gathered mainly from financial statements (balance sheet and income statement) and operational report of the branch. Other sources of data were gathered from DECSI main office, bulletins, government regulations, bank reports and internet. The primary data were collected using unstructured interview with the branch officials and the employees who have relevant task with the study area.

### METHODS OF DATA ANALYSIS AND INTERPRETATION

The data are scrutinized to facilitate and to make clear for analysis. The data are analyzed using different statistical tools. The raw data are analyzed, summarized and presented in tables, graphs and charts. Then interpreted to give solutions for the research problem by using ratios; because, ratio analysis is a financial management tool that enables managers of microfinance institutions to assess their progress in achievement. Moreover, trends of the ratios used to

measure the performance of each year; because, it is important to show the trends of several accounting periods to determine changes in performance. The data that were collected are both qualitative and quantitative in nature and the researcher used descriptive method of data analysis.

**LIMITATIONS OF THE STUDY**

Even if, the primary data fill the gap where the secondary data were unavailable, some data still unavailable; so that certain measurement parameters excluded from the study. In addition; financial constraint and time period limit are also what the researcher faced challenges while conducting this study. In addition, for this study purpose only one branch is selected and only five years data were gathered to best describe the performance of the branch.

## 8. REVIEW OF RELATED LITERATURE

**THEORETICAL REVIEW**

THE ROLE AND CONTRIBUTION OF MICROFINANCE

Most poor people manage to mobilize resources to develop their enterprises and their dwellings slowly over time. Financial services could enable the poor to leverage their initiative, accelerating the process of building incomes, assets and economic security. However, conventional finance institutions seldom lend down-market to serve the needs of low-income families and women-headed households. They are very often denied access to credit for any purpose, making the discussion of the level of interest rate and other terms of finance irrelevant. Therefore the fundamental problem is not so much of unaffordable terms of loan as the lack of access to credit itself.

The lack of access to credit for the poor is attributable to practical difficulties arising from the discrepancy between the mode of operation followed by financial institutions and the economic characteristics and financing needs of low income households. For example, commercial lending institutions require that borrowers have a stable source of income out of which principal and interest can be paid back according to the agreed terms. However, the income of many self employed households is not stable, regardless of its size. A large number of small loans are needed to serve the poor, but lenders prefer dealing with large loans in small numbers to minimize administration costs. They also look for collateral with a clear title - which many low-income households do not have. In addition bankers tend to consider low income households a bad risk imposing exceedingly high information monitoring costs on operation (Vetrivel & Chandra, 2010).

Microfinance services include micro credit, savings, money transfer, and insurance products. Over the past 20 years, microfinance has developed into a specialized method of providing these financial services at sustainable rates to the economically active poor households, who cannot access the commercial banks of the formal sector, be it for socio-cultural, systemic, geographical, or other reasons.

Target clients of the microfinance industry use and benefit from small savings and loans to grow rather than establish their micro-businesses. The key motivator for microfinance clients is access to (rather than price of) reliable and continuous financial services. The chief motivation for repaying a loan is the promise of future access to another loan and this is often re-enforced with social collateral such as group guarantees. This explains why microfinance can operate successfully in the informal sector without physical collateral, enforceable contracts, and commercial courts or enabling legislature. The laws of microfinance are embedded in good operating practices and re-enforced by social contracts.

Microfinance is not simply banking for the poor; it is a development approach with a social mission and a private sector-based financial bottom line that uses tested and continually adjusted sets of principles, practices and technologies. The key to successful microfinance lies in the ability of the provider to cost-effectively reach a critical mass of clients with systems of delivery, market responsiveness, risk management and control that can generate a profit to the institution. Typically, this profit is ploughed back to ensure the long-term survival of the institution, i.e. the continuous provision of services demanded by its clients. The two long-term goals of microfinance are thus substantial outreach and sustainability.

Microfinance can be an effective and powerful instrument for poverty reduction, helping poor people to increase incomes, build assets, and reduce their vulnerability in times of economic stress. But it must be provided by institutions who strive to become effective business entities by developing a strategic vision for viability and the necessary professional skill and capacity. Often, promising microfinance institutions need support to address constraints during their first 2-5 years in order to secure their ability to provide market-responsive services in a viable manner (Lene, 2010).

THE SCHOOLS OF THOUGHT ON MICROFINANCE SERVICE DELIVERY

**I. THE WELFARISTS**

The Welfarists are arguing that MFIs can achieve sustainability without achieving financial sustainability. They contend that donations serve as a form of equity and as such donors can be viewed as social investors. Unlike private investors who purchase equity in publicly traded firm, social investors don't expect to earn monetary returns. Instead these donor investors realize a social (intrinsic) return (Meyer, 2002)[12]. Welfarists tend to emphasize poverty alleviation, place relatively greater weight on depth of outreach relative to breadth of outreach and gauge institutional success according to social metrics. This is not to say that neither breadth of outreach nor financial metrics matter. Welfares feel these issues are important, but they are less willing than Institutionist to sacrifice depth of outreach to achieve them.

**II. THE INSTITUTIONISTS**

The Institutionists are arguing that unless we build sustainable MFI that are capable of running independent of subsidies the promise of MFI of eradicating world poverty will not be met. They argue that sustainable MFI helps to expand outreach and reach more poor people. Hence even if the two schools of thought seem contradictory, they are actually not. Their goal is eradicating poverty. Their difference lies on how to go about it. Welfarists say we have to target the very poor and profitability shall be secondary. They prefer to charge subsidized and low interest rates by relying on donor funds. Institutionist argues donor funds are unreliable and MFI must by themselves generate enough revenues to reach more poor people in the future. They favor marginally poor customer. They charge higher interest rates and focus on efficiency of MFIs to generate profit and reach more poor. The debate between the two schools of thought is endless and today many players in the MF industry use both the welfarists and instututionist perspective to assess the performance of MFIs (Basu, 2004).

**METHODOLOGY OF MICROFINANCE**

Majority of the microfinance institutions offer and provide credit on a solidarity-group lending basis without collateral. There is also a range of other methodologies that MFIs follow. Some MFIs start with one methodology and later on move or diversify to another methodology so that they do not exclude certain socio-economic categories of clients. So it becomes important to have a basic understanding of methodologies and activity of MFIs. MFIs are using different models to provide financial services to the poor. Robert Cull et al, in their global analysis of lending micro banks, found three main categories: Group, Individual and credit unions (Cull et al., 2007).

**I. GROUP LENDING**

Group based lending is one of the most novel approaches of lending small amounts of money to a large number of clients who cannot offer collateral. The size of the group can vary, but most groups have between four to eight members. The group self-selects its members before acquiring a loan. Loans are granted to selected member(s) of the group first and then to the rest of the members. Most MFIs require a percentage of the loan that is supposed to be saved in advance, which points out the ability to make regular payments and serve as collateral. Group members are jointly accountable for the repayment of each other's loans and usually meet weekly to collect repayments. To ensure repayment, peer pressure and joint liability works very well. The entire group will be disqualified and will not be eligible for further loans, even if one member of the group becomes a defaulter. The creditworthiness of the borrower is therefore determined by the members rather than by the MFI.

One of the best-known institutions for lending and savings money, in Bangladesh, is the Grameen Bank. Grameen Bank mainly targets women (98% of their clients are women) on the basis that women repay their loans better than men and due to the oppression they need more favor. It is believed that loans expanded to women benefit all the household members with improved level of food intake, health, and education. Average loans range from US$100 to US$200 for a period of 3-12 months. The loan amount varies from country to country. Average loan amounts tend to be higher ($500 or more) in countries in transition of adapting to this system. On one hand, the group formation guides to lower transaction costs for the MFIs, but on the other hand there are social costs related with this process. These social costs can be a negative restraint to group borrowing and joint liability approaches, and include coercive peer pressure, loss of faith and the likelihood that the poorest and most vulnerable will remain excluded or further stigmatized. Such social costs are higher in some societies than in

others, depending upon underlying social relations (which influence the ease/difficulty of group formation) and the distances that people must travel to participate in-group activities. In rural areas, these costs can be higher.

**II. INDIVIDUAL LENDING**

Unlike MFIs, there are very few conventional financial institutions which provide individual loans to low-income people because poorer clients are considered higher risk clients due to their lack of collateral, plus the labor-intensive nature of the credits and hence the lack of profitability of small-credits. BASIC BANK (Bangladesh), Bank Rakyat Indonesia (BRI) in Indonesia, ADEMI in the Dominican Republic and are some examples of successful lenders to poor clients. However, BRI does request collateral and a loan co-signer, while ADEMI and BASIC BANK will take the best collateral it can.

**III. CREDIT UNIONS**

Credit unions are the organizations that are formed on the basis of financial relation of savings and loans between its members. They accumulate savings from its members and provide short-term credit to the needed members. The demand for loans in general exceeds the supply of savings. In most rural areas credit unions are still the solitary source of deposit and credit services, besides the informal financial market. Because credit unions have social as well as commercial objectives, they may have a key role to play in offering pro-poor financial services. It has been observed that some women have not benefited much from the credit unions because the level of savings required is too high. Credit unions have achieved financial self-sufficiency within the last few decades. According to one statistics from the World Council of Credit Unions (WOCCU), by the end of the 1980s there were about 17,000 credit unions in 67 developing countries around the world. These unions maintain nearly 9 million members and 60% of these members are from Africa and the Caribbean Islands. These credit unions handled approximately US$2 billion in deposits and share capital. It is estimated that they are disbursing US$300 million in small loans to about 1.5 million small businesses.

**MICROFINANCE IN ETHIOPIA**

Initially, micro credit started as a government and non-government organizations motivated scheme. Following the 1984/85 severe drought and famine, many NGOs star started to provide micro credit along with heir relief activities although this was on a limited scale and not in a sustained manner (IFAD 2001). The Government also sporadically provided loans largely for the purchase of oxen through its Rural finance Department of the Ministry of Agriculture and cooperatives. But these loans were not based on proper needs assessment and no mechanism was in place to monitor their effectiveness. In many cases, these loans were not to be repaid and might have fostered a culture of not repaying loans (Getachew and Mengesha, 2005).

During the command economic system (1974-91), the Development Bank of Ethiopia (DBE) and the commercial Bank of Ethiopia (CBE) were also involved in extending loans to cooperatives largely in response to the government's pressure. A massive default by the cooperatives following the demise of the command economy along with its extensive control systems, however, forced the CBE has continued to provide loans for the purchase of fertilizers and improved seeds on the basis of regional government guarantees. The DBE has also been providing loans to micro and small-scale operators in some selected towns. This scheme was, however, based on donors fund designed in the form of revolving fund, and essentially based on a limited scale in terms of the number of clients covered. Funds were simple been given from the DBE to clients identified and screened by the Trade and Industry Breaux of regional Gove rally led to a low loan recovery rate (DBE 1999). In line with this, the early formal microfinance activity is the DBE (Development Bank of Ethiopia) Place, Pilot Credit Scheme, initiated in 1990 under the Market Towns Development Project [1], implemented in 1994. While many NGOs Programmers that emphasizes both credit and savings began in early 1990s. For example, the REST Credit Scheme of Tigray (RCST) (now Dedebit Credit and Savings Institution, DECSI) was launched in 1993; Sidama Saving and Credit scheme (now Sidama Microfinance Institution) was established in 1994; Oromia Credit and Saving Scheme (Now Oromia Credit and Saving S.C.) Started in 1996 ( Dabba, 2006).

Currently, there are around 29 licensed MFIs reaching about 2.2 million active borrowers with an outstanding loan portfolio of approximately 4.6 billion Birr. Considering the potential demand, particularly in rural areas, this satisfies only an insignificant proportion. Out of 29 registered MFIs across the country 14 MFIs are very active in their activities.

**EMPIRICAL EVIDENCE**

Ethiopian microfinance has made remarkable progress over the past decade, reaching almost two million clients in a country of 77 million people. Nevertheless, financial services for the low-income population, poor farmers and MSMEs are still characterized by limited outreach, high transaction costs for clients, a generally weak institutional base, weak governance and a nominal ownership structure as well as dependence on government and mother NGOs (Pfister et al., 2008).

The study conducted by Kereta (2007) is simple correlation econometric analysis technique and descriptive analysis technique was employed in the analysis process and reveals the following results:- he studied the industry's outreach and financial performance using simple descriptive analysis using graphs and percentage growth rates. The result of his study showed that in terms of breadth of outreach, MFIs are serving an increasing number of clients in each year from 2003-2007. The industry's growth rate in terms of number of clients is 22.9%. In terms of depth of outreach measured by average loan size Ethiopian MFIs have a loan size which is on average nearer to the standard $150 (Birr 1352). So they can be considered pro poor. From sustainability angel, the MFIs are operationally sustainable as measured by ROA and ROE and the industry's profit performance is improving overtime. Dependency ratio as measured by the ratio of donated equity to capital decline and the ratio of retained earnings to total capital is rising letting the industry to be financially self sufficient. The study also found that PAR is at 3.2% for the period from 2005-2007 which is in comfort zone.

The study conducted by Adeno (2007) on one of the largest MFIs in Ethiopia Amhara Credit and Saving Institution (ACSI) was descriptive type of study and results that:-by 2005, the institution was operationally and financially self sufficient at 119.9% and 115.3% respectively. The operating cost was as low as five cents in 2005. ACSI also has a high portfolio quality, as delinquency rates are around 1.9**%** of >30 days**.** The average loan and savings balances, ROA, ROE, Yield on Portfolio and Operating Expense to Total Expense over the five year were 2,702.00 Birr, 4.5% , 13%., 16.58% and 65.95% respectively. Moreover; ACSI performed debt to equity ratio and loans to total assets ratio of 230.88% and 68.73%.

The study conducted by Arega (2007) on three (Aggar, Harbu and SFPI) MFIs which are found in Addis Ababa. The study was exploratory and descriptive methods and some results revealed by him are:- the ROA and ROE ratios were for Aggar, was unfavorable (negative) results with the ROA ratios of -6.66% and -7.11% in 2005 and 2006 fiscal periods and with the ROE ratios of -9.04% in 2005 and - 13.05% in 2006. The unfavorable ratios were the results of the huge net loss reported by the firm during the years. SFPI's ROA ratios for 2005 and 2006 fiscal periods were 0.60% and 3.01% respectively. It also reported ROE ratios of 1.14% and 5.68% in 2005 and 2006 fiscal years, respectively. The ROA ratios for Harbu were 0.28% in 2005 and -2.58% in 2006. While the ROE ratios for the same years were 0.97% and -3.40% respectively. Regarding the productivity ratio for Aggar was 210 for 2006 and 191 in 2005. For SFPI during 2005 was 505 and 515 in 2006. A ratio of active borrowers per credit officer for Harbu in 2005 was 134 whereas the 2006 result as per the analysis indicated 283, which reflected a 111.19% increment. The PAR > 30 for Aggar was 23.05% and 20.67% in 2005 and 2006 respectively. Harbu also reported a portfolio at risk ratio of 3.67% during 2006.

The above review of literature highlights that all the studies so far conducted are mainly discussing the problems and prospects of Micro Finance Institutions in general at Macro-level. The researcher also observed in the review of literature that there are no specific studies conducted mainly to understand the problems of Micro Finance with regard to finance and operation at a District level. Hence, the researcher felt it appropriate to take up the present study entitled "Evaluation of Financial and Operating Performance – A case Study of Dedebit Credit and Saving Institution (DECSI) - Mekelle Branch to state the financial and operating problems.

## 9. DISCUSSION AND ANALYSIS

To find the major out puts of the study and to suggest important recommendations, the collected data was analyzed and discussed. Accordingly, the analysis and important findings of the study were as follows.

**9.1 OUTREACH/COVERAGE**

The number of client is a sheer indicator for how MFI is reaching the poor. Expanding the number of clients being served is an ultimate goal of almost all microfinance interventions. Outreach can be measured in terms of coverage i.e. the number of clients served and volume of services (total savings on deposit and total outstanding loan portfolio) and depth i.e. to which extent the institution serves poor households and which economic sectors as it mentioned in the literature part of the study. However, this study focuses on only to the coverage of the branch's clients in terms of gender, total active clients, total active clients' growth and percentage of female.

**TABLE 3.1: ACTIVE CLIENTS SERVED BY THE BRANCH**

| DESCRIPTION | 2007 | 2008 | 2009 | 2010 | 2011 | AVERAGE |
|---|---|---|---|---|---|---|
| MALE | *3728* | *3049* | *4014* | *2508* | *1700* | *3000* |
| FEMALE | *3260* | *4119* | *5032* | *3202* | *2100* | *3543* |
| COOPERATIVES | *0* | *0* | *45* | *10* | *55* | *22* |
| TOTAL | *6988* | *7168* | *9091* | *5720* | *3855* | *6564* |
| CLIENT GROWTH | - | *2.58%* | *26.83%* | *-37.08%* | *-32.60%* | *-10.07%* |
| % of FEMALES | *46.65%* | *57.46%* | *55.35%* | *55.98%* | *54.47%* | *53.98%* |

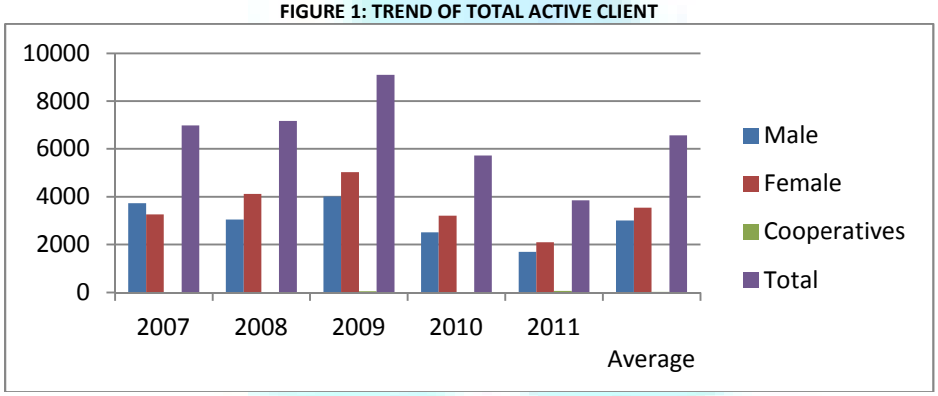
**Source:** Computed from Annual Reports

**9.1.1 ACTIVE CLIENTS**

Active clients are the number of individuals who currently have an outstanding loan balance with the branch or are responsible for repaying any portion of the gross loan portfolio. As one can see from the Figure 1, the branch have a total average number of 6564 active clients for the last five years. The number of clients reaches to 9,091 in the year 2009 but declined to 3855 number in the year 2011. The decline in number of clients is due to decline of new loans provided to new clients. As per the explanation of the branch's staff in position, the decline of loan is the government policy to combat the inflation of the country. Because of the above reason, the growth of client declined by the 10.07% in average for last four years as shown in figure 2. The rates of declines are 37.08% and 32.60% in 2010 and 2011 respectively. This implies that the branch is losing its active as well as potential clients. Therefore, it will be dangerous for the branch's profitability as well as re-maintenance of the lost clients in the future.

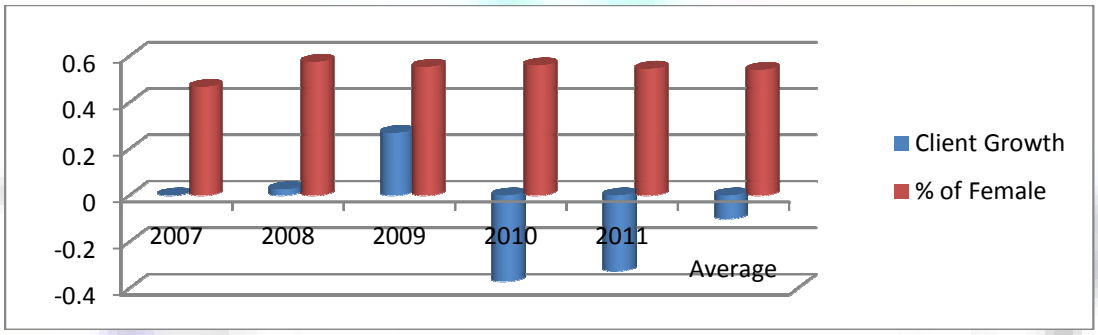
The cooperative societies are the associations of certain group involved in different business activities and each of them have at least 10 members of both sex. The branch serves an average of 22 cooperative societies for last 3 years as shown in the Table 3.1. The branch gives loan for 55 cooperatives in year 2011 and it is good performance as compared to year 2010 which are only 10 cooperatives. Though the branch declines loans significantly in 2011 to the individual clients, the number of cooperatives has increase in this year. Increasing the number of cooperatives is very important for the branch to maintain its client because one cooperative contain at least 10 members as mentioned above.

**FIGURE 1: TREND OF TOTAL ACTIVE CLIENT**




Regarding how the branch serving the women can be seen by comparing the number of female to male. They represent an average of 53.98 % of the active clients of the branch and the trends of the ratios shown on the Figure 2, ranges from 46.65% - 54.47%. Most of the times, women are hardly served by financial institutions because they couldn't get collateral to be served and are incapable of paying their debt as compared to men. However, the branch has been serving them even more than male clients. This implies that the outreach of the branch as regard to female is encouraging.

**FIGURE 2: TRENDS OF GENDER AND CLIENT GROWTH**




**9.2 PORTFOLIO QUALITIES**

The portfolio quality reflects the risk of loan delinquency. It has a direct influence on the profitability, liquidity, capital adequacy of any MFIs and, therefore, on their sustainability. Management of the portfolio is crucial one for the viability of the loan provision and for the security of clients' savings. If the quality of the portfolio is poor, the MFI cannot continue to operate in the long run. It measures loan repayments collected compared to the total expected outstanding over a given period of time. Therefore, it is important in cash flow projections and monitoring loan repayments.

Since the branch requires collateral to provide a loan, it has no write-off policy to any arrears. Arrears are loan amounts overdue from the originally set repayment time and date. In other terms it is the amount that has become due and has not been received. The arrears rate provides an indication of the risk that a loan will not be repaid. The arrears rate shows how of the loan has become due and has not been received. However, the arrears rate understates the risk to the portfolio and understates the potential severity of a delinquency problem, because it only considers payments as they become past due, not the entire amount of the loan outstanding that is actually at risk. As a result, the researcher tries to measure only portfolio at risk in this study.

### 9.2.1 PORTFOLIO AT RISK (PAR)

PAR is a better indicator or measure of risk associated with the portfolio. The loan portfolio are said to be portfolio at risk, means that the loans are infected to be in arrears. In other terms the calculation takes into account the outstanding loan balance amounts that have one or more installments of principal past due more than a certain number of days. The PAR helps to see the real picture of the risk of delinquency particularly in credit terms with small loan payments over a long credit period.

Table 3.2 describes PAR for all years and different days' intervals. Concerning to this measurement indicator; the lower the ratio, the better the performance the branch achieves. In general, the trend of this ratio shows that the branch performs well in 2009 for all PARs except for days more than 365 (2.17%). From the trend we can learn that, at the time of good achievement in performance especially in terms of number of clients, the quality of portfolio increases. As the loan provision declines by the branch, the clients motives towards a work also declines, as a result they could unable to pay their loans back to the branch. As per the responses of the officials of the branch, the branch starts to take legal action for the amount not paid back after the first notice to the clients as far as they are collateralized.

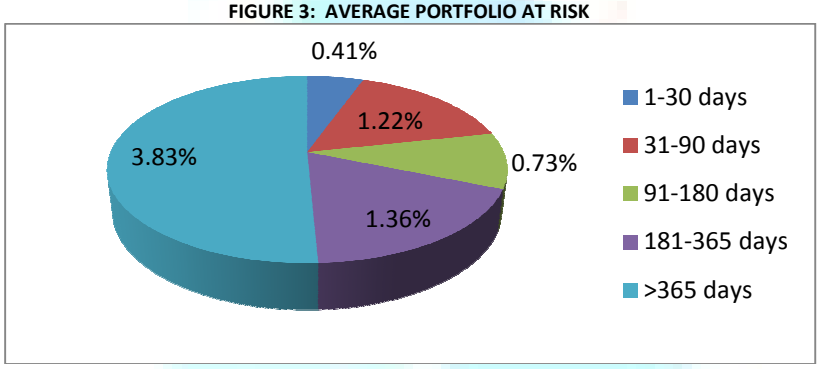
**TABLE 3.2: TRENDS OF PORTFOLIO AT RISK RATIO**

| Particulars | 2007 | 2008 | 2009 | 2010 | 2011 | Average |
|---|---|---|---|---|---|---|
| 1-30 days | 0.46% | 0.44% | 0.22% | 0.47% | 0.46% | 0.41% |
| 31-90 days | 0.51% | 3.34% | 0.41% | 0.82% | 0.47% | 1.11% |
| 91-180 days | 0.77% | 0.52% | 0.50% | 1.11% | 0.73% | 0.73% |
| 181-365 days | 0.66% | 1.16% | 0.50% | 1.90% | 2.56% | 1.36% |
| >365 days | 0.69% | 1.28% | 2.17% | 3.24% | 8.83% | 3.24% |
| >30 days | 2.66% | 6.44% | 3.68% | 7.37% | 14.00% | 6.83% |

**Source:** Computed from Annual Reports

The branch displays portfolio quality with PAR of an average of 0.41% which past due date of up to 30 days. The minimum ratio was 0.22% in the year 2009 and the maximum ratio was 0.47% in 20010. The PAR with more than 30 days up to 90 is 1.11% in average. The minimum ratio of the branch is 0.41% in 2009, while the maximum is 3.34%in 2008. For the PAR above 90 but bellow 181 days, for days above 180 up to 365 and for the days above 365, the ratios are 0.73%, 1.36%, and 3.24% respectively. The maximum ratio ever observed in this study is 8.83% in 2011 for the days 365 and above but the minimum ratio is 0.69% in 2007 as it shown on Table 3.2. The study also examines PAR of the branch by comparing the outstanding balance of all loans with 30 days (PAR > 30) past due payments with the value of current portfolio outstanding. Hence, the result ranges 2.66% to 14%; however, the average over five years is 6.83%.

**FIGURE 3: AVERAGE PORTFOLIO AT RISK**




### 9.3 EFFICIENCY AND PRODUCTIVITY

Efficiency and productivity are indicators that reveal how well the branch uses its all assets and personal resources. The main points discussed under this category are; operating expense ratio, borrower per loan officer, active clients per staff members, average outstanding loan size and average disbursed loan size as an efficiency and productivity indicators. Efficiency measures the cost per unit of output where as productivity focuses on the capacity of credit officers to serve as many clients as possible. Table 3.3 shows that the summary of efficiency and productivity measurements of the branch.

**TABLE 3.3: TRENDS OF THE EFFICIENCY AND PRODUCTIVITY MEASUREMENTS**

| Particulars | 2007 | 2008 | 2009 | 2010 | 2011 | Average |
|---|---|---|---|---|---|---|
| Operating Expense Ratio | 3.11% | 3.46% | 3.00% | 3.26% | 7.30% | 4.03% |
| Borrowers per Loan Officer | 874 | 796 | 1010 | 520 | 275 | 696 |
| Active Clients per Staff Member | 159 | 153 | 165 | 99 | 55 | 126 |
| Average Outstanding Loan Size | 2,157.26 | 3,705.33 | 6,145.72 | 6,237.41 | 6,470.68 | 4,943.28 |
| Average Loan Disbursed size | 2,736.16 | 4,525.10 | 4,854.87 | 5,305.08 | 4,966.92 | 4,477.62 |

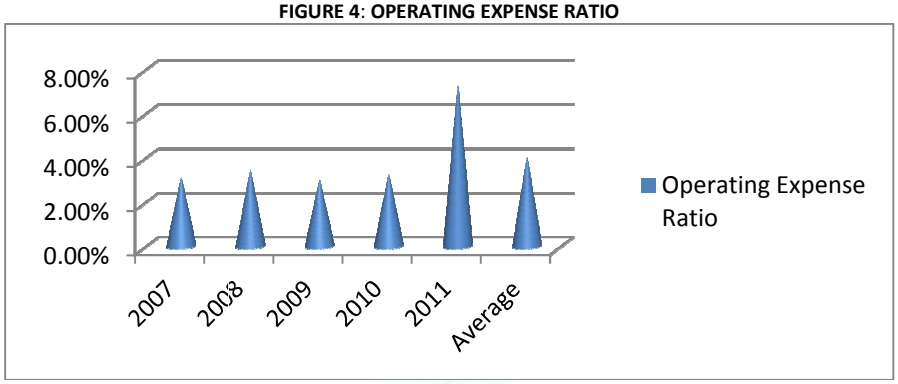
**Source:** Computed from Annual Reports

### 9.3.1 OPERATING EXPENSE RATIO

This ratio is the most commonly used measurement indicator of the efficiency. It reveals that, how much administrative and personnel expenses to the branch's yield on the gross loan Portfolio. It is consists of operating expenses as a percentage of average gross loan portfolio. The lower the ratio, the more efficient the branch is. The operating expense ratio enables the reader to easily compare the expenses of the branch with its revenue.

As it illustrated in Figure 4, the average expense ratio for the last five years is 4.03%. That means the operating cost is as low as 0.0403 Birr (4 cent) for 1 Birr portfolio. The trend of this ratio ranges from 3.00% to 3.46% in the periods of 2007 to 2010 which all are below the average. However, in the recent year (i.e. 2011), this ratio rises drastically to 7.30%. This indicates that the branch's efficiency is very poor in 2011 as compared to the rest four years. The branch's operative expense increases more than double in this year and on contrary gross loan portfolio decreases in certain amount. The main operative expenses that the branch incurs in this year are the bad debt account amounts that has past due date. If the branch won't collect the amount of those bad debt account time and again till declined to insignificant amount, it deteriorates the profit of the branch and it may unable to manage later if accumulated to large amount. This account changed in to expense account with the amount of 25%, 50% and 100% of the days 91 to 180, 181 to 365 and above 365 past due date amount (arrears) of the loan portfolio, respectively.

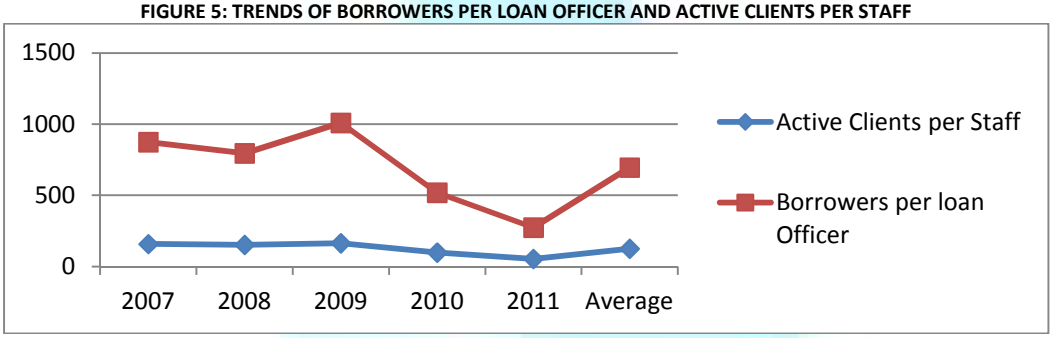
FIGURE 4: OPERATING EXPENSE RATIO




**9.3.2 BORROWERS PER LOAN OFFICER**

It measures the average caseload of each loan officer and indicates loan officer productivity as well as the institution's operational efficiency. It is calculated by dividing number of active borrowers to number of loan officers of the branch. Its interpretation is that, the higher the number the better the performance. As discovered in the Table 3.3, the average caseload to loan officer is 696. In other word, each loan officer serves an average of 696 clients in a year. The branch performs well in 2009 with number of 1010 borrowers per loan officer. On contrary, the branch's efficiency declined in years 2010 and 2011 as compared to the previous three years. To have the whole picture it is better to see Figure 5. This happened due to decline in loan size as it mentioned under outreach of the number of clients. The other element that makes this figure lower and lower is the increments of loan officers while the number of clients going decline. The reason that the officers increase is as per the officials response, in the later years even if the clients decline the size of task increases in the branch as the services increase as years goes increase. The loan which had been taken at early years has been collected in later years. Collection of loan takes more time than providing the loan.

FIGURE 5: TRENDS OF BORROWERS PER LOAN OFFICER AND ACTIVE CLIENTS PER STAFF




**9.3.3 ACTIVE CLIENTS PER STAFF MEMBER**

This measures the personnel productivity; i.e. the overall productivity of the branch's total human resources in managing clients who have an outstanding loan balance and are thereby contributing to the financial revenue of the branch. It is calculated by dividing the number of active clients to the total number of staffs of the branch. The average number in this measurement is 126 as shown in the Table 3.3. The highest number is 165 in 2009 and the lowest number is 55 in 2011. The productivity of the branch is better for earlier three years and declined for the later two years as it can be seen from the trend of the ratios illustrated on the Figure 5. Meaning of this ratio is just like the active clients per staff member ratio, the higher the ratio of the borrowers per staff member, the more productive the branch is. Here, still the branch's staff number increases while clients decline. If the trends go like that in the future, the branch's personnel productivity will be under a question. However; the convincing idea here is the lending takes less time than collecting the loan as the branch provides loan at early years.

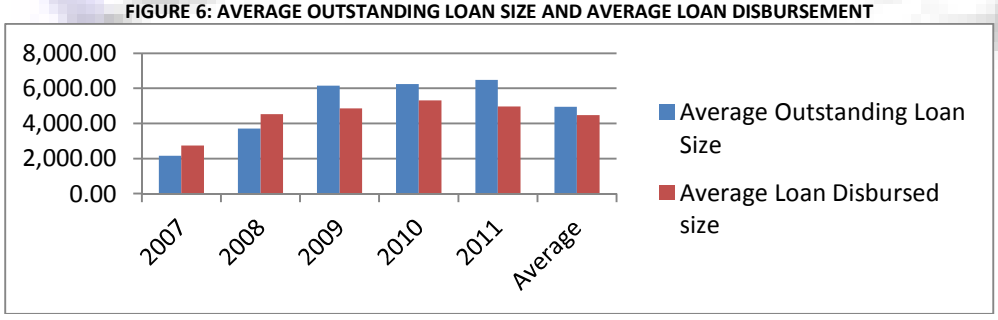
**9.3.4 AVERAGE OUTSTANDING LOAN SIZE (AOLS)**

It indicates the average outstanding loan balance per client. As it mentioned in the literature part of the study, this ratio is a profitability driver and measures how much of each loan is available to clients. The average ratio for the branch is 4943.28 for last five years. The trend of this ratio increases year by year through all years. It is 2157.26 in year 2007 and it grows to 6470.68 in 2011. For the latter three years, the ratios become high as compared to the former two years as it is displayed in the Figure 6 and Table 3.3. Therefore, this indicates that the branch's performance is better for the last three years as compared to the first two years. However, this ratio does not guarantee for profitability when a number of clients go declining.

**9.3.5 AVERAGE LOAN DISBURSED**

This ratio measures the average value of each loan disbursed to the clients. The five years average ratio is 4477.62. The ratios are almost doubled for last four years as compared to the year 2007 which is 2736.16. Figure 6, demonstrates the trend of the average loan disbursed for the last five years in the branch. This measurement helps the branch to predict the future average disbursements to the client. Since the branch provides loan to different categories of the clients with various loan size ranging from seven months' salary of the employee to more than five million Birr to business individuals; it is difficult to say exactly the performance of the branch is good but in general, by observing the figure one can say the branch's performance is progressive in first two years and almost constant in last three years. The higher the amount of the ratio, the better the performance of the branch is as compared to the rest of the years.

FIGURE 6: AVERAGE OUTSTANDING LOAN SIZE AND AVERAGE LOAN DISBURSEMENT



**9.4 FINANCIAL (ASSET/LIABILITY) MANAGEMENT**

As it described at the literature part of this study in chapter two, Asset/ Liability management is the ongoing process of planning, monitoring and controlling the volumes, maturities, rates and yields of assets and liabilities. The basis of financial intermediation is the ability to manage assets (the use of funds) and liabilities (the source of funds). Asset/liability management is required on different levels; like interest rate management, asset management, leverage and liquidity management. To measure the branch's financial performance by using this indicator, the researcher tries to calculate the following ratios. These are yield on gross portfolio, portfolio to asset, cost of fund and debt to equity ratios.

**TABLE 3.4: FINANCIAL MANAGEMENT RATIOS**

| Particulars | 2007 | 2008 | 2009 | 2010 | 2011 | Average |
|---|---|---|---|---|---|---|
| Yield on Gross Portfolio | 10.90% | 8.75% | 5.78% | 8.18% | 10.48% | **8.82%** |
| Cost of Fund | 2.29% | 2.31% | 3.00% | 2.41% | 2.77% | **2.56%** |
| Portfolio to Asset | 77.29% | 87.48% | 81.15% | 82.76% | 82.52% | **82.24%** |
| Debt to Equity | 32.13% | 26.06% | 15.88% | 21.87% | 33.45% | **25.88%** |
| Current Ratio | 4.09 | 4.83 | 7.29 | 5.56 | 3.98 | **5.15** |

**Source:** Computed from Annual Reports

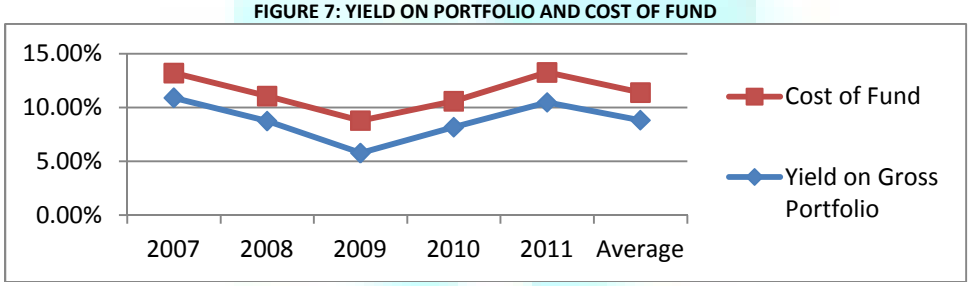
**9.4.1 YIELDS ON GROSS PORTFOLIO**

Portfolio Yield is calculated by dividing total cash financial revenue by the period average gross portfolio. It measures the gross loan portfolio's ability to generate cash financial revenue from interest, fees and commissions. It does not include any revenues that have been accrued but not paid in cash or any non-cash revenues in the form of post-dated checks, seized but unsold collateral. Portfolio yield is the initial indicator of an institution's ability to generate revenue with which to cover its financial and operating expenses. So, it is an easy way for the branch to calculate the actual rate obtained and really received in interest payments on its loans. As per the Figure 7 and Table 3.4, the ratio (5.78%) in the year 2009 is the least value for the last five years; whereas, the ratios recorded in 2007 and 2011 with percentage of 10.90 and 10.48 respectively are the highest and considered as better achievements as compared to other years. However, as it compared to the lending interest rate of the institution (9.9-18%), the average yield on portfolio ratio (8.82%) is shows less achievement. From the result it is possible to say either the branch lends the major loans to the lower rate and some it is uncollected or the loans given is not collected as planned or both. Whatever of the reasons, the branch couldn't achieve the intended yields. As it is designed to cover administrative costs, cost of fund, default and inflation, the branch should attain at least the minimum rate. The implication of fewer rates than the intended rate is indication of inefficiency of the branch towards the portfolio yield and it is the risk to the branch.

**9.4.2 COST OF FUND**

The Cost of Funds Ratio is calculated by dividing interest and fee expenses on funding liabilities by period average funding liabilities (average deposits) of the branch. It measures the average cost of deposits (all savings) in the branch. The cost of funds ratio shows whether the branch has gained access to low cost funding sources such as savings or not. However, this advantage can offset to some extent by the higher administrative cost of mobilizing savings. Regarding this ratio, the lower value shows the better performance of the branch. As result, the branch performs well in 2007 as compared to other years. The trend of the ratio reveals variability through last five years, having the value of 2.29%, 2.31%, 3%, 2.41%, and 2.77% ratios in the years 2007, 2008, 2009, 2010 and 2011, respectively. Even though the variability of ratios, it looks like constant and stable. The average ratio is 2.56% for all five years as illustrated on Figure 7. The interest paid for saving/deposit/ is 4%; so when as compared to this value, the cost of fund indicates the better performance. The possible reason here is, the branch minimizes it cost of fund by relending its fund including profits attained at every time. The better achievement of this performance is important to the branch to balance the yield to portfolio rates that not enabled to achieve.

**FIGURE 7: YIELD ON PORTFOLIO AND COST OF FUND**



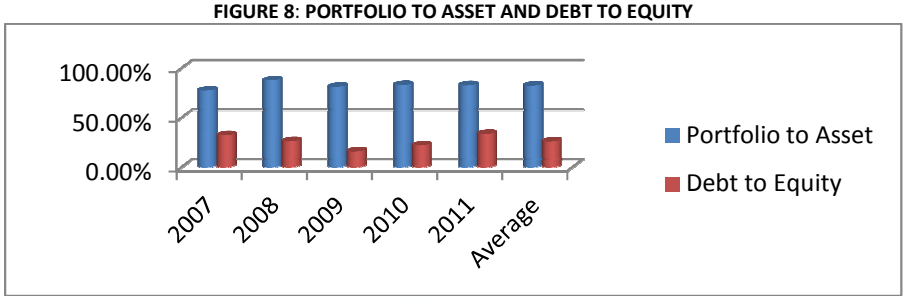

**9.4.3 PORTFOLIOS TO ASSETS**

This ratio measures the productivity of asset. It is calculated by dividing gross loan portfolio to assets. It highlights how efficiently the branch structured. Loans are generally the most productive account on the balance sheet because they generate a high rate of financial income. The branch has to use funds to create assets that produce the most revenue. Therefore, maintaining a high percentage of assets in the loan portfolio is crucial to be productive and profitable. On response of this, the branch scores 87.48% (the highest ratio) in 2008 and 77.29% (the lowest ratio) in 2007. The average ratio for last five years of the branch is 82.24% and which almost nearly equal to the last two years ratios as shown on Figure 8. This means that the branch's asset in average of 17.76% (100%-82.24%) has been deployed on other than the loan portfolio. In general, the meaning of the high value of the ratio is more important if and only if the branch does not utilize its assets to some other businesses activities which generate more income than the loan portfolio. Accordingly, the branch's total fixed assets to total asset is about 0.22% (average total fixed asset/average total asset) as it can be seen from the balance sheet of the branch attached at appendix part. There for, it is possible to say that the branch has deployed its assets efficiently in productive assets.

**9.3.4.4 DEBT TO EQUITY**

The Debt to Equity Ratio is called Leverage ratio and calculated by dividing total liabilities by total equity (i.e. it shows, the amount of debt per a Birr invested in capital). In other words, leverage is the extent in which debt financing is employed as compared to equity financing. Clients' savings and any commercial borrowings serve as a base for this ratio. At this point, the total liability includes everything the branch owes to others; like deposits, borrowings, accounts payable and other liability accounts. Total equity is total assets less total liabilities. Leverage ratio is the simplest and best-known measure of capital adequacy because it measures the overall leverage of the branch. Leverage ratio is of particular interest to lenders because it indicates how much of a safety cushion (in the form of equity) there is in the institution to absorb losses. The lower the ratio the safer is the branch. On the other hand, too low debt to equity ratio indicates inefficient use of equity. One can see clearly from the Figure 8 that, the branch has attain the highest ratio (33.45%) in 2011 and which is very far from the lowest ratio (15.88%) attained in 2009. The average for the last five years the branch has attained is 25.88%. Too much debt to equity ratio in 2011 indicates that the branch have leveraged more when as compared to other years. However, in general, the branch's debt to equity ratio implies, the branch has too much less debts than equities in its financing structure. That means almost 75% of the asset is the branch's own resource; so that the branch has that much capacity to run the business without external resources. In the contrary, the branch should not forget the benefits of the external cheap source of fund especially saving from the customers.

FIGURE 8: PORTFOLIO TO ASSET AND DEBT TO EQUITY

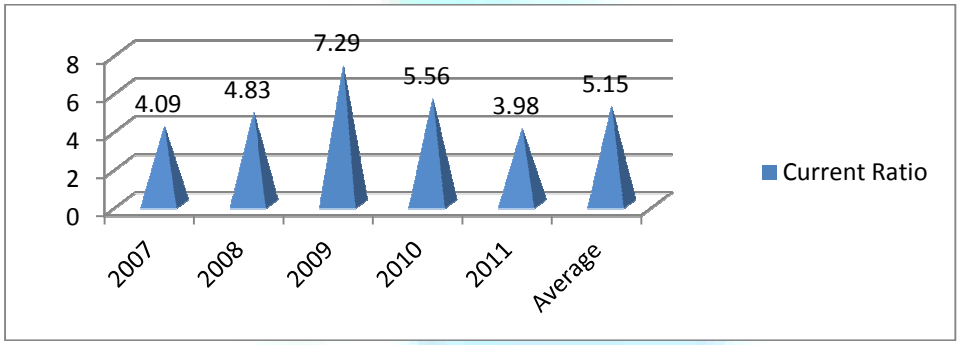



**9.3.4.5 CURRENT RATIO**

Current ratio compares the current assets with the current liabilities. It is also known as 'working capital ratio' or 'solvency ratio'. As it is known in financial management, current ratio is categorized under liquidity ratio. Liquidity ratio refers the ability of firms to meet their short-term obligations. The ratios which indicate the liquidity of companies are Current ratio, Quick/Acid-Test ratio, and Cash ratio.

In this study, the researcher considers only current ratio as one of the financial management indicator because it is commonly used by commercial financial institutions. This ratio measures the liquidity of the current assets and the ability of the branch to meet its short-term debt obligation. Thus, it compares assets, which became liquid within approximately twelve months with liabilities of the same period. The higher this ratio means, the greater the short-term solvency of the branch. Conversely, too high current ratio is the indication of the poor management of current asset since it is put idle. The current ratio of most successful MFI is ranges from 1:1 to 5:1.

FIGURE 9: CURRENT RATIO




As it shown on Figure 9, the branch's solvency is highest in 2009 with the ratio of 7.29:1 and lowest in 2011 with ratio of 3.98:1. The average current ratio is 5.15 times for the last five years. Concerning the trend, the ratio steadily increases at the first two years in the same way it drastically increases in the third year to the peak point. Finally, it starts to decline for the rest two years. In general, regardless of the variability of the ratios in the years under the study, the average ratio is favorable for the branch.

**9.3.5 PROFITABILITY AND FINANCIAL SUSTAINABILITY**

Profitability and sustainability are used to measure the financial performance of the institution in general. They reflect the ability of the institution to continue their operations and growths in the future by covering it costs with revenues generated from operation. Whether the institution working for profit or not, investors (depositors) always prefer profitable and sustainable institution. Sustainability and profitability of the institutions can be measured and analyzed using different ratios.

TABLE 3.5: PROFITABILITY AND FINANCIAL SUSTAINABILITY RATIOS

| Particulars | 2007 | 2008 | 2009 | 2010 | 2011 | Average |
|---|---|---|---|---|---|---|
| OSS | 282.77% | 217.81% | 164.59% | 213.15% | 127.08% | **201.08%** |
| ROA | 5.52% | 4.24% | 1.95% | 3.68% | 2.13% | **3.51%** |
| ROE | 7.29% | 5.35% | 2.26% | 4.49% | 2.85% | **4.45%** |

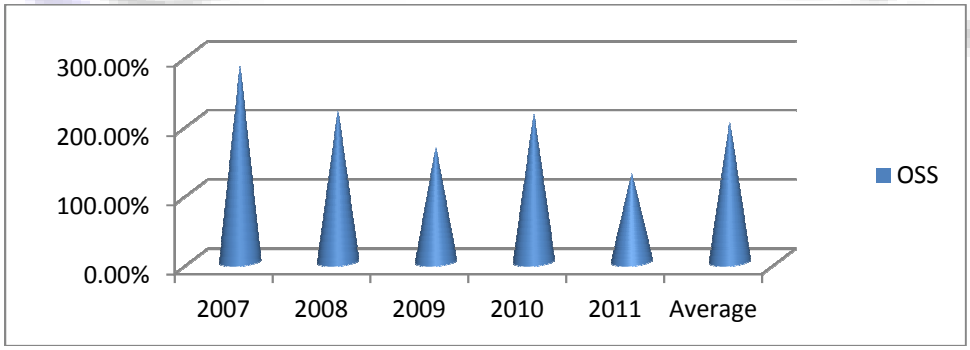
**Source:** Computed from Annual Reports

Financial sustainability encompasses both financial self sufficiency and operational self sufficiency. The only difference between the two is the former need analytical adjustments to the inflation, subsidy (subsidized cost of fund and in-kind subsidy) and portfolio at risk especially loan impairment loss allowance and write-off. Even if the branch cover all it costs and haven't yet subsidized by any organization, there are some unrecognized cost exist at main office level and need adjustments. These costs categorized under subsidized cost of funds (for instance, training given to the staffs of the branch, temporary transfer of employees from other branch or main office to the branch without payroll recognition of the branch as the researcher observes, and so on). Therefore, doing analytical adjustment is difficult at branch level in this moment since the branch hasn't recognized any costs covered by others. By considering the challenges of adjustments at a branch level in this moment, the researcher focuses on only to the operational self sufficiency, unadjusted return on asset and return on equity ratios. The Table 3.5 shows the ratio of those elements in each year and the average of five years.

**9.3.5.1 OPERATIONAL SELF-SUFFICIENCY (OSS)**

OSS measures how well the branch can generate sufficient revenue from operations to cover operating expenses, financing costs, and loan losses. In addition to operating expenses, the financial expenses of the branch included in this calculation by considering it as operating cost. In other terms, all direct costs are included in determining OSS of the branch.

FIGURE 10: OPERATIONAL SELF SUFFICIENCY

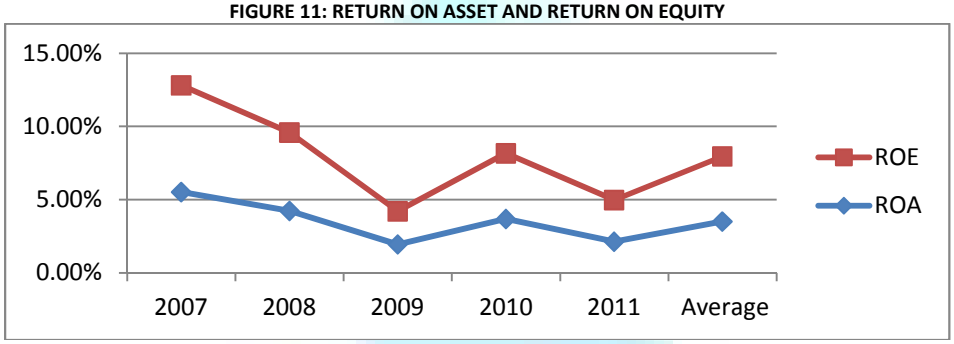


The importance of this ratio is directly reflected negatively on the branch's net worth, if the branch being unable to reach at least break even point of OSS which is 100%. OSS of 1 (or 100%) is the first stage that the branch or any MFIs should reach in its way to long term financial viability. Unless or otherwise, the branch waits for donor compensation to keep on its operation; because, its equity will be reduced by losses. When the breakeven value of 1 has been reached, the focus needs to be shifted to the question of financial self-sufficiency. Eventually, when one comes to the outcome of this measurement, the branch achieves OSS ratio above break-even points for years under the study. It performs the highest in 2007 with OSS ratio of 282.77% and it also performs the lowest ratio in 2011 which is 127.08%. The lowest achievement is due to the huge amount of doubtful expense recognition by the branch in this year and that undermines the income of the year. The average ratio for five years is 201.08%. Regarding the trends of this ratio, it is going decline through the years except in 2010 as it is depicted in the Figure 10. In general, however, the branch performs operationally self sufficient though out the years under the study. This implies that the branch can cover its operating costs and interest on savings.

**9.5.2 RETURNS ON ASSETS (ROA)**

ROA measures how well the branch uses its total assets (equity and liabilities) to generate returns. Its importance is for both internal management and external stakeholders to evaluate profitability of the branch so that the investors (depositors) build their trust on the branch's fate to operate in future. It is calculated by dividing the average net income earned by the branch to average amount of total assets. The higher the ratio means, the better the branch's performance. As it illustrated on Figure 11, the average ROA ratio is 3.51% for last five years. The maximum value in 2007 (5.52%) is drastically decline to 1.95% in 2009. When the trends considered, the achievement is good in former two years as compared to the later years. Even if, certain improvements observed in 2010, it again declines in 2011. The one possible reason for the decline in the year 2011 is, due to the huge amount of the bad debt recognition in this year. In overall, the achievement of the branch on profitability is encouraging as it attains an average of 3.51%.

**FIGURE 11: RETURN ON ASSET AND RETURN ON EQUITY**




**9.5.3 RETURNS ON EQUITY (ROE)**

The ROE measures the rate of return earned on net worth or equity invested. The higher return implies the better performance the branch achieves. It is calculated by dividing net operating income by average equity.

The performance of the branch as to ROE ratio as shown on Figure 11 above, reveals good achievement in 2007, when it compared to other years. Its value in this year is 7.29%, but this value declines in the following two years; results 5.35% and 2.26%, consecutively. The branch shows improvements in year 2010; however, it again decline in 2011. Its average ratio is 4.45%. Regarding the trends concern, trends of ROE is almost the same as to the trends of the ROA regardless of the value difference. The possible reason for decline in 2011 is the same as described under ROA above. The achievement of the branch as regard to this performance is also the same as to ROA and it is favorable, because most of the empirical literatures conducted so far indicate more or less similar figures.

## 10. CONCLUSION AND RECOMMENDATION

**CONCLUSION**

Regardless of its social mission, the branch has been serving as financial intermediary. In order to achieve its social as well as financial intermediary mission, it should first financially viable and operational efficient. Therefore, any effort regarding the performance of the branch should be measured time and again to have the exact position of the branch. Then after, it is easy for managers to take whatever decisions to the branch's sustainable and efficient performance. Based on the discussion and analysis made, the following conclusions are made on the evaluation of the financial and operational performance of the branch.

Concerning the outreach performance of the branch, the number of clients in terms of total client size shows significant decline especially in recent two years. Actually, this is happen due to decline of loan size as well as less or no services for new clients; because of government policy to combat inflation growth. The trend of female borrowers as compared to male is almost constant and balanced throughout the years except few variations. This indicates that female can borrow equally as male in the branch. In spite of the fact that, Portfolio at Risk is not a headache of the branch since it is collateral based branch; it performs high portfolio quality of an average of 3.24% for PAR over 365 days. As it described by some literatures, this performance is considered as a high quality. The quality of portfolio is more pleasing for days 1 to 30 and 91 to 180 past due date, which have the portfolio at risk of only 0.41% and 0.73% respectively. However; the total PAR greater than 30 days is 6.83%.

With respect to productivity and efficiency; Operating expense ratio, Borrowers per loan officer and Active clients per staff member are the main focus of the study of those measurement indicators. There are increments in operating expense, staff members and loan officers rather than they should have declined to the response of decline of gross loan portfolio and client numbers. This occurred because of the increases of services provided by the branch. The main additional services that the branch started on the letter periods of the study are:- 1) Collection of pay backs from the customers which were not exists at early years of the study, and 2) Local money transfer services like a commercial banks and etc.

The effect of these services deteriorates the productivity and efficiency of the branch; because, services like collection of loan does not generate additional income rather its effect revealed directly on profitability of branch. However; the loan numbers declines over the last two years, the average outstanding loan size and the average loan disbursed size have positive result on the profitability of the branch.

From financial management point of view, especially asset and liability management is very important to the healthy operation of any business. Regarding yield on portfolio, the branch performs below the official rate of interest (9.9 - 18%); that means the branch hasn't been attained its intended yield on portfolio. The possible reason that the researcher found is the high amount of bad debt that has transferred to expense account. However, this ratio will be maintained in the future when the bad debt account paid back because of collaterals. On contrary, the branch performs efficiently on the cost of fund; it pays below (average 2.56%) the official interest rate (4%). This achievement is the result of the different businesses activities performed by the branch to generate revenue. Concerning the debt to equity and portfolio to asset ratios, the branch is mobilizing an average of almost 74 % (100%-25.88%) of equity and about 82% of loan portfolio in its balance sheet. The branch also has the current ratio of an average 5.15%; which indicates liquidity is not the problem of branch (i.e. it has the ability to meet it short term obligation) and at the same time it is encouraging.

From profitability and financial sustainability angle of view, it is found that the branch is hopeful though its performance declining over time. It is operational self sufficient as it achieves an average of 201.08% and above breakeven through five years. Its profitability as measured by return on asset and return on equity is also performed well as far as it becomes positive profit.

By considering important contributors to ROA and ROE discussed, the branch has the potential to achieve more than what it currently performing; if it were kept its client in constant growth. Moreover; the huge amount of bad debt account recorded as expense affects the returns very significantly.

All in all; what the researcher recognized from the result of the study is that the trend of overall performance of the branch is declining especially in the year 2009 and 2011. However; the branch still has a good potential and it can performs more than what it currently performing after taking some corrective measures.

**RECOMMENDATION**

Based on the findings of the study, the researcher suggests the following recommendations by considering all important points in mind for successful performance of the branch in future endeavor. Even if, execution of government policy is mandatory to the branch to respond against inflation, the branch should have at least some other mechanisms to retain their clients as an active client to the number they had before the last two years; because, it will be difficult to the branch to get back those clients in the future.

Though the ratio of Portfolio at risk is too small, the amount on arrears should be repaid to the total amount before accumulated to a large number; because, its effect revealed on operating expense and then eventually on profits of the branch.

Too high expense of the branch understates the profit of the branch especially in last year (2011). The source for expense is the amount of bad debt, which is about one fifth of total expense of the branch. There for, this accumulated amount should be repaid back to the branch in order to reflex the true profit of the branch. As long as the branch is collateral based, the importance of collateral is under the question to the lenders otherwise.

When the number of clients declines significantly, the branch should immediately watch out their operating expenses, client per staff and client per loan officer to be cost efficient and personnel productive. Actually it may be difficult to fire and hire staffs now and then, but it is at least possible to maintain the existing number of clients and staffs. Otherwise, the branch should diversify its activities in some more other means to generate income. The best examples that the branch doing is local money transfer and pension payments on behalf of some other organization. The other potential activities like tax collection, underwriting, housing rental collection, and so on.

The branch should at least first maintain its yield on portfolio as per the intended official borrowing rate and secondly it should try its best to achieve more than the minimum lending rate (i.e. 9.9%). The other point here is regarding current ratio the branch should establish its appropriate rate based on its transaction movement; because holding too low or too high current asset is not feasible for healthy business.

Concerning financial sustainability; financial self sufficiency is very important tool of measurement and it can be measured after some adjustments made; so in order to measure this tool, the branch should record whatever the costs that covered by some other organization including the main office.

## 11. RESEARCH IMPLICATIONS

This paper has laid some groundwork to explore the operation and financial performance of micro finance: A case study of DECSI upon which a more detailed evaluation could be based. Further work is required to develop new study on the contribution and performance of Ethiopian microfinance firms and to design new variables to reflect the institutional sustainability. A larger, comprehensive, and detailed database is also required for a further detailed study on operation and performance of Ethiopian micro financing organizations.

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# LABOUR WELFARE PRACTICES AND SOCIAL SECURITY IN INDUSTRIES

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**ABSTRACT**

*Labour welfare and social security has got a lot of significance with Public Sector,Private Sector and also Multinational Companies.Labour welfare activities in an industrialised society has far reaching impact not only on the work force but also on all facets of human resources.Labour welfare includes all such activities which not only secure existential necessities but also ensures improvement in the spiritual,emotional and other aspects of a worker.The aspect of labour welfare requires an honest and serious approach that money and environment given to employees never go waste. A happy employee is a productive employee.A study on labour welfare and social security is an effort to be perfected in the art of managing people and in these days the most important management is peoples management.Welfare schemes should be regarded as a wise investment which should and usually does bring a profitable return in the form of greater efficiency.In the above background, the article provides a detailed insight in to the various aspects of labour welfare and social security in Indian Industries.*

**KEYWORDS**

Labour welfare, Multi National Company,Public sector,Private sector,Social Security.

## INTRODUCTION

The term welfare is so comprehensive that it leads to various interpretations and meaning.The term welfare is derived from the French phrase welfare which means to fare well.Welfare in a broad concept refers to the state of living of an individual or a group in a desirable relationship with the total environment-ecological,economic and social.After basic pay and incentives the third major component of organisational reward system is welfare and social security benefits some of which are mandated by law and some are voluntary.Adequate levels of earnings,safe and humane conditions of work and access to some minimum social security benefits are the major qualitative dimensions of employment which enhances quality of work life of workers and their productivity.

The term labour welfare has been defined by many experts.The report of International Labour Organisation explains that "Workers welfare should be understood as a meaning such as services, facilities, amenities which may be established in an organisation to enable the persons employed in them to perform their work in healthy congenial surroundings and provide them amenities conducive to good health and moral".

## OBJECTIVES OF THE STUDY

i) To understand the meaning, features and importance of labour welfare and social security.
ii) To study as to why there is a greater need for labour welfare and social security in India as compared to industrially advanced countries.
iii) To provide an insight on the various agencies and labour law legislations in India for labour welfare and social security.
iv) To study the emerging trends in labour welfare and social security in India.
v) To identify problems associated with labour welfare and social security and to suggest suitable remedies to overcome these problems.

## RESEARCH METHODOLOGY

Secondary data has been used to obtain information about various aspects of Labour welfare and Social security.Internet, journals, magazines, text books etc has been the main source of secondary data.

## REVIEW OF LITERATURE

Article 43 of the Indian Constitution clearly states that "The state shall endeavour to secure by suitable legislation or economic organisation or in any other way,a living wage,conditions of work ensuring a decent standard of life and full enjoyment of leisure,social and cultural oppurtunities and in particular the state shall endeavour to promote cottage industries on an individual or co-operative basis in rural areas"

Conventions and recommendations of International labour organisation (ILO) (1949)sets forth a fundamental principle at its 26th conference held in Philadelphia recommended some of the measures in the area of welfare measures which include adequate protection for life and health of workers in all occupations,provision for child welfare and maternity protection,provision for adequate nutrition,housing and facilities for recreation and an assurance of equality of educational and vocational opportunity etc.

**Shobha Mishra and Manju Bhagat(2007)** in their study :Principles for successful implementation of labour welfare activities" stated that labour absenteeism in Indian Industries can be reduced to a great extent by providing good housing facilities,health and family care,canteen,educational and training facilities and other allied welfare activities.If steps are taken at a larger scale to improve the quality of life of the workers it will help in maintaining a environment of Industrial peace.The authors have also opined that the principle of successful implementation of labour welfare activities is nothing but an extension of democratic values in an industrialised society.

**Guddi Tiwary and P.K.Gangopadhyay (2011)** in the article " A review on the occupational health and social security of unorganised workers in the construction industry" have observed that workers in the construction industry are victims of different occupational disorders and psychological stresses in India.The workplace is not proper,the working hours are more than the stipulated hours of work,the working conditions are not congenial in most of the cases and involves risk factors.Their wages are not adequate making it difficult for them to run their families.The hazards includes exposure to harsh environmental conditions like sun,rain,etc.These adverse conditions results in accidents and adverse health conditions.Workers are victims of headaches,backaches,jointpains,skin diseases,lung disorders,etc.The repetitive nature of their work causes boredom and meagre earnings puts them in great stress resulting in behavioural disorders.The authors have concluded by suggesting that in India as the workers are mostly illiterate,it is desirable to impart health education to them to appraise them of the ill effects of work and the remedial measures.Awareness programmes and local group discussions are essential for improving the health status of these working communities.

**K.Kaliyamurthy and J.Shyamala Devi (2012)** in the study " Effectiveness of labour welfare measures in India" has studied the labour welfare measures at KCP Ltd (Cement Division) at Macherla,AP and found that most of the employees were dissatisfied with the productivity linked annual bonus.Many of the workers also expressed dissatisfaction with the working of the Consumer co-operative stores in the company.The study also revealed that improvement should be made in the area of providing subsidized food at the canteen and uniforms to workers should be provided promptly.

**Dr.R.Srinivasan and S.Samarthakani (2013)** in the study " Evaluating Labour welfare measures at Perambalur Sugar Mills Ltd,Eraiyur,Perambalur district has suggested that to motivate employees special and selection grade scale may be given to those who have completed ten years of service.As workers were found to suffer from fatigue and monotony in work,the author has suggested that job rotations and internal transfers should be implemented to overcome this

problem.The study has recommended improvement in the heating,lighting and ventilation at the work place.The study has also recommended improvement in canteen facilities,recereational facilities and proper safety measures to prevent accidents at the work place.

## ELEMENTS OF LABOUR WELFARE

1. To provide to the workers a better life and health.
2. To relieve the workers from Industrial Fatigue.
3. To improve the intellectual and cultural conditions of living of the employees.
4. To make the workers happy,efficient and contented.
5. Labour welfare is a dynamic concept as new measures are added to the existing ones with the passage of time.

## IMPORTANCE AND CLASSIFICATION OF LABOUR WELFARE

Labour welfare measures make industrial employment attractive and it helps to reduce labour turnover and absenteeism.It helps to buy employee loyalty as good welfare measures leads to employee satisfaction and increased loyalty among the employees.It helps to motivate the employees and increases employee morale.Welfare measures satisfies trade unions and creates and improves industrial relations.

Labour welfare measures provides security to the employees against social risks like old age, maternity, industrial injury, disablement etc. Welfare measures protects the health of the workers and provides safety to the employees against accidents.It helps to improve the quality of work life of employees and it also meets the requirements of various labour law legislations.

Labour welfare activities can be classified into Intra mural activities and extra mural activities.

Intra mural activities means all those amenities and services provided by the employers inside the factory like provision for good canteen,rest shelters,crèches,arrangement for drinking water,washing and bathing facilities toilets etc.

Extra mural facilities means all those amenities and services provided by the employers outside the factory like maternity benefit,social insurance measures like gratuity,pension,provident fund.It also includes facilities like education facilities,housing facilities,recreation facilities,holiday homes etc.

## NEED FOR LABOUR WELFARE

India has a much greater need and importance for labour welfare work.There are certain defects and defeciencies in the Indian labour force that enhances the need for labour welfare activity in the country.

As far as industrial progress is concerned, India is still far behind as compared to other countries.Industrial progress is dependent on the quality and efficiency of labour force which is in a poor state in India.

Labour union movement in India is still in a infancy stage.There is absolutely no unity among unions and there is a high degree of political involvement and vested interests among the leaders.

The health of an average Indian workers is very poor as compared to his western counterparts and this has adversely affected his productive capacity.Hence there is a need for a healthy inexpensive food and facilities in case of medical emergencies.

To arrest the restless and frequent migratory nature of an Indian worker it is essential to provide him adequate housing and proper working conditions.

An average Indian worker is extremely poor.He is unable to provide a healthy life for his family and good education to his children.Being poor he is hardly in a condition to save something for his old age.Hence, he is in need of Provident fund,pensions,gratuity etc.

## AGENCIES FOR LABOUR WELFARE

a) Employers: Employers provide welfare facilities either individually or collectively through associations.They play an important role in providing facilities to the industrial workers.The facilities provided are voluntary in nature as well as statutory like residential accommodation,transport facilities,education facilities etc.Many employers and their various associations are doing welfare activities on their own initiatives.

Almost all cotton mills in the country have provided Dispensaries,crèches,canteens,grain shops,ambulance facilities and clinic facilities in their factory companies.There is an indoor and outdoor grains,co-operatives,school for the education of workers and their children from the employers side.

In India all paper mills provide dispensaries for the free medical treatment of their employees.Similarly cement industries also maintain well equipped dispensaries for the workers.Educational facilities exist in all these centres.

Likewise in sugar industries besides maintaining dispensaries for their workers,majority of factories provide facilities for education of the workers children.They have also opened workers clubs.

In Mining industries The Coal and Mica Mines Labour Fund is now responsible for providing welfare facilities for workers in coal and mica mines.They are providing recreation,play grounds,schools for children and adult education centres.

In Plantation Industries all the tea gardeners in Assam and West Bengal maintain dispensaries for their workers.Big tea estates maintain garden hospital.The small tea and coffee estates are maintaining only small dispensaries.Some estates also make arrangements for feeding the children.

Railway post and telegraph department is maintaining:

1. Hospital and dispensaries.
2. Rest and holiday homes.
3. Maternity and child welfare centres.
4. Staff benefits funds.
5. Consumer co-operative stores.
6. Grain shops etc.

b) Central government and State Government:A number of acts have been passed by the central Government for the welfare of the workers.There is also an implementation and administration of Industrial and Labour laws.The workers of different Industries have been provided welfare facilities under different statutes.The State Government runs various health centres,education centres etc.The State Government has the powers to implement the provisions of various laws,appoint appropriate authorities etc.The keep a strict vigil on the employers as well

c) Trade Unions and Labour welfare agencies:The various trade unions are supposed to raise the welfare of workers and are expected to provide certain labour welfare facilities to their members.There are a variety of trade unions running in the country and they offer educational,sports,cultural and legal facilities to their members.

Some of the important labour welfare activities performed by them include:

a) Organisation of adult literacy and leadership programmes.
b) Trade union colleges set up by INTUC and AITUC.
c) Publication of research activities done by the respective companies.
d) Establishment of libraries.

Mahatma Gandhi established Textile Labour Association (TLA) in 1916 which was considered as a labarotory to make experiments in the sensitive labour field through truth, non-violence and welfare activities.

Mill Mazdoor Sabha runs credit co-operative societies for the members and it also provides:

a) Scholarship to member's children.
b) Issuing books to needy students.

c) It has set up a holiday home at Khandala.
d) It conducts workers education programme.
e) It has its own research wing.

Transport and Dock workers union has got the following facilities:

a) A credit co-operative society.
b) Scholarship to needy students.
c) Undertaking different social, recreational, educational and development activities.

Mazdoor sabha of Kanpur allotted funds to meet unseen contingencies like retirement, unemployment, sickess, death etc.

Rashtriya Mill Mazdoor Sangh (RMMS) is running a workers education centre at Khandala.It has also made arrangements for sewing and tailoring classes for family members.

d) Labour welfare works done by social service agencies: In India there are many social service agencies which are playing a vital role in the organisation of welfare.The welfare work done by Mumbai social service league,Seva sadan society womens council and YMCA need special mention in this connection.The United Nations Organisation has also organised many labour welfare works in India.

The United Nations International Childrens Emergency Fund was set up in India with the aim of distributing milk to mothers and children and for the establishment of Maternity house and welfare centres.

## LABOUR WELFARE LEGISLATIONS

Most of the constitutional directives in the matter of protection and welfare to workers have been followed up through central and state legislations.The benefits are available to the workers and employees in mines,docks,plantations,factories,motor transport industries,shops and hotels.

1. Provisions realting to hours of work,conditions of work,leisure,health and safety are to be found in the Factories Act,1948.
2. Dock workers are covered under the Dock workers(regulation of employment) act,1948.
3. Motor transport workers are covered under Motor transport workers act,1961.
4. Workers in the coal mines are covered under Coal mines act,1952.
5. For regulation of payment of wages,bonus etc,The Minimum wages act(1948&1961) is the principal labour legislation.This was followed by the payment of bonus act.
6. Trade Unions act 1926 and Indian Trade Unions act 1960 are the chief enactments dealing with the right of association for collective bargaining.
7. Industrial disputes are covered by the Industrial Disputes act,1947.

The Supreme Court has clearly held that there should be no distinction between the industries in public sector and private sector in matters relating to application of industrial or labour laws.

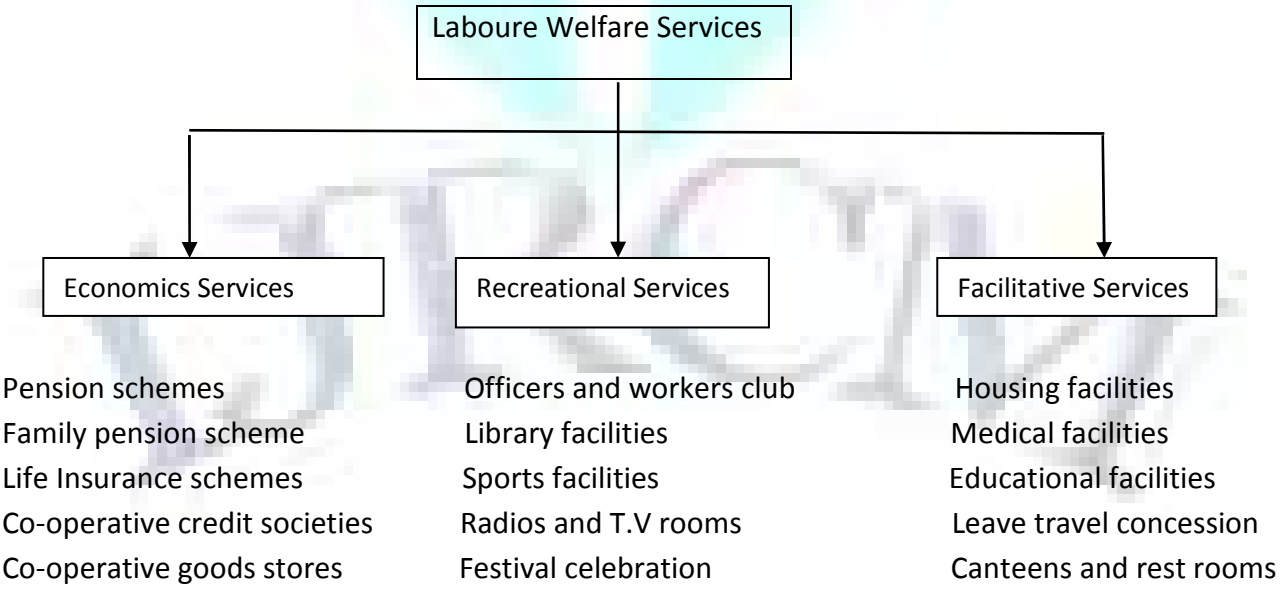
## SOCIAL SECURITY

India has always had a joint family system that took care of the social security needs of all the members provided it had access/ownership of material assets like land.In keeping with its cultural traditions family members and relatives have always discharged a sense of shared responsibility towards one another.

However with increasing migration,urbanization and demographic changes there has been a decrease in large family units.This is where the formal system of social security gains importance.In the Indian context, social security is a comprehensive approach designed to prevent deprivation,assure the individual of a basic minimum income for himself and his dependants and to protect the individual from any uncertainities.

The International labour organisation defines social security as " By social security,we undertake a programme of protection provided by the society against those contingencies against which a individual of small means cannot effectively provide by his ability and foresight".

Social security benefits are provided in India through legislations.Workmens compensation act 1923 enforces the employer to provide compensation to a workman for any personal injury caused by an accident for loss of earnings etc.The employees state insurance act,1948 enforces the employers to provide sickness benefit,disablement benefit,dependants benefit,funeral benefit and medical benefits.The employees provident fund and miscellaneous provisions act 1952,enforces the employer to provide benefits in the form of provident fund and deposit linked insurance.The maternity benefit act,1961 provides for medical benefits at the time of pregnancy and grant of maternity leave and maternity allowance.The payment of gratuity act,1972 provides for the payment of gratuity at the time of retirement.




## EMERGING TRENDS IN LABOUR WELFARE AND SOCIAL SECURITY IN INDIA

Globalisation along with information technology has brought a lot of changes in business processes all over the world.National businesses started spreading their activities across the globe and foreign companies started entering domestic markete.Business process outsourcing,knowledge outsourcing etc has helped domestic companies to do international business by staying domestic.Globalisation has also brought significant shifts in Human resource Management and Industrial relations.While framing labour welfare and social security measures,international and global considerations have to be also considered.

Big organisations are providing various benefits at the middle and top management levels like holiday homes,festival bashes,coffee breaks,picnics,birthday treats,company watches,awards,club membership,flexible hours,vacation trips etc.

However,the conditions at the workers level is slightly different.The present infrastructure for improving labour productivity and ensuring welfare to workers covers only a small segment of the labour force.Out of about 400 million workers in the country,only around 50 to 60 million are covered by some sort of social security.For the rest,a job is the best guarantee for social security right now.The only way for improving the coverage is by providing gainful employment to the entire labour force.Certain recent trends make the achievement of these objectives more challenging.Growth of population in the working age group is at a substantially higher pace than that of the average population.Agriculture used to provide employment to a major part of the work force.However,number of workers engaged in agricultural activities has not increased in recent years and it has even declined in some parts of the country.The pace of growth of jobs in organised sector has slowed down because number of jobs in in public sector which had a 75% share in the organised sector jobs has reduced and employment oppurtunities in the private sector has also reduced considerably.The labour policy has to create new employment oppurtunities and the non-agricultural sector will have to absorb a bulk of the increase in labour force.

95% of the establishments which operate with hired workers employ less than 20 persons and 60% of the workers serve in such establishments.So in future labour welfare policies and programmes should focus on small establishments.

The projections of increase in labour force indicates that 8 to 10 million new entrants are required to be trained every year and against this the vocational training education sector has a capacity of only around 2 million.Labour laws are relevant for the wage employed and not self employed.Out of the estimated total number of workers around 47% are wage employed.Among this 25% are in the agricultural sector where labour laws do not generally apply,12% are in the service sector and around 10% in the mining,electricity,gas&water etc.Among the wage employed,labour laws apply only to those hired on a regular salaried basis and only 1/3$^{rd}$ of the wage employed are hired on a regular salaried basis.Therefore it becomes very clear that the present structure of the labour market is such that labour laws apply only to a small portion of the labour force.

The government has already announced its intention to review some of the labour laws.Subsequently the report of the second national commission of labour has suggested restructuring of labour laws.The restructuring of labour laws must bear in mind that small establishments employing less than 20 persons account for more than 60% of the employment.Health,safety and welfare of workers may be given due importance while reviewing labour laws.

With the ongoing process of liberalisation,privatisation and globalisation,the employment relations are becoming increasing precarious and informalised.The organised sector has been shrinking and more and more workers are finding refuge in the on going informal sector.Unorganised sector forms nearly 80% of the working population in developing countries and this percentage is increasing because there is a decreasing trend in employment oppurtunities in the organised sector.The second national commission on labour submitted its report to the Government of India in June 2002 which inter-alia contained elements of legislation to ensure a minimum level of protection to the workers in the unorganised sector.To provide for social security and welfare to the unorganised sector workers,the government has passed "The Unorganised Sector Workers Social Security Act,2005.It has also been proposed in the 38$^{th}$ session of the Indian labour conference held in September 2002 that all labour legislations should be consolidated and one comprehensive social security law is to be enacted.The conference has also recommended that existing social insurance schemes should be modified and workers covered under social security scheme should be provided with a unique social security number and an identity card.

For workers of poor families not covered under any insurance scheme or any law statute,the central government has introduced a scheme of personal accident insurance social security scheme.The scheme is applicable to all persons in the age group of 18-55 who are earning members of poor families and meet with fatal accidents.The quantum of benefit is Rs.3,000.The scheme is implemented through the General Insurance Corporation.

A new initiative has been taken by the Ministry of Agriculture and Co-operation by providing insurance cover to unorganised labour working in construction industry, agricultural fields and forests where the insurance cover will be provided through the Co-operatives on 50:50 basis through the national insurance cover and Labour Co-operatives.The insurance cover has the provision that in case of death of the labourer, his family will be paid Rs,25,000.

Another emerging trend is the entry of Self Help Groups (SHG) and Micro Finance Institutions.These agencies should help accelerate the labour welfare process especially in rural and backward areas.It has also been observed that there is a change in the mind set of the courts regarding labour laws.It is being seen that courts of late are interpreting labour laws more liberally which has helped to provide flexibility to the employer in implementing various labour welfare schemes.

## PROBLEMS AND DIFFICULTIES ASSOCIATED WITH LABOUR WELFARE IN INDUSTRIES

Although workers in factories and other establishments have greatly benefited through various statutory and voluntary welfare measures adopted by employers, there are a lot of areas where problems and difficulties exist.

As already mentioned earlier, the present structure of the labour market is such that labour laws apply only to small portion of the labour force.A substantial portion of the labour force in India is not covered under labour laws and they are not getting the benefits of various labour law legislations.

Various labour laws are quite complicated and an average worker is not in a position to understand and grasp the various provisions.Trade unions are supposed to help the workers in this regard.The fact that there is no unity among trade unions and there is a high degree of political involvement and vested interests among the trade union leaders has certainly not helped in this regard.

In India there has always been a wide gap between the number of new entrants to the labour force and the corresponding capacity in the vocational and training infrastructure.This wide gap means that a large portion of the new entrants in the labour force will not be able to obtain good vocational and training facilities.

Majority of the workers in India work in small and medium size factories.However,large enterprises and their workers continue to be the main focus of labour policy.

Training activity for entrants to organised sector has always received a highly preferential treatment in contrast to those working in the unorganised sector.This is reflected in the exorbitant capitation fees for medical education and the high fees in private establishments for newly emerging areas of employment like Information Technology(IT),engineering,hotel,catering etc.This problem has further increased because the formal training certificates became a screening process for recruitment in the public sector/government.

There are many industries which are not covered by effective safety measures commensurate with the degree of exposure to risk.These industries include agriculture.small mines.trucks/bus operators,hotels,beedi and cigar making,building construction,fire works etc.

Various malpractices have been reported with respect to evasion of the provisions of the various acts.Workers are facing difficulty in getting the full benefits from the various welfare acts.Denial of benefits and facilities available to workers under various labour welfare legislations have been straining the relations between the management and workers.This naturally leads to grievances and disputes.This has also been vitiating working environment in the factory making it difficult for the supervisor to get the best out of the workers.

## SUGGESTIONS TO IMPROVE THE LABOUR WELFARE PRACTICES IN INDUSTRIES

a) The present structure of the labour market in India is such that labour laws apply to only a small portion of the work force.The only way to increase the coverage is by providing gainful employment to the entire labour force.The labour policy must facilitate the opening up of employment avenues in all the sectors.

b) As labour laws are quite complicated,an average worker is not in a position to understand the various provisions.Supervisors should acquire good knowledge about the provisions of the various welfare laws and help and guide the workers under their control in understanding their rights and obligations created by the act and the scheme.

c) Trade unions should work honestly towards the betterment of workers.Unions and their leaders should have good unity and they should not indulge in politics,vested interests etc.

d) In India there has always been a wide gap between the number of new entrants to the labour force and the corresponding capacity in the vocational and training infrastructure.Capacity and infrastructure in vocational and training institutions should be strengthened and this wide gap should be reduced.

e) Labour statistics clearly reveal that a majority of the workers in India work in small and medium size factories.However,large enterprises and their workers continue to be the main focus of labour policy.In future labour policy should give more importance to workers in small industrial establishments.

f) Unorganised sector forms nearly 80% of the working population in developing countries.To extend the coverage of social security measures for the unorganised sector workers,setting up of co-operatives,self help groups.mutual benefit associations managed and financed by the workers/occupational groups and volunatary health insurance and pension schemes should be encouraged.Training activity for entrants to organised sector has always received a highly preferential treatment in contrast to those working in the unorganised sector.Unorganised sector workers also should be provided adequate training facilities.

g) International agencies such as International Labour Organisation (ILO),United Nations International Childrens Emergency Fund and World Bank can act in collobaration to administer and distribute aid to informal sector.

h) The involvement of insurance industry in promoting safety of workers in small establishments should be encouraged.Group insurance schemes to share the risks of establishment owners should be promoted by the labour administration.

i) Establishments should be encouraged to have periodic safety audits carried out.

j) Placement agencies which are utilised for hiring contract labour should be registered and a forum to monitor placement agencies against exploitation of labour should be established.

k) There are many industries which are not covered by effective safety measures commensurate with the degree of exposure to risk.These industries include agriculture.small mines.trucks/bus operators,hotels,beedi and cigar making,building construction,fire works etc.Safety procedures in these industries should be given utmost priority in the labour policy.

l) There have been numerous instances of evasion of labour laws by various organisations.Workers are not getting full benefits under various labour law legislations.The State government will have to improve the quality and strength of their factory inspectorates and the workers and their unions will have to be more vigilant in policing the act.Penalties for violations should be strictly implemented so that workers get full benefit of labour laws.

## CONCLUSION

Labour welfare and social security has got tremendous significance with public sector,private sector and multinational corporate. The aspect of labour welfare requires an honest and open approach that money and environment given to employees will never go waste. Welfare schemes should be regarded as a wise investment which should and usually does bring a profitable return in the form of greater efficiency.The productivity of labour is an essential condition for the prosperity of an enterprise and the well being of the workers and their families.While the production facilities at the workplace and the remuneration are important,attitudes towards work and the value placed by the society on dignity of labour are equally important in influencing the productivity of labour.The high rate of labour absenteeism in Indian industries can be reduced to a great extent by provision of good housing,health and family care,education and training facilities.Provision for welfare facilities instils a sense of loyalty among workers and helps to improve productivity and efficiency of the enterprise.Welfare facilities reduces industrial disputes and brings about a cordial industrial relations. Therefore all efforts must be made by organisations to provide comprehensive welfare and social security to workers in order to improve their Quality of Work Life (QWL).

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# AN ARDL BOUNDS TESTING APPROACH TO DETERMINANTS OF WETLAND FISH PRODUCTION: A CASE OF TEMPERATE VALLEY OF KASHMIR, INDIA

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**ABSTRACT**

*This paper strives to empirically investigate the impact & possibility of existence of long-run relationship between fish production and economic & environmental factors in temperate valley of Kashmir using time series data for the period 1965-2010. The inclusion of rainfall, wetland water level and atmospheric temperature variables in the study was to purposely examine the effect on wetland fish production. Three models (model 1 for total fish production, model 2 for native Shizothorax specie and model 3 for exotic carp specie) were estimated using ARDL approach to test cointegration and to delineate the short run and long run equilibrium relationship between fish production and the determinants. Evidence of long run relationship between fish production and some determinants was found. By and large, our analysis reveals that the environmental factors have an impact (negative/positive) on fish production and suggests the need of considering environmental determinants into fisheries policy making.*

**KEYWORDS**

ARDL, Carp, Long-Run & Short-Run Equilibrium, Shizothorax, Wetland Fish Production.

## 1. INTRODUCTION

"Wetlands are areas of marsh, fen, peat land or water, whether natural or artificial, permanent or temporary, with water that is static or flowing; fresh, brackish, or salty, including areas of marine water the depth of which at low tide does not exceed six meters"

www.ramsar.org

Along with farming, fishing is one of the oldest occupations of humankind. Fishing has existed as a means of obtaining food since the Paleolithic period about 40,000 years ago (B. Gunda, 1984). The importance of the fisheries sector has been highlighted as a major source of food, income, livelihood for a large section of economically backward population in developing economies. As an important activity of self-employment, the increase in employment in the fisheries sector outpaced world population growth and employment in traditional agriculture (Begum S., 2006). Fisheries provide employment for over 38 million fishers in developing countries, mainly in Asia (84%). Total world employment in fisheries including associated trades, input suppliers and fish processing probably exceeds 150 million (FAO, 2003). World production of fish products (excluding seaweed and marine mammals) was estimated to have reached 141.6 million tonnes in 2008, a slight increase over 2007, driven by a 2.5 percent expansion in aquaculture to 51.6 million tonnes, while capture fisheries remained stable around 90 million tonnes. However, the world inland fisheries have steadily declined since the 1997 as most inland capture fisheries (all fresh water fish except aquaculture) are exploited at or above their maximum sustainable yields (FAO, 2010a). Globally, inland fisheries production (including aquaculture) increased 2% per year from 1984 to 1997; although in Asia (Asia produces 64% of the world's inland fish catch) the rate has been much higher (7% per year since 1992) (FAO, 2008). The fish production from developing countries account for over 60% of total world fish production – the major producers are China, Peru, India, Indonesia, and Chile. India now is third largest producer of fish in the world. Among the Asian countries, India ranks second in culture and first in capture fisheries. Indian share in global production has reached 4.36% with 9.92% share in inland and 2.8% in marine (Ministry of Food Processing Industries, Annual Report, 2006-07). In India, the trend of inland fish production is continuously on rise since 1950. The inland fish production of India has increased from 218 thousand tonnes in 1950-51 to 4636 thousand tonnes in 2008-2009 (Economic Survey, 2008-09). More than seven million fishers and their family members in India depend on fisheries for their livelihood (Indian Livestock Census, 2003). The number of people engaged in fishing related activities other than actual fishing, marketing of fish (391000), repair of fishing nets (245100), processing of fish (46200), & other activities (334700) (Hand Book on Fisheries Statistics, 2004).

Jammu and Kashmir State (in particular temperate Kashmir valley) is dotted with vast and varied fishery resources in the form of lakes, ponds, and rivers which are very productive and offer extensive opportunities for augmenting inland fish production. The state has total 1411 wetlands occupying 389261 ha area. Out of total 1411 wetlands 1143 such wetlands have been mapped having an area of 109170 ha (27.88%). In addition, 2240 small wetlands (< 2.25 ha) have been demarcated that can facilitates the farming of more than 40 million tonnes of fish annually. These wetlands are mainly high altitude wetlands and only some glacial lakes (altitude 3200-3819 m) of Kashmir contain fish, such as brown trout and the endemic schizothoracine Diptychs maculatus (www.wetlandsofindia.org). The Kashmir valley is a land of wetlands (lakes and rivers). The river Jhelum, Wular, Dal, Manasbal, Nagin, Anchar, Kaunsar Nag, Gangabal, Hokersar, Gilsar, Khushalsar, Haigam Wetland, Gadsar, Zumsar, Gangabal, Nundkol, Kishansar, Sheeshnag, Kausarnag, Nilnag, Vishan sar, Kishan sar, Khanpur and Waskur are the water bodies were fish is in abundance. The river Jhelum, Wular Lake and Dal Lake (Wular and Dal are oxbow lakes of river Jhelum) are important from fisheries point of view as most of the fishing is carried out in these three water bodies (National Wetlands Atlas, 2011). The fish output is mostly confined to these three wetlands– out of the total fish produce, about 80 per cent is caught in Wular (Ramsar site) and Dal lakes and the rest in River Jhelum. The fish production from Kashmir Valley went up from 40480 quintal in 1965-66 to 161758 quintal in 2009-2010 (excluding trout production in government fish farms and carp production in private fish ponds) (Digest of Statistics, 2010-2011). The contribution of fisheries sector to Gross State Domestic Product and Agriculture State Domestic Product has increased from 0.4 and 1.0 in 1980-81 to 0.48 and 1.5 respectively. The Gross Value Added (GVA) from this sector at current prices for the year 2007-08 is estimated at Rs.227 crores as against Rs.207 crores during 2006-07 showing growth rate of 9.66%. The GVA from fisheries sector at Constant (1999-00) Prices in 2007-08 is estimated at Rs.119 crores as against Rs.118 crores during 2006-07 showing a growth rate of 0.85% (State Domestic Product of Jammu & Kashmir, 1999-00 to 2007-08).Valley offers potential for development of cold-water fisheries, hill stream fisheries, sport fisheries, reservoir fisheries, Mahseers fisheries, and ornamental fisheries. Besides these natural water resources possess enormous potential for development of varied types of trout fish (Rainbow trout, Brown trout & Kashmiri trout etc.). Given this potential, fisheries can play an important role in the economy of the state, as it will raise supply of animal protein and therefore will raise nutrition level, generate employment and earn foreign exchange (Economic Survey, 2007-08). The current study is undertaken with an aim to unearth the long run and short run relationships between fish production and determinants and try to understand if change in determinants over the years is going to have any ultimate impact on wetland fish production in Kashmir Valley.

## 2. LITERATURE REVIEW

The literature on the proposed theme is not as rich as very few studies emphasize on the relationship between fish production and determinants. However, a good number of studies are available on environmental and biological and physico-chemical factors affecting fisheries. The cited literature is based on previous empirical studies focusing on the relationship between fish production and determinants with varied outcomes.

Jan-Olaf Meynecke et al., (2006) in their study have used monthly rainfall; monthly temperature and monthly fish catch data to examine the effect of climate change on sustainable fish production. The economic impacts of climate change had been estimated by running regression model of fish catch over time on

rainfall and temperature. Results indicated that up to 30% of Queensland's total fish catch and up to 80% of the barramundi (fish specie) catch variation for specific regions could be explained by rainfall often with a lagged response to rainfall events. The correlation analysis showed significant positive correlations between annual rainfall and total fish catch ($r = 0.54$; $P < 0.05$). Significant positive correlations also resulted from analysis between mean annual coastal rainfall and total annual commercial catches of mullet. Furthermore, regression analyses had been performed for rainfall and selected species groups, where the variation in model accounted for between 41% and 49% of the variation ($r^2$) in the catches of total mullet and barramundi. Baran E. et al., (2001) examined the relationship between fish production and hydrology of wetlands in the Mekong River Basin region. The authors applied logarithmic regression to study the relationship between annual catches and average water level in October in the floodplain river. They found very strong relationship between catch and water level and 92% ($r^2 = 0.92$) of the variation in dependent variable (catch in tons) was explained by the independent variable (average October water height in meters at the gauge). The model predicted that the catch will be nil if the October average water level does not exceed 5.1 m in the Lower Mekong River Basin. When examining the relationship between species-wise catch and the water level, it was found that the mostly dominant was Henicorhynchus sp. (comprising of fast-growing species believed to reach sexual maturity within only a year) whose abundance was highly correlated to the flood level. There was a slight and non-significant correlation between the catch and the water level one year before, and no correlation with previous years. Zarrien Ayub (2010) studied the effect of annual changes in fishing vessels, air temperature and rainfall on the catch of commercially important estuarine dependent fish and shrimp species of Pakistan by analyzing data from 1981 to 2006. The correlation between number of fishing vessels and fish caught during the period 1981 to 2006 showed a significant positive correlation ($r = 0.88$; $P < 0.01$). The correlation between the species of fish and shrimp and independent variables (temperature and rainfall) showed that in case of silver whiting annual catch and rainfall, a positive and marginally significant correlation ($r = 0.357$; $P < 0.10$, $n = 26$) was found. However, there was no significant correlation between annual rainfall and the catch of barramundi, Bombay duck, mullet, sardinella, anchovy, white shrimp and grey shrimp. The data for annual catch of Bombay duck, silver whiting, sardinella, anchovy, and grey shrimp showed no significant correlation with average annual temperature. However, there was significant negative correlation between average annual temperature and barramundi catch ($r = -0.526$; $P < 0.01$, $n = 23$) and positive correlation between average annual temperature and mullet catch ($r = 0.493$; $P < 0.05$, $n = 26$). There was a marginally significant correlation between average annual temperature and white shrimp catch. Ranta E. and Lindstroem K. (1993a) made a study on fourteen water quality variables of 166 northern Finnish lakes and their fish yield productivity. For most of the variables no clear covariation with the fish yield was found. However, authors found that fish yield tended to increase with increasing levels of oxygen saturation, conductivity, sodium (Na), pH and potassium (K) concentrations. A decreasing fish yield was observed with an increasing chemical oxygen demand (COD) of lake water and with increasing nitrogen (N). Intermediate levels of water color were associated with the highest fish yield. Ndebele-Murisa M. R. and et al., (2011) investigated the influence of climatic variables (rainfall, temperature and evaporation rates) and lake water levels on the stocks of the sardine fish species (Limnothrissa miodon) in Lake Kariba, Zimbabwe. A general linear regression model (GLRM) was used to analyze and investigate the relationships among fish catch (dependent variable) and the environmental factors (exploratory variables). The results of the estimated model showed that all the climatic factors as well as the water level significantly explain variations in the fish catches with the water level exerting the greatest influence in a negative manner ($R^2 = 0.84$, $P \leq 0.05$); followed by maximum temperature ($R^2 = 0.72$, $P \leq 0.05$), evaporation and rainfall. The $R^2$ of the model was 0.94 indicating that the combined effect accounted by of all the explanatory variables on Kapenta fish catches was 94%. Ranta E. and Lindstroem K., (1993b) in a study attempted to predict annual fish yield (kg/ha/yr) in a total of 390 lakes in Finland, using both water quality variables and variables involving fishing effort. Measures of fishing effort included gear numbers, gear type and number of fishermen. The results found that total fish yield could not be predicted reliably on the basis of water quality. At best, water quality explained no more than 15% of the variation in annual fish yield. Fishing effort turned out to be the most useful predictor, with an explanatory power of 50%. Debjit K. M. et al., (2010) in their study on two floodplain lakes of India attempted to evaluate changes between seasonal variation of water quality parameter and finfish diversity indices using quadratic regression analysis. It was found that in both floodplains the index of dominance of fish fauna was positively & significantly affected by depth and negatively & significantly by conductivity of water. M. Njiru et al., (2005) in their paper explored the impact of introductions of exotic fish species to the fishery of Lake Victoria. The authors found that catch composition of the lake has changed from those which prevailed at the inception of exotic species.

## 3. NEED/IMPORTANCE OF THE STUDY

The need of the study arises in the wake of current debate on climate change and its impact of natural resources having wide clears economic importance for human being across the world.

## 4. STATEMENT OF THE PROBLEM

This study highlights the impact of environmental factors on natural aquatic production functions and tries to explore the impact & possibility of existence of long-run relationship between fish production and economic & environmental factors in temperate valley of Kashmir, India.

## 5. OBJECTIVES

The overall objective of the study is to delineate the economic & environmental determinants of wetland fish production in the study area.

## 6. HYPOTHESES

**$H_{01}$:** There is no significant impact of fishing effort & environmental factors (such as water level, rainfall and atmospheric temperature) on the total wetland fish production in the study area.

**$H_{02}$:** There is no significant impact of fishing effort & environmental factors (such as water level, rainfall and atmospheric temperature) on the production of shizothorax and carp fish species in the study area.

## 7. RESEARCH METHODOLOGY

### 7.1. STUDY AREA

Strategically located Jammu & Kashmir State constitutes the northern most extremity of India, situated between 32.17°& 36.58° North latitude and 37.26° & 80.30° East latitude, the total area of the state is 22,22,236 sq. kms. including 78,114 sq. kms. under the occupation of Pakistan and 42,685 sq. kms. under that of China of which Pakistan handed over 5130 sq. kms to China. The state has three geographical zones and three distinct climatic regions viz, arctic cold desert areas of Ladakh, temperate Kashmir valley and sub-tropical region of Jammu (Hussain M., 2006).

### 7.2. DATA SOURCES

Data on Fish Production, Actual Number of Fishers, and Fish License-holder, and Fishing Boats were obtained from Statistical Digest of Jammu and Kashmir, 2009-2010, Directorate of Economics & Statistics, Srinagar (J&K) and www.indiastate.com (31/11/2012). Mean Annual Gauge Readings for Water Level of River Jhelum from 1965 to 2010 were collected from Irrigation & Flood Control Department (Floods (P&D) Division) Srinagar (J&K). The data for variable Mean Annual Rainfall were collected from Centre for Monitoring Indian Economy (CMIE). While the data for Mean Annual Temperature was compiled from Statistical Digest of Jammu and Kashmir, 2009-2010, Directorate of Economics & Statistics, Srinagar (J&K) & Meteorological Department Srinagar (J&K).

#### 7.3.1. MODELS

The traditional Autoregressive Distributive Lag (ARDL) models developed by Banerjee A., et al. (1986) are appropriate for stationary data (stationary data is, in fact, a requirement of these models), however, such is not the case with modified Autoregressive Distributive Lag models (ARDL) developed and popularized by Pesaran and Shin (1995, 1998, 1999); Pesaran and Pesaran (1997); Pesaran and Smith (1998) and Pesaran et al. (1996, 2001). This technique has certain advantages over other co-integration approaches and can be applied for series having different orders of integration while same integration order is required for other co-integration approaches [Generalized Error Correction Models- ECM (Davidson et al., 1978), Autoregressive Distributed Lag Models- ARDL (Banerjee et

al., 1986), Engle–Granger Two-Step Static Method- EG (1987), Fully Modified OLS Procedure of Phillips and Hansen's (1990), Engle-Yoo Three-Step Modeling Method- EYM (Engle and Yoo, 1991), Maximum Likelihood-Based Johansen Approach- VAR Models (1988,1991) and Johansen-Juselius Method- Vector Error Correction Models- VECM (1990)] (Rao B. B., 2007). However, if a variable is integrated at I(2) then the computation of F-statistics for cointegration becomes inconclusive as Pesaran et al., (2001) critical bounds are based on the assumption that such variables should be stationary at I(0) or I(1). Thus, we apply unit root tests to ensure that no variable is integrated at I(2) or beyond. In addition, it is argued that the ARDL approach to cointegration gives better results for small sample data, as compared to other techniques. ARDL bounds testing approach is a new approach to the problem of testing the existence of a level (long-run) relationship between a dependent variable and a set of regressors, when it is not known with certainty whether the underlying regressors are trend (purely I(1)) or first-difference stationary (purely I(0)).

A three-stage procedure is used in estimating an ARDL model viz, testing the long-run relationship, estimating the long-run parameters and dynamic/ECM analysis. In the first stage of estimating the general equations, we investigate the existence of a long-run relationship predicted by theory among the variables in question. If a stable long-run relationship is supported by the first stage [F-tests are used for testing the existence of long-run relationships. The F-test has a non-standard distribution which depends upon: whether variables included in the ARDL model are to be I(0) or I(1); the number of regressors; and whether the ARDL model contains an intercept and/or a trend. Pesaran et al., (2001) discusses five cases with different restrictions on the trends and intercepts for F-test. The two sets of critical values for F-tests are reported in Pesaran M. H. and B. Pesaran (1997): one set is calculated assuming that all variables included in the ARDL model are I(1) and the other is estimated considering the variables are I(0). Critical values for I(1) series are called upper bound critical values and critical values for I(0) series are called lower bound critical values. If the computed F-values are greater than upper bounds critical values then the long run relationship among variables exists and if they are below the lower bounds critical values then no long run relationship exists among variables under consideration and if the F-values fall within the prescribed band then the result becomes inclusive. However, in this case, the error correction term will be a useful way of establishing cointegration. The null hypothesis for long run equilibrium is non-existence of long run relationship or no cointegration against alternative hypothesis of existence of long run relationship or cointegration.], then in the second stage, a further two-step procedure to estimate the model is carried out. In the first step of the second stage, the orders of the lags in the ARDL model are selected by Akaike Information Criteria (AIC) or Schwartz Bayesian Criteria (SBC). The incorporation of lagged values (t-1) is the best predictor of the series at time t because the effect of any shock is permanently incorporated into the memory of the model. In the second step of the second stage, the long-run parameters of the selected model are estimated by OLS and their significance testing is done. The general long-run ARDL cointegration equation representation is as follows:

$$\Delta Y_t = \ln \beta_0 + \sum_{i=1}^{p1} \beta_1 \Delta Y_{t-1} + \sum_{i=0}^{q1} \beta_2 \Delta X_{1t-1} + \sum_{i=0}^{q2} \beta_3 \Delta X_{2t-1} + \sum_{i=0}^{q3} \beta_4 \Delta X_{3t-1} + \sum_{i=0}^{q4} \beta_5 \Delta X_{4t-1} + \sum_{i=0}^{q5} \beta_6 \Delta X_{5t-1} + \beta_7 Y_{t-1} + \beta_8 X_{1t-1} + \beta_9 X_{2t-1} + \beta_{10} X_{3t-1} + \beta_{11} X_{4t-1} + \beta_{12} X_{5t-1} + U_t$$

In this equation, the terms with the summation signs capture the short-run dynamics of the model, whereas other terms represent the long-run relationship. Where p and $q_1$ …. $q_5$ are the optimal lag lengths and Δ is the first difference operator.

The third stage of analysis is the error correction model (ECM). When there is a long-run relationship between the variables then there exists an error correction representation. Error Correction Model can connect the short-run variations of variables to their long-run values. In order to set an ECM model besides other variables, the first difference of the variables involved is also taken into consideration and we need to consider the residuals of cointegration equation with a lag as an explanatory variable and finally estimate the model coefficients using OLS. We know that that the ARDL model provides information similar to the ECM and we can derive a single equation ECM from a general ARDL model. Infact, certain forms of ARDL models are isophormic to error correction models. The ARDL model like ECM model estimates short-run and long-run coefficients and also gives coefficient for error correction term ECM(-1) which is our ECM. The error correction term ECM(-1) indicates the deviation in dependent variable for a short span of time to the long-run equilibrium path. The coefficient of ECM tells us how much of the disequilibrium in the system due to some shocks is rectified in the long run or it shows how sooner or later or how slowly/quickly variable returns to equilibrium and it should have a negative sign. Thus the coefficient of error correction term represents the speed of adjustment to restore equilibrium in the dynamic model following a disturbance. Banerjee et al., (1998) holds that a highly significant error correction term is further proof of the existence of a stable long run relationship. Infact, ARDL approach simultaneously provides the long run and short run estimates for empirical investigation. This technique provides an efficient way to separately examine the long run and short run causal relationships. The following equation is the general error correction model (ECM) representation:

$$\Delta Y_t = \ln \beta_0 + \sum_{i=1}^{p1} \beta_1 \Delta Y_{t-1} + \sum_{i=0}^{q1} \beta_2 \Delta X_{1t-1} + \sum_{i=0}^{q2} \beta_3 \Delta X_{2t-1} + \sum_{i=0}^{q3} \beta_4 \Delta X_{3t-1} + \sum_{i=0}^{q4} \beta_5 \Delta X_{4t-1} + \sum_{i=0}^{q5} \beta_6 \Delta X_{5t-1} + \beta_7 EC_{t-1} + U_t$$

where $\beta_7$ is the speed-of-adjustment parameter and $EC_{t-1}$ represents the residuals that are obtained from the estimated long-run (cointegration) model.

**7.3.2. ELABORATION OF ECONOMETRIC MODELS AND VARIABLES USED**

Model 1: Determinants of Wetland Fish Production

The Cobb-Douglas production function model specified to estimate the factors affecting wetland fish production in Kashmir Valley is as follows:

$$FP_t = f\left(\beta_0 FP_{t-1}^{\beta 1} AF_t^{\beta 2} FB_t^{\beta 3} MAR_t^{\beta 4} MAWLW_t^{\beta 5} MAT_t^{\beta 6} U_{1t}\right)$$

By taking the logarithm of above =n, we can obtain the least-squares estimates of the parameters there. Thus,

$$\ln FP_t = \ln \beta_0 + \beta_1 \ln FP_{t-1} + \beta_2 \ln AF_t + \beta_3 \ln FB_t + \beta_4 \ln MAR_t + \beta_5 \ln MAWLW_t + \beta_6 \ln MAT_t + U_{1t}$$

Theoretical Justification of Various Variables Included in the Model:

**$\ln FP_t$ =** Natural log of fish catch/production in time period t,

**$\ln FP_{t-1}$ =** Natural log of fish catch/production in time period t-1: Fish stock change depends on biological factors such as recruitment, natural mortality, individual growth and natural factors such as water temperature, water density, water quality/pollution levels, food supplies, natural predation etc. and anthropogenic factors such as fish harvesting. Since data on recruitment, individual growth, natural mortality & water temperature, water density, water quality/pollution levels, food supplies, natural predation of fishes is not available and all these are governed by biology/nature and are difficult to measure and include in the model, therefore, all these biological & natural factors are taken care by the error term '$U_t$'in the model. So any change in fish stock levels are directly affected by fish harvesting (through effort) over a period of time. Thus the stock change can be positive or negative if natural growth rate is greater or smaller than harvest rate respectively. When a stock is depleted i.e., when harvest is greater than growth, fish stock becomes a decreasing function of fishing effort, catch reductions are in order, but typically they are implemented only after considerable delay. Similarly, when fish catch/harvest is reduced (through lower effort) fish stocks recover and lead to higher catches/harvest but typically only after considerable delay (D. S. Huang and C. W. Lee, 1976). Generally speaking, fishing effort affects the fish stock which in turn affects fish catch/harvest. Thus, today's catch will affect tomorrow's catch. So it is catch/harvest itself which indicates the status of stock and affects itself though with delay. Therefore, introduction of the lagged value of dependent variable ($\ln FP_{t-1}$) as an explanatory variable captures the influence of stock on harvest/catch. In general, lag of the dependent variable as explanatory variable identifies the time delay in response of dependent variable to the known lagged predetermined variable, i.e., observations at 't' are likely to be correlated with observations at '$t_{-1}$', '$t_{-2}$' and so forth.

**$lnAF_t$ =** Natural log of No. of actual fishers in time period t: It is the number of fishers who actually indulge in fishing (Since fishermen indulging in fishing do not all subscribe to license and many of them take to fishing illegally and those who subscribe to license do not all indulge in fishing but they do so to make other occupation related benefits) as such it is an important variable influencing the fish production. The coefficient ($\beta_2$) of $lnAF_t$ measures the rate of change in fish production with respect to rate of change in actual number of fishers. The higher the rate of participation in fishing higher will be the fish exploitation rate and greater the fish production in short run and vice-versa. But in the long-run irreversible changes may result due to overexploitation problem (This is because under normal circumstances most of the households participating in fishing do so in the same fishery.) which is often the destiny of most of the aquatic common property resources.

**$lnFB_t$ =** Natural log of No. of fishing boats in time period t: The coefficient ($\beta_3$) of $lnFB_t$ measures the rate of change in fish production with respect to the rate of change in fishing boats (capital) or in other words it measures the rate of change in fish production with respect to the rate of growth of capital. A higher coefficient on the natural log of number of fishing boats shows that the fish production function is capital intensive.

**$lnMAR_t$ =** Natural log of mean annual rainfall in millimeters in the study area in time period t: The coefficient ($\beta_4$) of $lnMAR_t$ measures the rate of change in fish production with respect to the rate of change in the mean annual rainfall in the study area. The speculation that climate change may impact on sustainable fish production through variation in rainfall suggests a need to understand how these effects influence fish production of temperate wetlands. Therefore, an attempt has been made to study relationship between rainfall and fish production. The main objective is to find out impact, if there is any, of rainfall variation on the wetland fish production.

**$lnMAWLW_t$ =** Natural log of mean annual water level of the wetlands in meters in the study area in time period t: The coefficient ($\beta_5$) of $lnMAWLW_t$ measures the rate of change of fish production with respect to the rate of change in the mean annual water level of the wetlands. Water level, total inflow and outflow, stored water content and water quality of a wetland are the important environmental factors that affect all the other environmental characteristics of freshwater ecosystems. The increased water level is likely to have positive impact on certain fish species production while as decreased water level due to siltation, encroachment, erratic & scarce rainfall and snowfall will have negative impact on certain fish species production. Therefore for the present study the water level of Jhelum River (since it connects both the wetlands- Wular and Dal or in other words Wular and Dal are oxbow lakes of river Jhelum and influences their hydrology and biota) is taken into consideration. The daily gauge readings of River Jhelum at thirty three sites viz, Khannabal, Sangam, Kaipora, Dogripora, Awantipora, Kandizaal, Pampore, Sempora, Batwara, Padshahi Bagh, Sonwar, Munshi Bagh, Badshah Bridge, Habba Kadal, Fateh Kadal, Zaina Kadal, Nawa Kadal, Safa kadal, Chattabal U/S, Chattabal Main, Chattabal D/S, Shadipora, Asham, Baniyari, Gulamyari, Ningli on Wular, Sopore, Seer, Doabgah, Delina, Baramulla, Khanpora, Khadinyar etc., is collected by Irrigation & Flood Control Department (Floods (P&D) Division) Srinagar. Of these thirty three sites, the water level data for five sites viz Khannabal, Sangam, Munshi Bagh, Asham & Sopore are most important as the data of these five sites is submitted to the Central Water Commission, Ministry of Water Resources, Government of India and Indus Water Treaty cell, is used in the analysis.

**$lnMAT_t$ =** Natural log of mean annual atmospheric temperature in degrees Celsius in the study area in time period t: The coefficient ($\beta_5$) of $lnMAT_t$ measures the rate of change of fish production with respect to the rate of change in the mean annual atmospheric temperature. The meteorological factors such as temperature, sunshine, rainfall, humidity exert a considerable influence on the physicochemical dynamics of water body which in turn largely determines the structure and composition of biotic community of an aquatic ecosystem. While as weather directly affects fishing climate variability determines the distribution, species composition, and abundance of fish particularly in temperate regions. Climate change impacts on inland aquatic ecosystems will range from the direct effects of the rise in temperature to indirect effects through alterations in the hydrology resulting from the changes in the regional precipitation regimes and the melting of glaciers and ice cover. Since fish population variability is closely linked to climate dynamics. It is therefore necessary to understand to what extent climate changes are affecting fish stocks and therefore fish catch/production. In order to be able to explain the impacts of temperature changes on the future state of fisheries the mean annual temperature has been introduced in the model. (Lehodey P., 2006) states that if close link between climate and fisheries is to be explained then it is best illustrated by the effect of annual temperature variation on non-seasonal (interannual) fish production. The importance of temperature is evident at spatial scales as fish species often are grouped according to local temperature. Cold water species typically have physiological optima ≤ 20-25°C and generally are not found where summer temperatures are > 25°C. Trout and salmon (family salmonidae), Cyprininae Schizothoracine are the dominant cold water species of high elevation aquatic systems throughout north India and are of prime importance for both recreational and commercial fisheries.

**$\beta_0$** = Intercept in the regression model,

**$U_{1t}$ =** Stochastic error term which capture the random variation of the production function across 't', and captures the effects of measurement errors, and exogenous shocks which are beyond the control of the modeler.

Model 2: Determinants of Shizothorax Fish Specie Production of Kashmir Wetlands

Specification of the Model:

$$\ln SF_t = \ln \alpha_0 + \alpha_1 \ln SF_{t-1} + \alpha_2 \ln CF_{t-1} + \alpha_3 \ln AF_t +$$
$$\alpha_4 \ln FB_t + \alpha_5 \ln MAR_t + \alpha_6 \ln MAWLW_t + \alpha_7 \ln MAT_t + U_{2t}$$

Theoretical Justification of Various Variables Included in the Model:

**$lnSF_t$ =** Natural log of fish catch/production of shizothorax specie in time period t,

**$lnSF_{t-1}$ =** Natural log of fish catch/production of shizothorax specie in time period t-1: It is the lagged catch of shizothorax fish specie (lagged endogenous variable with a lag of one time period). The catch of shizothorax fish specie depends on the size and composition of the fish stock (natural resource) which itself comprises of stock of shizothorax fish specie & stock of carp fish specie (two principal species of Kashmir wetlands) and of course several other species which are caught in negligible quantities. Since the catch of shizothorax fish specie depends itself on stock of specie (shizothorax specie) which in turn is governed by biological and anthropogenic factors such as fish harvesting therefore, any change in catch of shizothorax specie affects stock level of specie directly which in turn affects the catch of specie. So specie catch can increase (or decrease) if natural growth rate is greater (or smaller) than harvest/catch rate of the specie. When specie stock is depleted i.e., when harvest/catch rate is greater than natural growth rate of specie, catch becomes a decreasing function of catch itself but typically is implemented only after delay. Thus, today's catch will affect tomorrow's catch. This phenomenon is captured by the lagged value of dependent variable $lnSF_{t-1}$ as an explanatory variable in the regression model.

**$lnCF_{t-1}$ =** Natural log of fish catch/production of carp specie in time period t-1: This specie was introduced in Kashmir wetlands in 1956 and since then has invaded all waters of the valley. It is being said (fishermen opinion) that introduction of this species has led to fall in the catch of shizothorax specie (a native fish) may be due to competition for food, space or due to predation or mutation etc. In order to capture its impact on shizothorax specie the lagged catch of carp fish specie has been introduced as an explanatory variable in the model.

**$lnAF_t$ =** Natural log of No. of actual fishers in time period t,

**$lnFB_t$** = Natural log of No. of fishing boats in time period t,

**$lnMAR_t$** = Natural log of mean annual rainfall in millimeters in the study area in time period t,

**$lnMAWLW_t$** = Natural log of mean annual water level of the wetlands in meters in the study area in time period t,

**$lnMAT_t$** = Natural log of mean annual atmospheric temperature in degrees Celsius in the study area in time period t,

**$\alpha_0$** = Intercept in the regression model,

**$\alpha_1$ ..... $\alpha_7$** = Coefficients to be estimated,

**$U_{2t}$ =** Stochastic error term in model 2,

Model 3: Determinants of Carp Fish Specie Production of Kashmir Wetlands

Specification of the Model:

$$\ln CF_t = \ln \gamma_0 + \gamma_1 \ln CF_{t-1} + \gamma_2 \ln SF_{t-1} + \gamma_3 \ln AF_t + \gamma_4 \ln FB_t + \gamma_5 \ln MAR_t + \gamma_6 \ln MAWLW_t + \gamma_7 \ln MAT_t + U_{3t}$$

Theoretical Justification of Various Variables Included in the Model:

**$\ln CF_t$ =** Natural log of fish catch/production of carp specie in time period t,

**$\ln CF_{t-1}$** = Natural log of fish catch/production of carp specie in time period t-1,

**$\ln SF_{t-1}$** = Natural log of fish catch/production of shizothorax specie in time period t-1: This is the native specie of Kashmir wetlands and in order to capture its impact on carp specie (exotic specie) the lagged catch of shizothorax fish specie has been introduced as an explanatory variable in the model.

**$\ln AF_t$** = Natural log of No. of actual fishers in time period t,

**$\ln FB_t$** = Natural log of No. of fishing boats in time period t,

**$\ln MAR_t$** = Natural log of mean annual rainfall in millimeters in the study area in time period t,

**$\ln MAWLW_t$** = Natural log of mean annual water level of the wetlands in meters in the study area in time period t,

**$\ln MAT_t$** = Natural log of mean annual atmospheric temperature in degrees Celsius in the study area in time period t,

**$\gamma_0$** = Intercept in the regression model,

**$\gamma_1$ ..... $\gamma_7$** = Coefficients to be estimated,

**$U_{3t}$** = Stochastic error term in model 3,

## 8. RESULTS, DISCUSSION & FINDINGS

### 8.1. UNIT ROOT & COINTEGRATION TEST RESULTS

To avoid the spurious regressions stationarity of the time series variables used in three models was checked and it was found that variables involved are differently cointegrated as some are I(0) while others are I(1) but none is I(2). Therefore it was decided to use ARDL bounds test approach to estimate the above mentioned models.

**TABLE 8.1: THE ADF UNIT ROOT TEST FOR NON-STATIONARITY WITH TREND & INTERCEPT**

| Variables | ADF Test At Level | Prob. | Results Status | ADF Test At First Difference | Prob. | Results Status |
|---|---|---|---|---|---|---|
| $\ln FP_t$ | 0.336193 | 0.9983 | I(1) | -7.346132 | 0.0000* | I(0) |
| $\ln SF_t$ | -3.870705 | 0.0216*** | I(0) | -17.51826 | 0.0000 | I(0) |
| $\ln CF_t$ | -0.267445 | 0.9892* | I(1) | -6.651703 | 0.0000 | I(0) |
| $\ln AF_t$ | -2.083186 | 0.5408 | I(1) | -4.000613 | 0.0164** | I(0) |
| $\ln FB_t$ | -3.376554 | 0.0674 | I(1) | -5.264832 | 0.0005*** | I(0) |
| $\ln MAWLW_t$ | -4.165704 | 0.0103** | I(0) | -8.564938 | 0.0000 | I(0) |
| $\ln MAT_t$ | -4.320491 | 0.0068* | I(0) | -6.583976 | 0.0000 | I(0) |
| $\ln MAR_t$ | -6.028021 | 0.0000* | I(0) | -8.062981 | 0.0000 | I(0) |

*Significant at 1%; ** Significant at 5%; *** Significant at 10%

In order to confirm the long-run relationship between variables for three models, we used Wald statistics based on Pessaren's bounds test. Given the limited number of observations (46) and the use of annual data we take p =3, i.e., the number of lags is three. The calculated F- statistics for model- 1 is 4.113161, which is higher than the upper bounds critical value of 3.79 at 10% sig. level with unrestricted intercept & trend for five regressors. While the calculated F- statistics for the model- 2 is 4.103139, which is higher than the upper bounds critical value of 4.00 at 5% sig. level with unrestricted intercept & trend for six regressors. And the calculated F- statistics for the model- 3 is 3.604364, which is higher than the upper bounds critical value of 3.59 at 10% sig. level with unrestricted intercept & trend for six regressors. The results are depicted in table 8.2.

**TABLE 8.2: COINTEGRATION TEST RESULTS FOR MODELS 1, 2 & 3 WITH UNRESTRICTED INTERCEPT & TREND**

| Model | Wald Sta. | Prob. | No. of Regressors | Upper Bounds Critical Value | Lower Bounds Critical Value |
|---|---|---|---|---|---|
| Model - 1 | 4.113161 | 10% | 5 | 3.79 | 2.75 |
| Model - 2 | 4.103139 | 5% | 6 | 4.00 | 2.87 |
| Model - 3 | 3.604364 | 10% | 6 | 3.59 | 2.53 |

### 8.2. EMPIRICAL RESULTS AND DISCUSSIONS

**TABLE 8.2.1: ESTIMATED LONG RUN COEFFICIENTS FOR MODEL 1 ARDL (3,0,0,0,1,0) BASED ON SBC**

| Dependent variable is $\ln FP_t$ (43 observations used for estimation from 1968 to 2010) | | | |
|---|---|---|---|
| Regressor | Coefficient | Standard Error | T-Ratio[Prob] |
| $\ln AF_t$ | -.055208 | .024793 | -2.2267[.033] |
| $\ln FB_t$ | .82061 | .091683 | 8.9505[.000] |
| $\ln MAR_t$ | -.0038868 | .081575 | -.047646[.962] |
| $\ln MAWLW_t$ | .090974 | .22855 | .39805[.693] |
| $\ln MAT_t$ | .36467 | .30401 | 1.1995[.239] |
| INPT | 2.4377 | 1.4301 | 1.7046[.098] |

In estimating the long-run relationship for model 1, a maximum of three lags was used and the model was selected based on SBC along with trend and intercept. However, the trend was found insignificant and was dropped and model was re-estimated and the results shown in table 8.2.1 were found. The empirical results of the long-run model show that natural log of actual number of actual fishers ($\ln AF_t$) has statistically significant effect on natural log of fish production ($\ln FP_t$) at 5% significant level. The negative sign and magnitude of the variable depict that as number of actual fishermen increases by 1% the fish production decreases by about 5.5%, other things being equal. The result is also endorsed by earlier study like (D. S. Huang and C. W. Lee, 1976). The finding has direct implications for wetland fisheries problems in Valley. It denotes that wetland fisheries sector in Kashmir valley is congested and any further increase in the number of fishermen will deplete fish stocks and therefore will translate into poor catches (falling average and marginal catch rates) which will further translate into poverty of fishers. It is thus clear that if this problem is not solved immediately, the fish production in Kashmir wetlands' will fall. This will have serious repercussions not only on fishermen but on the fishing sector as a whole as well as wetlands' biodiversity. Therefore, the department of fisheries should reduce the fishing licenses by restricting the issuance of licenses to traditional fishers only and strictly ban illegal fishing to make fishing occupation sustainable. On the other hand, the fishing boats estimate indicates that a 1% increase in fishing boats ($\ln FB_t$) results in an increase of fish production by about 82%. The result is also endorsed by earlier studies like Ranta E. and Lindstroem K. (1993b) and Zarrien Ayub (2010). The result provides guidelines for the improvement of fish production by increasing the number of fishing boats. Since inland fishing is traditional in nature and is capital deficient (uses relatively less capital) compared to marine fishing sector therefore there is ample space for introduction of motor boats and modern fishing nets. Thus instead of increasing the number of fishing boats (by issuing more fishing licenses) it is recommended to reduce licenses and introduce motor boats and modern fishing instrument to increase wetland fish production and therefore income of traditional fishermen community. The long-run results for mean annual rainfall, mean annual water level of the wetland, and mean annual atmospheric temperature did not have any significant impact on total wetland fish production in the study area. However, it does not mean that these

explanatory variables do not have any impact on individual species comprising our total fish production. The intercept turned significant at 10% level of significance.

**TABLE: 8.2.2: ERROR CORRECTION REPRESENTATION FOR MODEL 1 ARDL(3,0,0,0,1,0) BASED ON SBC**

| Dependent variable is $dlnFP_t$ (43 observations used for estimation from 1968 to 2010) | | | |
|---|---|---|---|
| Regressor | Coefficient | Standard Error | T-Ratio[Prob] |
| $dlnFP_t(-1)$ | -.61058 | .13081 | -4.6677[.000] |
| $dlnFP_t(-2)$ | -.57365 | .13340 | -4.3003[.000] |
| $dlnAF_t$ | -.017770 | .0091913 | -1.9334[.062] |
| $dlnFB_t$ | .26414 | .085780 | 3.0792[.004] |
| $dlnMAR_t$ | -.0012511 | .026197 | -.047757[.962] |
| $dlnMAWLW_t$ | -.099237 | .058630 | -1.6926[.100] |
| $dlnMAT_t$ | .11738 | .10809 | 1.0859[.285] |
| dINPT | .78464 | .47610 | 1.6481[.109] |
| ecm(-1) | -.32188 | .094292 | -3.4136[.002] |

Error correction representation is reported in table 8.2.2. Δ sign and coefficient express the short-run elasticity of the variables used in the model. The results of table 8.2.2, reveal the importance of fish stock in determining the fish production- a 1% increase in one-period lag fish production decreases current period fish production by 61%. This clearly reflects the negative effect of harvesting fishery resources at a rate more than their renewal (growth) rate in the short-run. Similarly, a 1% increase in two-period lag fish production decreases current period fish production by 57%. The relationship between previous period catches and current period catch in the short-run confirms that when the targeted fish begins to decrease in short-run because of over-fishing, the fishing activity is reduced in response to the necessity of increasing effort for smaller returns which leads to restoration of fish stock over long-run. The coefficient of natural log of actual number of fishers is negative and is significant at 5% level. This further confirms the negative effect of actual number of fishers on fish production even in short-run- the severe competition among fishers on a fishery for fixed fish stock leads to fall in fish catch. However, the natural log of fishing boats has negative effect on fish production in the short-run and is significant at 1% level and a 1% increase in fishing boats leads to 26% decrease in fish production. Lastly, mean annual water level of the wetland affects annual fish production in the short-run with the significant elasticity of 0.099 at the 10% level indicating that a 1% increases in mean annual water level of the wetland decreases the fish production by 10%. It is because search cost (in terms of labour and time) increases with increase in water level of the wetland in the short. The result for water level is contradictory to results of Baran E. et al., (2001) but in tune with the results of Ndebele-Murisa M. R. and et al., (2011).The error correction term ecm(-1) which measures the speed of adjustment to restore equilibrium in the dynamic model, appears with a negative sign and is statistically significant at less than 1% level ensuring that the series is non-explosive, and confirms that a long-run relationship exists between the variables in model 1. The coefficient of -0.32188 implies that only 32% of the disequilibrium in fish production from the previous period's shock will converge back to the long-run equilibrium in the current period.

**TABLE 8.2.3: GOODNESS OF FIT & DIAGNOSTIC TESTS FOR MODEL 1**

| | |
|---|---|
| R-Squared: 0.99275 | R-Bar-Squared: 0.99077 |
| F- statistic: F( 9, 33) 502.0868 [.000] | DW-statistic: 2.2741 |
| σ of Regression: 0.036810 | Breusch-Godfrey test: $\chi^2(1)$= 2.0319 [.154] |
| Ramsey's RESET test: $\chi^2(1)$= .022382 [.881] | Jarque-Bera test: $\chi^2(2)$= 2.6162 [.270] |
| Engle's ARCH LM test: $\chi^2(1)$ = 7.4023 [.007] | |

Apart from the high significance levels of variables and the existence of a long-run relationship, our model is statistically well behaved. We applied a number of diagnostic tests to model 1, such as Breusch-Godfrey or Lagrange Multiplier test of Residual Serial Correlation and found no evidence of autocorrelation in the disturbance term. The evidence of no auto-correlation was further confirmed by the value of diagnostic test, D.W. Statistic 2.2741. The Engle's ARCH LM test of Heteroscedasticity suggests that the errors are homoscedastic and independent of the regressors. The model passes the Jarque-Bera test of Normality suggesting that the errors are normally distributed. The Ramsey's RESET test of Functional Form indicates that the model is correctly specified. While the adjusted $R^2$ of the model is high implying an excellent fit of the model- 99% of the variation in the fish production is explained by the regressors. In addition, the F-statistic is significant at less than 1% level expressing that the model has an overall good fit.

For stability of model 1 (parameter stability), we test the model by cumulative sum of residuals (CUSUM) and the cumulative sum of squares of recursive residuals (CUSUMSQ) tests also known as Brown et al. (1975) stability testing technique. It was found that model is stable (short run and long run coefficients in the ARDL/ECM are stable) as neither CUSUM nor CUSUMSQ tests exceed the lower and upper bounds of 5% level of significance. Therefore the null hypothesis of all coefficients in the given regression model are stable cannot be rejected.

**THE GRAPH OF CUSUM & CUSUMSQ FOR MODEL 1 IS SHOWN IN FIG. 8.2.1**

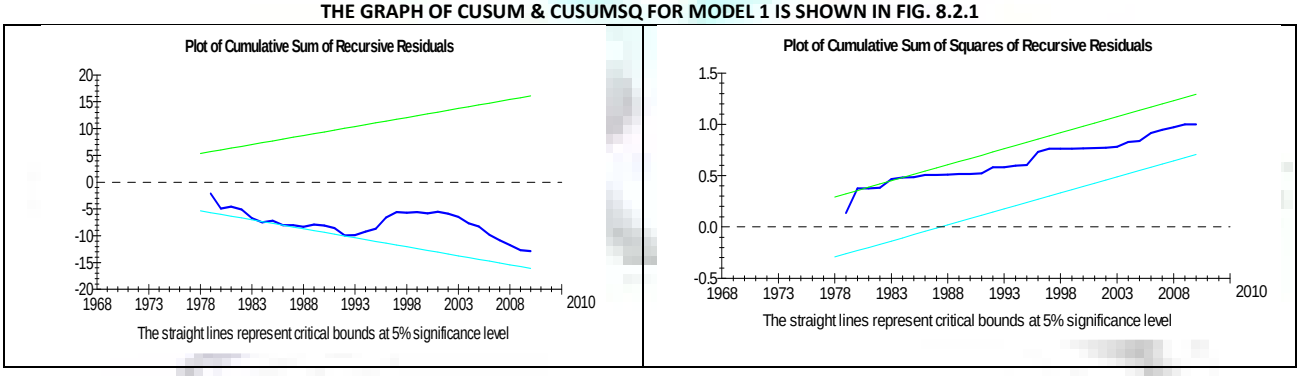



**TABLE 8.2.4: ESTIMATED LONG RUN COEFFICIENTS FOR MODEL 2 ARDL(0,2,1,0,0,0,0) BASED ON SBC**

| Dependent variable is $lnSF_t$ (43 observations used for estimation from 1968 to 2010) | | | |
|---|---|---|---|
| Regressor | Coefficient | Standard Error | T-Ratio[Prob] |
| $lnCF_t$ | .62771 | .079185 | 7.9271[.000] |
| $lnAF_t$ | .0018487 | .0083533 | .22131[.826] |
| $lnFB_t$ | .018042 | .079571 | .22675[.822] |
| $lnMAR_t$ | .4900E-3 | .023440 | .020906[.983] |
| $lnMAWLW_t$ | .0074828 | .049835 | .15015[.882] |
| $lnMAT_t$ | -.15960 | .094387 | -1.6909[.100] |
| INPT | 2.7295 | .38504 | 7.0888[.000] |

The empirical results of the long-run relationship for model 8.2.4, show that natural log of fish catch/production of carp specie ($lnCF_t$) has statistically significant effect on natural log of fish catch/production of shizothorax specie ($lnSF_t$) at less than 1% significant level. The positive sign and magnitude of the variable depicts that introduction of the carp specie into Kashmir wetlands has favorably affected the native specie (Shizothorax) as the fish catch/production of carp specie increases by 1% the catch of shizothorax specie increases by about 63%, all other things being equal. The result is contrary to the result found by M. Njiru et al. (2005). Therefore, introduction of carp specie into Kashmir wetlands was a right decision undertaken by fisheries experts. The finding has a solution for under stocked water bodies in Valley and provides guidelines for the improvement of fish production. The fisheries department with the help of fisheries experts should introduce new prized species which are fast growing in nature to increase fish production and raise economy of the state. The coefficient of natural log of mean annual atmospheric temperature is negative and is significant at 10% level. This shows the negative impact of climate change on cold water fishes such as Shizothorax in the temperate wetlands. As the mean annual temperature increases by 1%, the Shizothorax fish production decreases by about 16 percent. The intercept is significant at less than 1% significance level.

**TABLE 8.2.5: ERROR CORRECTION REPRESENTATION FOR MODEL 2 ARDL(0,2,1,0,0,0,0) BASED ON SBC**

| Dependent variable is $dlnSF_t$ (43 observations used for estimation from 1968 to 2010) | | | |
|---|---|---|---|
| Regressor | Coefficient | Standard Error | T-Ratio[Prob] |
| $dlnCF_t$ | .29067 | .099600 | 2.9184[.006] |
| $dlnCF_t(-1)$ | -.28534 | .094150 | -3.0307[.005] |
| $dlnAF_t$ | .028572 | .012509 | 2.2841[.029] |
| $dlnFB_t$ | .018042 | .079571 | .22675[.822] |
| $dlnMAR_t$ | .4900E-3 | .023440 | .020906[.983] |
| $dlnMAWLW_t$ | .0074828 | .049835 | .15015[.882] |
| $dlnMAT_t$ | -.15960 | .094387 | -1.6909[.100] |
| dINPT | 2.7295 | .38504 | 7.0888[.000] |
| ecm(-1) | -1.0000 | 0.00 | *NONE* |

Error correction representation for model 2 is reported in table 8.2.5. The results reveal the importance of carp fish stock in determining the shizothorax fish production- a 1% increase in current period carp fish production increases current period Shizothorax fish production by 29%. However, a 1% increase in one-period lag carp fish production decreases current period Shizothorax fish production by about 29%. This clearly reflects relationship between previous period carp catch and current period Shizothorax catch in the short-run and confirms that the two species have mutually benefitted each other. Similarly, a 1% increase in actual number of fishers increases the shizothorax production by about 29%. The negative sign of the coefficient of natural log of mean annual atmospheric temperature shows that a 1% increases in atmospheric temperature decreases Shizothorax fish production by 16% even in the short-run. The intercept is significant at less than 1% significance level. The error correction term ecm(-1) for model 2 appears with a negative sign and is statistically significant at less than 1% level. The coefficient of -1.0000 implies that 100 per cent of the disequilibrium in Shizothorax fish production from the previous period's shock will converge back to the long-run equilibrium in the current period.

**TABLE 8.2.6: GOODNESS OF FIT & DIAGNOSTIC TESTS FOR MODEL 2**

| | |
|---|---|
| R-Squared: 0.98978 | R-Bar-Squared: 0.98700 |
| F- statistic: F( 9, 33) 355.1720[.000] | DW-statistic: 1.9466 |
| σ of Regression: 0.032552 | Breusch-Godfrey test: $\chi^2(1)$= .025712 [.873] |
| Ramsey's RESET test: $\chi^2(1)$= 3.0089[.083] | Jarque-Bera test: $\chi^2(2)$= 22.6531[.000] |
| Engle's ARCH LM test: $\chi^2(1)$ = 2.3822[.123] | |

Apart from the high significance levels of variables and the existence of a long-run relationship, our model is statistically well behaved. We applied a number of diagnostic tests to model 2, the overall health of the model is fine. However, it fails to pass the Jarque-Bera test of Normality suggesting that the errors are not normally distributed. The Ramsey's RESET test of Functional Form indicates that the model is not correctly specified but functional form is not a big issue in ARDL modeling Approach. While the adjusted $R^2$ of the model is high implying an excellent fit of the model- about 99% of the variation in the fish production is explained by the regressors. In addition, the F-statistic is significant at less than 1% level expressing that the model has an overall good fit.

For stability of model 2 (parameter stability), we test the model by cumulative sum of residuals (CUSUM) and the cumulative sum of squares of recursive residuals (CUSUMSQ) tests. It was found that model is stable (short run and long run coefficients in the ARDL/ECM are stable) although CUSUMSQ test crosses the upper bounds of 5% level of significance may be due to non-normality of error terms.

**THE GRAPH OF CUSUM & CUSUMSQ FOR MODEL 1 IS SHOWN IN FIG. 8.2.2**

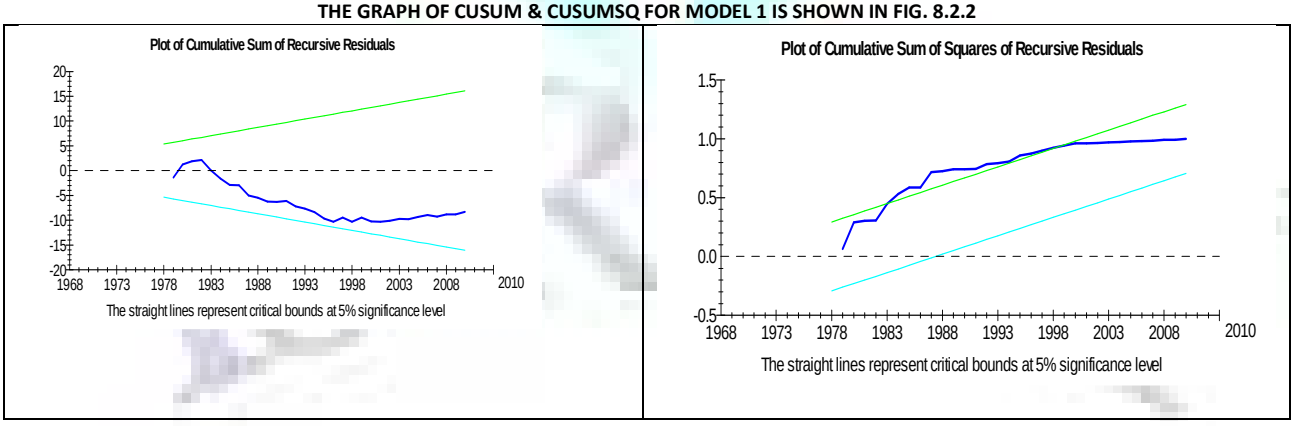


**TABLE 8.2.7: ESTIMATED LONG RUN COEFFICIENTS FOR MODEL 3 ARDL(0,3,1,3,2,3,3) BASED ON SBC**

| Dependent variable is $lnCF_t$ (43 observations used for estimation from 1968 to 2010) | | | |
|---|---|---|---|
| Regressor | Coefficient | Standard Error | T-Ratio[Prob] |
| $lnSF_t$ | 1.9803 | .23831 | 8.3097[.000] |
| $lnAF_t$ | -.049632 | .011700 | -4.2421[.000] |
| $lnFB_t$ | -1.2150 | .23290 | -5.2169[.000] |
| $lnMAR_t$ | -.18628 | .033860 | -5.5014[.000] |
| $lnMAWLW_t$ | .021031 | .071654 | .29351[.772] |
| $lnMAT_t$ | -.97924 | .21221 | -4.6145[.000] |
| INPT | 5.9286 | 1.2992 | 4.5631[.000] |
| T | .029923 | .0040886 | 7.3185[.000] |

The empirical results of the long-run relationship for model 3 shown in table 8.2.7, indicate that natural log of fish catch/production of shizothorax specie ($lnSF_t$) has statistically significant effect on natural log of fish catch/production of carp specie ($lnCF_t$) at less than 1% significant level. The positive sign and magnitude of the variable depicts that as the shizothorax (native specie) fish catch/production increases by 1% the catch of carp specie increases by about 198%, all other things being equal. However, a 1% increase in actual number of fishers decreases the carp production by about 5%. While a 1% increase in fishing boats decreases carp production by about 122%. The negative sign of the coefficient of natural log of mean annual rainfall shows that a 1% increases in mean annual rainfall decreases carp fish production by about 19%. The results of rainfall are in contrast to the results found by Jan-Olaf Meynecke et al., (2006). The sign of the coefficient for natural log of mean annual atmospheric temperature shows detrimental impact of climatic change on carp fish specie in temperate wetlands. The magnitude of the coefficient of the variable indicates that a 1% increase in annual atmospheric temperature reduces carp production by about 98%. Both the intercept and Trend are significant at less than 1% significance level.

**TABLE 8.2.8: ERROR CORRECTION REPRESENTATION FOR MODEL 3 ARDL(0,3,1,3,2,3,3) BASED ON SBC**

| Dependent variable is $dlnCF_t$ (43 observations used for estimation from 1968 to 2010) | | | |
|---|---|---|---|
| Regressor | Coefficient | Standard Error | T-Ratio[Prob] |
| $dlnSF_t$ | .61013 | .15155 | 4.0259[.000] |
| $dlnSF_t(-1)$ | -1.1428 | .13091 | -8.7296[.000] |
| $dlnSF_t(-2)$ | -.53418 | .067444 | -7.9203[.000] |
| $dlnAF_t$ | -.017246 | .012459 | -1.3842[.179] |
| $dlnFB_t$ | -.10071 | .10780 | -.93418[.359] |
| $dlnFB_t(-1)$ | .68149 | .11297 | 6.0327[.000] |
| $dlnFB_t(-2)$ | .57346 | .082549 | 6.9470[.000] |
| $dlnMAR_t$ | .012568 | .023758 | .52902[.601] |
| $dlnMAR_t(-1)$ | .088171 | .022742 | 3.8770[.001] |
| $dlnMAWLW_t$ | -.034221 | .048026 | -.71254[.483] |
| $dlnMAWLW_t(-1)$ | .14227 | .051452 | 2.7650[.011] |
| $dlnMAWLW_t(-2)$ | .084754 | .047635 | 1.7792[.087] |
| $dlnMAT_t$ | -.19213 | .080440 | -2.3885[.025] |
| $dlnMAT_t(-1)$ | .72473 | .13849 | 5.2330[.000] |
| $dlnMAT_t(-2)$ | .64426 | .13242 | 4.8654[.000] |
| dINPT | 5.9286 | 1.2992 | 4.5631[.000] |
| dT | .029923 | .0040886 | 7.3185[.000] |
| ecm(-1) | -1.0000 | 0.00 | *NONE* |

Error correction representation for model 3 is reported in table 8.2.8. The results reveal the importance of shizothorax fish stock in determining the carp fish production- a 1% increase in current period shizothorax fish production increases current period carp fish production by 61%. However, a 1% increase in one-period & two-period lags shizothorax fish production decreases current period carp fish production by about 114% and 53% respectively. This clearly reflects relationship between previous period's shizothorax catch and current period carp catch in the short-run and confirms that the two species have mutually benefitted each other. The coefficient of natural log of fishing boats is significant at less than 1% level and shows that a 1% increase in one-period and two-period lags of number of fishing boats increases carp production by 68% and 53% respectively. Similarly, a 1% increase in one-period lag mean annual rainfall decreases current period carp fish production by about 9%. While the coefficient of one-period lag mean annual water level of the wetlands is significant at 1% level and indicates that a 1% in previous period's water level of wetland increases carp production by 14%. Similarly, two-period lag water level is significant at 10% level and a 1% increase in two period lag water level increases carp production by 8%. The results for water level of wetland are in accordance with results found by Baran E. et al., (2001) and Ndebele-Murisa M. R. and et al., (2011). The impact of the natural log of mean annual atmospheric temperature on carp production is mixed. While the sign and magnitude of the current-period mean annual atmospheric temperature shows that a 1% increase in mean annual atmospheric temperature decreases carp fish production by 19%, the one-period lag shows that a 1% increase in mean annual atmospheric temperature increases carp production by 72% and is significant at less than 1% level. Similarly, a two-period lag in natural log of mean annual atmospheric temperature shows that a 1% increase in air temperature increases carp production by 64% and is significant at less than 1% level. Thus, although the impact of mean annual air temperature on overall fish production is insignificant but effect on individual species is significant and detrimental both in the long-run as well as short-run. Both trend and intercept have turned significant at less than 1% significance level. The error correction term ecm (-1) for model 3 appears with a negative sign and is statistically significant at less than 1% level. The coefficient of -1.0000 implies that 100 per cent of the disequilibrium in carp fish production from the previous period's shock will converge back to the long-run equilibrium in the current period.

**TABLE 8.2.9: GOODNESS OF FIT & DIAGNOSTIC TESTS FOR MODEL 3**

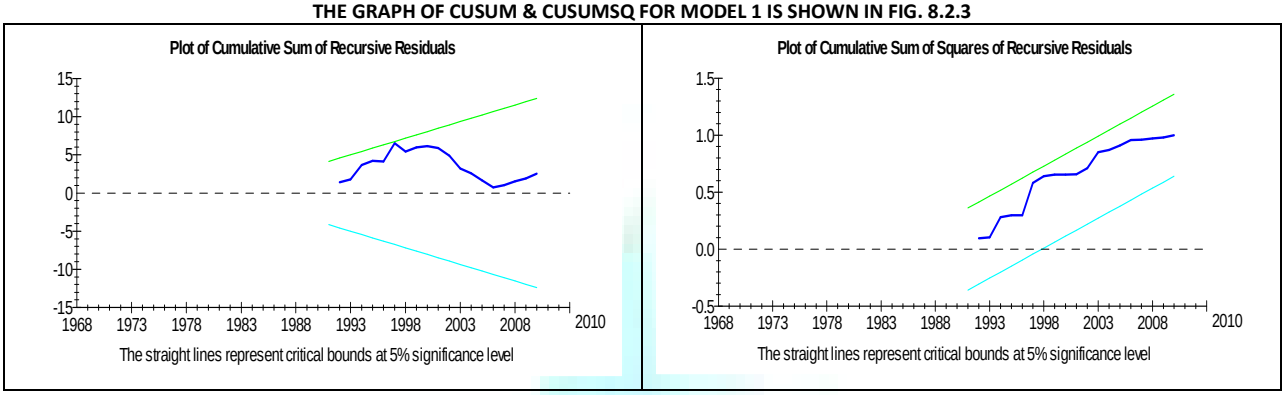
| | |
|---|---|
| R-Squared: 0.99864 | R-Bar-Squared: 0.99714 |
| F- statistic: F( 22, 20) 666.7787[.000] | DW-statistic: 2.2178 |
| σ of Regression: 0.022857 | Breusch-Godfrey test: $\chi^2(1)$= 0.64724 [.421] |
| Ramsey's RESET test: $\chi^2(1)$= 3.3113[.069] | Jarque-Bera test: $\chi^2(2)$= 0.73514[.692] |
| Engle's ARCH LM test: $\chi^2(1)$= .085215[.770] | |

Apart from the high significance levels of variables and the existence of a long-run relationship, our model is statistically well behaved. We applied a number of diagnostic tests to model 3, such as Breusch-Godfrey or Lagrange Multiplier test of Residual Serial Correlation and found no evidence of autocorrelation in the disturbance term. The evidence of no auto-correlation was further confirmed by the value of diagnostic test, D.W. Statistic 2.2178. The Engle's ARCH LM test of Heteroscedasticity suggests that the errors are homoscedastic and independent of the regressors. The model passes the Jarque-Bera test of Normality suggesting that the errors are normally distributed. However, the Ramsey's RESET test of Functional Form indicates that the model is not correctly specified but functional form is not a big issue in ARDL modeling Approach. While the adjusted $R^2$ of the model is high implying an excellent fit of the model- about 99% of the

variation in the fish production is explained by the regressors. In addition, the F-statistic is significant at less than 1% level expressing that the model has an overall good fit.

For stability of model 3 (parameter stability), we test the model by cumulative sum of residuals (CUSUM) and the cumulative sum of squares of recursive residuals (CUSUMSQ) tests. It was found that model is stable (short run and long run coefficients in the ARDL/ECM are stable) as neither CUSUM nor CUSUMSQ tests exceed the lower and upper bounds of 5% level of significance. Therefore the null hypothesis of all coefficients in the given regression model are stable cannot be rejected.

**THE GRAPH OF CUSUM & CUSUMSQ FOR MODEL 1 IS SHOWN IN FIG. 8.2.3**




## 9. CONCLUSIONS, SCOPE FOR FURTHER RESEARCH & POLICY IMPLICATIONS

This study was primarily conducted to empirically investigate the impact & possibility of existence of long-run relationship between fish production & environmental factors in temperate valley of Kashmir. In this study error correction and cointegration techniques based on newly developed ARDL modeling approach, were applied to construct a fish production model for Kashmir Valley covering period 1965-2010. The findings support the existence of long-run equilibrium between fish production and economic & environmental determinants both at aggregate level as well as at individual specie level. It was found that in the long run, actual number of fishers and number of fishing boats acquire highly significant relationship with fish production in case of Kashmir Valley. While in case of Shizothorax fish production, carp specie, mean annual atmospheric temperature turned out to be significant. And in case of carp & Shizothorax species, actual number of fishers, number of fishing boats, mean annual rainfall and mean annual atmospheric temperature were found significant. The findings on the short-run relationships show that fish production (with two lags), actual number of fishers, number of fishing boats and mean annual water level of the wetland have significant impact on the total fish production. While in case of Shizothorax fish specie, carp specie (both current period and lag period), actual number of fishers, and mean annual atmospheric temperature were found significant. The short-run determinants found significant in case of carp fish specie are shizothorax specie (both current period and 2 period lags), number of fishing boats (with 2 lags), lagged mean annual rainfall, mean annual water level of the wetland (with 2 lags) and mean annual air temperature (both current period and 2 period lags). In doing so, this paper has made a significant contribution in explaining impact of economic & environmental determinants on wetland fish production. The study therefore supports recent calls recommending that environmental factors have certain impacts on wetlands and wetland fisheries. This research contributes to the field of fisheries economics in two important ways. First, it explores the impact of environmental variables (besides economic variables like fishing effort) if any, on the wetland fish production. Second, it explores the impact of environmental variables (including exotic species) on certain species of fish. By and large, our analysis reveals that the environmental factors have an impact (negative/positive) on fish production in temperate zones like Kashmir valley both in the short-run and long-run. The key findings of the study support the hypothesis regarding the role of environment in natural aquatic production functions and shows that environmental variables are equally important to fish production in temperate zones like Kashmir Valley. The policy implication which can be drawn from the study is that if fisheries sector is to be made sustainable then impact of environmental determinants must be taken into policy making. Indeed an area for future research would be to estimate the relationship or nexus between inland fish production and economic & environmental determinants using data from different temperate & tropical wetlands.

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# PROBLEMS AND PROSPECT OF ENTREPRENEURS IN INDUSTRIAL ESTATES IN KERALA: A STUDY WITH REFERENCE TO KOTTAYAM DISTRICT

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*KUMARAMKARY P O, CHANGANACHERRY*

**ABSTRACT**

*For a developing country like India it is very necessary to stimulate entrepreneurs to make investment in industrial estate to promote SSI units and thereby accelerating the economic development of the nation. The problems of entrepreneurs in industrial estates have to be identified and provide with adequate inducements to counterbalance the inherent disadvantages from which they suffer. Revealing the prospects of existing entrepreneurs encourages more and more entrepreneurs. Thus the study the problems and prospects of entrepreneurs in industrial estates is of much interest for the economic development of the nation.*

**KEYWORDS**
Entrepreneurs, industrial estates, Kerala.

## INTRODUCTION

The development of small scale units play an important role in the development of nation . Industrial estates are established as a measure for the development of small scale units. An industrial estate is a well planned unit with ready built factory space which is let out on rent or sold to industrialists. Industrial estates assumed the role of regional development through provision of built in factory accommodation with requisite facilities and services. For a developing country like India it is very necessary to stimulate entrepreneurs to make investment in industrial estate to promote SSI units and thereby accelerating the economic development of the nation. The problems of entrepreneurs have to be identified and provided with adequate inducements to counterbalance the inherent disadvantages from which they suffer. Revealing the prospects of entrepreneurs encourages more and more entrepreneurs.

## IMPORTANCE OF THE STUDY

Industrial estates accelerate the integrated development of small scale industries in India. In a developing country like India setting up SSI units have to be given more importance because it creates more employment opportunities with lesser investment, brings about equalitarian distribution of income and wealth, encourages effective mobilisation of country's untapped resources and thereby bring backward areas too in the mainstream of national development. Industrial estates program also aims at dispersal of industry to rural and underdeveloped areas to raise their level of industrialisation and general economic development. The industrial estates in backward rural areas have to play promotional role and act as a pacesetter in the process of industrial development. Identifying the problems of entrepreneurs in industrial estate is of much importance which is to be overcome by taking necessary steps. Moreover pinpointing the prospects of entrepreneurs in industrial estate is of much importance to motivate new entrepreneurs. Because of the above reasons the research topic is relevant.

## OBJECTIVES OF THE STUDY

1) To study the performance of various enterprises in Industrial estates.
2) To study the extent of Government support to the entrepreneurs.
3) To study the problems of entrepreneurs in industrial estates.
4) To study the prospects of new or existing entrepreneurs.

## HYPOTHESES OF THE STUDY

1) Similar problems are faced by the entrepreneurs in both industrial estates.
2) There is no significant difference as to the provisions of amenities in both the estates.
3) There is no significant difference in the performance of units in Changanacherry and Ettumanoor Industrial estates

## RESEARCH METHODOLOGY

The study is based mainly on primary data collected from thirty entrepreneurs in Industrial estates of Kottayam District - Fifteen each from Changanacherry and Ettumanoor industrial estates. The sampling of industrial units has been done according to the convenience of the writer. For collecting data interview method has been applied. For this purpose a structured interview schedule has been prepared. For the purpose of analysis simple statistical techniques like ratios, percentages and weighted scores are used.

## ANALYSIS OF THE STUDY

"Problems and prospects of Entrepreneurs' in Industrial estates" an analytical study mainly based on primary data. The scope of the study is limited to SSI units in Industrial estates in Kottayam District in Kerala, India.
From the pilot study it was established that there are twelve important problems faced by entrepreneurs in Industrial estates. The entrepreneurs were asked to rank those problems in the order of importance and their weighted score is calculated to analyze them.The weighted score and rank of various problems assigned by respondents are presented in the table1

**TABLE NO. 1: WEIGHTED SCORE OF PROBLEMS OF ENTREPRENEURS**

| No. | Problems | Weighted score | Rank |
|---|---|---|---|
| 1 | Finance | 349 | 01 |
| 2 | Labour | 167 | 10 |
| 3 | Raw materials | 255 | 03 |
| 4 | Power | 251 | 04 |
| 5 | Market | 179 | 08 |
| 6 | Government regulations | 289 | 02 |
| 7 | Competition | 248 | 05 |
| 8 | Local problems | 168 | 09 |
| 9 | Lack of management expertise | 233 | 06 |
| 10 | Water supply | 194 | 07 |
| 11 | Communication | 143 | 11 |
| 12 | Common facilities | 135 | 12 |
| 13 | Other amenities | 130 | 13 |

Source: primary data

From the analysis it can be seen that Finance is the major problem faced by Industrial estate entrepreneurs. They stated Government regulations as their second major problem. Supply of Raw material, power, competition, lack of management expertise are other important severe problems that they are facing.

## PERFORMANCE OF UNITS IN INDUSTRIAL ESTATES

The performance of small scale units in industrial is very poor. From the analysis it can be seen that most of the units are making profit less than 15 percent. The percentage of profit earned by units visited are represented in table 2

**TABLE NO. 2: PERCENTAGE OF NET PROFIT EARNED BY SSI UNITS IN INDUSTRIAL ESTATES**

| Particulars | Changanacherry estate | Ettumanoor estate | Total |
|---|---|---|---|
| Loss | 0 | 3.33 | 3.33 |
| Less than 5% | 66.67 | 50 | 50 |
| 5-10% | 26.67 | 33.33 | 33.33 |
| 10-15% | 6.67 | 13.33 | 13.33 |
| Above 15% | 0 | 0 | 0 |
| | 100 | 100 | 100 |

Source: primary data

## FINDINGS

On the basis of the study following are the other major findings

1. The performance of units in industrial estates is poor. They are earning a profit of less than Fifteen percent. There is no significant difference in the performance of units in Ettumanoor and Changanacherry industrial estates.
2. Entrepreneurs are charged for their term loans at a higher rate. Rate of interest charged on loans is between 10-15 percent.
3. Most of the entrepreneurs stated that price of power facility is very high and they did not get any subsidised power.
4. Most of the entrepreneurs opined that they did not get any advantage by locating inside the estate.
5. Majority entrepreneurs complained that raw material is charged at a higher price.
6. Production problems faced by them include capacity utilisation and storage problems as they have only small rooms or sheds available in estates.
7. Marketing problems include cut throat competition, lack of advertisement, not branding products etc.

## SUGGESTIONS

1. Government has to provide more incentives and subsidies to the entrepreneurs of small scale units.
2. Government may take necessary steps to reduce the lending rate to small units.
3. Necessary steps have to be taken by the Government to supply required amount of quality raw material at reasonable price to small scale industries.
4. Marketing of goods produced by the units in the estate may be undertaken through separate agencies under the control government.
5. Adequate research and development activities should be encouraged by the government to develop small scale sector industries.

## CONCLUSION

Promotion of industrial estates is very much needed for the development of SSI sector and thereby the economic development of the country. From the study it is found that the performance of the units in the industrial estates shows a low profit margin. Many of the units are closed because of the loss they had to suffer. The Government can contribute to the promotion of industrial estate. It should be noted that the new industrial policies of Government provides for the prosperity of small units. If the government and other agencies related to SSI sector should take necessary steps to promote industrial estate, future of units in the industrial estate will be prosperous.

## LIMITATIONS OF THE STUDY

Most of the units do not maintain proper books of accounts and it makes data collection difficult and not reliable.

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