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- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
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- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

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WEBSITE

- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Economic and Political Weekly, Viewed on July 05, 2011 http://epw.in/user/viewabstract.jsp

LACK OF INFRASTRUCTURE AND VISION 2020 IN NIGERIA

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ABSTRACT

The study highlighted the importance of required infrastructures such as energy as a panacea to the realization of the objectives and goals of Vision 2020 in Nigeria. With the dearth of infrastructures, the move towards stability and consolidation in the polity becomes a tough and tall order. In the light of these, the importance of vision 2020 as a catalyst to the industrial development of the country and the placement of the nation in a central location within the comity of nations becomes imperative. It is in this instance that the millennium development goals (mdg) become realizable and of relevance in the achievement of the macro- economic objectives of government. Consequently ,the need to be well positioned in the provision of social amenities for the benefit of the citizens becomes a - must do for managers at all levels of governance and this determines to a reasonable extent the way forward for economic and technological breakthrough of the less developed economies such as Nigeria.

KEYWORDS
panacea, catalyst, vision, amenities, technological.

INTRODUCTION

To achieve industrial breakthrough via vision 2020 is a task that must be done and all hands must be on deck towards this laudable achievement. However there quite a number of obstacles which could militate against this achievement and one of such is the uninterrupted provision of energy which is believed could stand as a viable catalyst to the realization this lofty idea. The economic wellbeing of the citizenry is of paramount importance and prosperity as a basis for sustainable development is ideal. It is on record that 70% of our population lives on less than one dollar per day. It therefore becomes evident and realizable for us to plan towards achieving a breakthrough particularly in the threshold of thousand dollars per capital as fallout of vision 2020 in this regard. The aspiration to position Nigeria as one of the twenty biggest economy in the year 2020 and this calls for a serious reflection particularly on the various challenges militating against the realization of this lofty idea should critically assessed for positive results.

STATEMENT OF PROBLEM

Nigeria as the giant of Africa is a land flowing with milk and honey. A country blessed with huge resources of both human and material resources and yet stagnated in the first forty years as a nation with only 2.8% growth in GDP in the 1990s and an all high 70% poverty level in 1999 coupled with energy challenges among others. To achieve industrial breakthrough in 2020 a comprehensive and efficient reform programmes should be put in place and for the purpose of this study an ideal energy structure is required to jumpstart the economy. The right time is now for us to tackle headlong this energy challenge. The largest black nation as well as the 8th largest producer of oil and 6th largest deposit of gas coupled with 34 solid minerals and 44 exportable commodities in addition to huge arable farm lands implies that this country could not settle for less.

PURPOSE OF STUDY

In the light of the above mentioned attributes and challenges facing Nigeria as a nation towards the achievement of vision 2020, it becomes not negotiable therefore to uncover the problems associated with this tall order and suggest strategies that will enable us as a nation benefit from the modalities put in place to achieve this vision and put the nation at the pedestal of economic boom and prosperity among the comity of nations.

SCOPE OF STUDY

The study focuses on the energy situation in Nigeria as a panacea to the achievement of the gals assigned to vision 2020 in all ramifications. This will highlight the energy generation, distribution and consumption patterns as well as the required capacity needed in this economy. The study will cover the period between 1996 and 2008.

SIGNIFICANCE OF STUDY

The results of this study will provide the basis for developing appropriate strategies towards the achievement of vision 2020 and thereby place Nigeria in the global map of technological breakthrough and advancement.
This study will also reveal the extent to which the various stakeholders have gone in the actualization of this laudable vision and the level of awareness generated and required to achieving the ideal

OBJECTIVES OF STUDY

The broad objective of this study is to determine the truism on lack of infrastructure particularly energy sector as a challenge to the achievement of vision 2020 in Nigeria. To meet the general objective therefore, the following specific objectives is of the essence.

1. to identify the causes of energy challenges in Nigeria
2. to determine the level of sabotage in the energy challenge
3. to ascertain the efforts of government and other stakeholders in this regard
4. to classify the causal factors with regards the government and other stakeholders level of involvement
5. to proffer probable solution to tame these challenges

RESEARCH QUESTIONS

1. What are the likely and identifiable causes of energy challenges in Nigeria?
2 Are there likelihood of sabotage in the energy challenge?
3. What are the realistic efforts of government and other stakeholders to arrest this scourge?
4. How do we classify the identified causal factors within the government and other stakeholders?
5. What are the probable solutions available for Nigeria in the actualization of vision 2020?

RESEARCH HYPOTHESIS

Ho: There is no significant difference in energy as a relevant infrastructure to the actualization of Nigeria becoming a fully developed economy by year 2020.

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Between 1999 and 2007 when the Obasanjo administration was in place, a twin reform approach came on board as opined by Soludo (2007). The two phases of reforms took the form of socio-political reconstruction (demilitarization of the state and reconstructing the military); due process solely for accountability and transparency; strengthening institutions for democratic governance such as ICPC, DMO, the judiciary, legislature as well as the executive; the reintegration of Nigeria into the global community of nations and the foundation for private sector take off with the introduction of GSM services, privatization, infrastructure provision, security with special reference to an efficient military and police formations. All these manifested during the first phase of the Obasanjo administration between 1999 and 2003.

During the second phase which ran from 2003 through 2007, the National Economic Empowerment and Development Strategy tagged NEEDS came up with main objectives of wealth creation, employment generation, poverty reduction, and value reorientation. In the light of this, fiscal and monetary as well as exchange rates reforms, banking and insurance reforms, presidential initiatives on policy positions, deregulation of the downstream sector of the oil industry became the focal point for NEEDS in this instance.

All these reforms are expected to prepare the economy to becoming one of the top twenty economies by year 2020. What are the probable outcomes of these reforms therefore, the CBN Statistical Data revealed an average GDP growth of 7%since 2003 (2.8% in 1990s) with non-oil sectors growth above 8% since 2004 with agriculture taking the lead. The external reserves grew from 4billion USD in 1999 to 43.5 USD in 2006 even after paying off the Paris Club debt of 14billion USD. The country experienced an improved foreign investment of over 3billion USD in 2006 which was negative in the 1990s while unemployment rates moved from18% in 1990s to 5.3% in 2006.

Infrastructural challenges or deficiencies constitute matters arising in this instance for the objective of vision 2020 to be realizable and the energy challenge is a key factor.

CONCEPT PAPER FOR DEVELOPMENT OF VISION 2020

Nigeria's economic potential is well recognized. It is the biggest economy in the West African sub region. Given the country's considerable resource endowment and coastal location there is potential for strong growth. Yet Nigeria has realized very little of this potential. Previous efforts at planning and visioning were not sustained. The history of economic stagnation, declining welfare and social instability, has undermined development for most of the past 30 years.

But in recent years, Nigeria has been experiencing a growth turnaround and conditions seem right for launching onto a path of sustained and rapid growth, justifying its ranking amongst the N11 countries. These are the countries identified by Goldman Sachs to have the potential for attaining global competitiveness based on their economic and demographic settings and the foundation for reforms already laid.

The previous administration had declared the intention to pursue the vision of placing Nigeria among the 20 largest economies in the world by 2020 and the current administration is committed to the attainment of this vision.

CONCEPT FOR VISION 2020

A vision is a clear mental picture of the future which must represent a significant improvement on the current state. It however must be supported by a clear and realistic path to its realization and requires consistent and sustained effort for its achievement.

KEY GOALS FOR VISION 2020 - VISION STATEMENT

"By 2020 Nigeria will be one of the 20 largest economies in the world able to consolidate its leadership role in Africa and establish itself as a significant player in the global economic and political arena." (www.nv2020.org)

The News Magazine of February 23, 2009 reported that President Umar Musa Yar'Adua at the inauguration of the Business Support Group, BSG, for Vision 2020 in Abuja said that the country is targeting Gross Domestic Product of $900 billion from its present $294.8 billion, Per Capita Income of $4,000 and a Growth Rate of 300 per cent in order to realise its Vision 2020 dream.

The President who was represented at the occasion by Vice-President Good luck Jonathan noted that these targets must be met for Nigeria to move from its 40th position in the world's economy and the third in Africa to rank among the top 20 countries and first in Africa in 2020, despite the global economic crunch. The President remarked that the system of production and innovation must change radically to ensure meaningful growth in key sectors.

According to the President, Nigeria needs a sound, stable and globally competitive economy with a Gross Domestic Product, GDP, of not less than $900 and per capita income of $4000. President Yar'Adua believes that with a vibrant and globally competitive manufacturing sector that could contribute significantly to the GDP, say with a manufacturing value added of not less than 40 per cent, Vision 2020 is possible.

Determined to ensure its success, a nine-month time frame had been set for the completion and production of the Vision's document. The document would be ready by September this year, the President posited.

The President wants the country to improve her education and health delivery systems in order to build an effective human capital that will drive development. The 300 per cent growth rate was based on the key parameters for ranking global economies - a high and growing GDP level, investment level of not less than 40-60 per cent of GDP, per capita income of not less than $10,000 and unemployment level of less than 10 per cent.

Others include a high and balanced education, high technological development, high capacity utilization in manufacturing of not less than 75 per cent, among others. The BSG is the private sector initiative towards the actualization of the Vision 2020. The private sector is expected to contribute actively in the envisioning process for the future of the country.

The major organs of the developmental and implementation framework of vision 2020 plan has the national council on vision 2020 at he apex and the process is solely based on a bottom-up strategic planning approach which ensures ownership by all stakeholders.

NATIONAL STEERING COMMITTEE

The National Steering Committee (NSC) shall consist of about 70 persons to develop the V2020 implementation guidelines and Monitoring and Evaluation (M&E) strategy ensuring a bottom-up approach by which all key agencies, Ministries, Departments and Agencies (MDAs) as well as State, Local Government Areas (LGAs) etc are encouraged to prepare and implement their "component of the V2020" in line with the national priorities. The NSC will also develop a template for preparing the V2020 strategic plan and annual Communication on Progress (COP), and will collate same to prepare the annual performance report for the National Council.

The NSC will have its membership drawn from the Public and Private Sectors, including other national institutions as follows

SECRETARIAT OF THE NATIONAL STEERING COMMITTEE

The National Steering Committee will be anchored by the National Planning Commission (NPC) which shall serve as the Secretariat. It shall also be chaired by the Minister and Deputy Chairman NPC with the Secretary to NPC as its Secretary. The Secretary to the NSC is closely assisted by three Deputy Secretaries. In order to allow for inclusiveness, the private sector is actively involved in the process. In this regard, the Director General of NESG has been engaged to serve as one of the Deputy Secretaries.

NATIONAL TECHNICAL WORKING GROUP FOR V2020

The National Steering Committee shall be supported by the National Technical Working Groups (NTWGs). The NTWGV2020 will comprise of about 20-25 groups of experts for the identified thematic areas drawn from both public and private practitioners with responsibility, expertise and passion for the area. They may also be assisted by consultants where necessary to undertake specific studies or research work to provide the data necessary for the working groups report. The National Technical Working Groups shall also work closely with and assist the stakeholder groups in preparing their vision 2020 documents.

STAKEHOLDER V2020 DEVELOPMENT COMMITTEES

The V2020 would be a bottom-up strategic plan in which each major stakeholder group will prepare its V2020 document based on the guidelines approved by the National Council in line with the national goals and priorities. It is intended to have about 20-25 stakeholder committees. Stakeholders will include State Governments, MDAs and other key institutions.

While the MDAs and other Stakeholder Development Committees are expected to provide information that will feed into the NV2020 Plan, the State Development Committees will generate information that will feed into the State V2020 documents using the Federal Guidelines.

ECONOMIC MANAGEMENT TEAM

The Economic Management Team will serve as Think-Tank to drive the visioning process. The Chairman and Vice Chairman of the EMT are members of the National Council and National Steering Committee on Vision 2020 as well as provide the vital link and feedback from both directions between the National Council and the National Steering Committee. They will therefore provide the vital link and feedback from both bodies

METHODOLOGY AND DATA ANALYSIS

This study involved the collation and analysis of data to ascertain the sort of challenges militating against the realization of vision 2020. The study is empirical an nature and the **anova** statistical method of analysis was adopted for this study to determine the level of significant difference of the identified variables.

PERCENTAGE DISTRIBUTION OF HOUSEHOLDS BY TYPE OF ELECTRICITY FACILITIES

Percent

Type of Electricity	1999	2000	2001	2002	2003	2004	2005	2006
Public Only	41.36	44.00	47.56	47.16	39.40	35.30	43.60	39.45
Public/Private	0.17	0.60	2.39	1.65	3.20	3.23	4.30	2.15
Private Only	0.76	0.30	6.99	8.05	1.80	0.20	3.40	1.80
Others	57.71	50.60	43.06	43.14	55.60	64.50	48.70	56.60
Total	100.01	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: National Bureau of Statistics

PERCENTAGE DISTRIBUTION OF DWELLING UNITS BY TYPE OF WATER SUPPLY

Percent

Type of Water	1999	2000	2001	2002	2003	2004	2005	2006
Pipe borne Water	24.38	45.90	55.07	23.38	15.78	14.50	16.20	15.35
Borehold Water	11.83	16.60	0.68	17.02	22.04	17.60	24.00	20.80
Well Water	28.27	2.30	14.31	26.76	27.83	36.00	25.10	30.55
Streams/Pond	33.82	33.60	29.94	32.08	33.00	31.50	33.50	32.50
Tanker/truck/Van	1.70	1.70	-	0.85	1.35	0.40	1.20	0.80
Total	100.01	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: National Bureau of Statistics

ELECTRICTY GENERATION

'000 KWH

POWER STATION	1980	1990	2000	2001	2002	2003	2004
HYDRO:	**2,953,952.0**	**2,803,138.0**	**6,441,603.0**	**6,193,533.0**	**6,390,486.0**	**7,752,670.0**	**8,086,884.4**
Kainji	2,953,952.0	1,151,374.0	6,441,603.0	1,587,309.0	2,104,322.0	2,642,795.0	2,960,184.5
Jebba	0.0	1,651,764.0	-	1,930,978.0	2,087,220.0	2,571,041.0	2,703,745.0
Shiroro	0.0	-	-	2,675,246.0	2,198,944.0	2,538,834.0	2,422,954.9
THERMAL:	**4,389,238.0**	**8,510,996.0**	**8,217,776.0**	**10,760,676,.04**	**13,210,010.8**	**15,015,458.0**	**16,122,036.7**
Ijora	150,710.0	14,353.0	8,217,776.0	7,087.0	1,594.0	4.0	54.0
Calabar	1,453.0	281.0	-	-	661.0	786.2	838.2
Afam	784,521.0	1,107,010.0	-	340,195.0	1,733,567.0	2,090,538.3	1,247,712.4
Delta	1,049,271.0	1,097,380.0	-	2,141,890.0	3,429,194.0	3,451,996.0	3,933,905.3
Sapele	2,306,122.0	1,145,700.0	-	1,328,813.0	1,167,021.0	904,640.0	1,025,775.0
Lagos (Egbin)	0.0	4,719,919.0	-	6,941,105.0	6,876,965.3	6,810,113.7	7,958,727.8
Ajaokuta		0.0	325,988.0	-	-	-	-
Others		69,533.0	8,076.0	-	-	-	-
PURCHASE		27,628.0	92,289.0	-	1,586.0	1,669.5	1,757,379.7	1,955,024.0
Total		7,343,190.0	11,314,134.0	14,659,379.0	16,954,209.0	19,600,496.8	22,768,127.9	24,208,921.1

Source: Power Holding Company of Nigeria

YEAR	TOTAL CAPACITY	TOTAL GENERATED	TOTAL CONSUMED	% of TOTAL GENERATED
1996	4,549	1,854	1,033	55.7
1997	4,549	1,840	1,010	54.9
1998	4,549	1,725	973	56.4
1999	5,580	1,860	884	47.5
2000	5,580	1,738	1,017	58.5
2001	6,180	1,690	1,105	65.4
2002	6,180	2,237	1,272	56.8
2003	6,130	6,180	1,520	63.4
2004	6,130	2,764	1,826	66.1
2005	6,862	2,779	1,873	67.4
2006	6,862	N/A	N/A	N/A
2007	6,862	N/A	N/A	N/A
2008	N/A	N/A	N/A	'N/A

Source: Power Holding Company of Nigeria

Note: The researcher assumed the figures for 2005 from all indicators to be relevant through 2008 for data analysis.

ANOVA: SINGLE FACTOR

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	13	76875	5913.461538	803535.3
Column 2	13	33004	2538.769231	1422748
Column 3	13	18132	1394.769231	172992.4
Column 4	13	794.3	61.1	42.28667

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	244671434.7	3	81557144.88	135.9672	1.83E-23	2.798061
Within Groups	28791813.29	48	599829.4435			
Total	273463247.9	51				

From the result of data analysis above, the calculated F-ratio of 135.96 is greater than the critical F-value of 2.79 at 0.05 level of significance. The null hypothesis is therefore rejected. We conclude that there is a significant difference in energy as a key infrastructural facility to the actualization of Nigeria becoming a fully developed economy by year 2020.

RECOMMENDATIONS

1. To actualize vision 2020 the level of unemployment especially urban youths should be positively controlled.
2. It is a fact that high rate of urbanization is associated with crime as well as putting pressure on urban infrastructures and most especially housing and to minimize the negative impact on Nigeria becoming a fully developed economy by year 2020, this has to be addressed.
3. The states should be development oriented in order to stem the rural urban drift and in such situation the onus will be on the government to provide basic amenities to be able to checkmate the drift to enhance even development.
4. Security of lives and properties is imperative to put at bay the concept of brain drain which is a serious challenge to achieving economic development.
5. Political stability coupled with clear vision, effective planning and implementation should be accorded high priority.
6. In this part of the world, the energy sector is most ideal to empower the citizens and help turn the growth indices in the economy to developmental prospects.
7. In the light of the above, the achievement of the desired macro-economic objectives in the economy will not be a mirage and by extension the prospective plan of vision 2020 on Nigeria as a nation. This business plan with the noble intention to make Nigeria a fully developed economy by year 2020 will become a reality and all hands must be on deck towards achieving this feat.
8. The private participation particularly in the area of renewable energy such as solar and wind energy should be put in place with the complete backing and encouragement from the government.
9. Our overdependence on imported materials will spell doom for our economic since in will definitely create a flaw on our industrial sector and our infant industry, hence the high level of unemployment in the economy while we have succeeded in creating jobs in the foreign economies.

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IMPACT OF SELECTED ISSUES ON WORK-FAMILY BALANCE: EMPIRICAL EVIDENCE FROM PRIVATE COMMERCIAL BANKS OF BANGLADESH

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ABSTRACT

In the light of the rapid change of the nature of organizations as well as the roles of male and female in the organization has given rise to the importance of work-family balance. Some organizational issues play crucial roles in balancing work and family life. The long work hours or the support from supervisors and co-workers are few examples. Besides, some personal issues can also be considered in this regard. In general, it has been already found that females are facing more work-family balancing problems than males. In addition, for parents who work, achieving a balance between work and family commitments is highly desirable for all family members. Therefore, this paper is to explore the impact of some selected issues on the work-family balance of the employees in the banking sector of Bangladesh.

KEYWORDS
Work-family balance, bank, Bangladesh, gender.

INTRODUCTION

Recently, balancing work and family responsibilities has become a key issue for employers, governments and families across the world. Work–family balance reflects the orientation of an individual across different life roles, an inter-role phenomenon (Marks and MacDermid, 1996); a work family conflict arises when an individual has to perform multiple roles that require time, energy and commitment (Greenhaus and Beutell, 1985). However, in the past, work- family balance has been considered a women's issue; recent studies indicate that men are as likely as women to have difficulty in managing work-family demands (Hill et.al., 1997; Levine and Pittinsky, 1997; Milkie and Peltola, 1999).

There are several factors that influence work-family balance significantly. Studies (Major et. al., 2002, Frone et.al., 1997) have found that long work hour can have a prominent impact on balancing work and family. On the contrary, social support provided by supervisor and co-workers can mediate work-family balance (Seiger and Wiese, 2009, Carlson and Perrewé, 1999, Cohen and Wills 1985). However, leaving these organizational aspects, some personal issues can also play important roles in influencing the work-family balance. Several studies (Greenhaus and Powell, 2006, Higgins et.al., 1994, Gutek et.al., 1991, Voydanoff 1988) have identified that women reported that work-family balancing is considered as difficult for them and employees with children have also faced difficulty in balancing family with work (Lyness and Kropf, 2005, Voydanoff, 2005, Greenhaus and Beutell 1985). Moreover, previous research has shown that work-family conflict leads to various negative outcomes, including job dissatisfaction (Gordon, et. al., 2007, Boles, et. al., 2001, Hill et. al., 2004).

From the context of Bangladesh, financial sector reform in the country started in 1976 with privatization of the banks (Ahmad and Khanal, 2007) and a rapid expansion of private banks has taken place from the mid nineties till present (Rahman, et. al., 2006). At present, there are 49 commercial banks of which 30 are private commercial banks. The banking sector employs a significant number of employees - more than 1,10,000 people (Ahmad and Khanal, 2007). However, long working hours, excessive work pressure and handling demanding and unique customers in banks has become a take-for-granted phenomenon in the banking sector. Therefore, this study aims to explore the factors that have influence on the work-family balance of the employees of private commercial banks.

OBJECTIVES OF THE STUDY

The study purports to explore the factors that have direct influence on employee work-family balance in the private commercial banks of Bangladesh. This study considers long working hour, social support, gender of the employees and parental status of the employees to explore the work-family balance. By understanding this perspective, the bank management can derive ways to improve employee work-family balance. By conducting this study, the findings should help both management and employees of the banks to understand work-family balance in context of Bangladesh. Specifically the four objectives are,

- To identify how long working hour is related with work-family balance.
- To find out whether supervisor's support and co-worker's support help the employees to balance their work and family.
- To investigate whether work-family balance varies significantly in terms of gender of the employees.
- To know whether employees with children face greater difficulty in terms of work-family balance.

HYPOTHESES OF THE STUDY

LONG WORK HOUR AND WORK-FAMILY BALANCE

Kanter (1977) noted that job-related time demands are among the most obvious ways that work life affects family life. According to Hobfoll (1989), spending more time at work equals an increase in financial resources but it reduces the time for personal or family roles. Specifically, long work hour can negatively

influence the work-family balance of those, who have greater number of family roles (Grandey et. al., 2007). More specifically, Shamir (1983) reported that working more than 9 hours a day can lead to much greater conflict between work and non-work aspects of life. Consistent with this notion, the number of hours spent at work has been shown to envisage work-family conflict (Frone, et.al., 1997, Major, Klein and Ehrhart 2002, Netemeyer, et.al., 1996, Thompson and Prottas 2005). Along with these researchers several prior researches have demonstrated the impact of work time and work involvement on work-family conflict (Eagle, et. al., 1998, Judge, et. al., 1994). In contrast, individuals experienced the highest level of work-to-family conflict and stress, who were more engaged in work than family. Thus reducing work time can facilitate work-family balance (Grandey, et. al., 2007, Hill, Hawkins, Ferris and Weitzman 2001). As the banking employees need to stay at the office for a long time, the current study aims to explore the relationship between long work hour and work-family balance. The prediction is,

Hypothesis 1 ($H1_a$): There is a significant negative correlation between long work hour and work-family balance among the employees of private commercial banks in Bangladesh.

SOCIAL SUPPORT AND WORK-FAMILY BALANCE

Social support from different sources has been shown to be associated with work–family conflicts in several researches (Carlson and Perrewé 1999, Cohen and Wills 1985). It appears that social support reduces work–family conflict or it can reduce role conflict and role ambiguity that lead to work–family conflict, such as (Daalen, et.al., 2006). Seiger and Wiese (2009) further mentioned that support from supervisors or co-workers may be involved in the stressors at work that cause work–family conflicts. According to Beehr, et.al., (2000), co-worker support can work positively when the employees are miserable situation and disturbed at their workplace. So Frone, et.al., (1997) concluded that support by supervisor and co-workers can reduce work distress and work overload, which in turn eases work-family conflicts. Fisher (1985) also showed that social support from supervisor and co-workers was negatively correlated with stress. Besides, Carlson and Perrewé (1999) examined the relation of social support and work-family conflict and they mentioned social support as ''protective function", which describes a coping mechanism: "People with strong social support should be less likely to perceive stress for work-family balance". Therefore, the study aims to examine the relationship between social support, specifically supervisor and co-worker support, and work-family balance. Thus, the prediction is,

Hypothesis 2 ($H2_a$): There is a significant positive correlation between support from manager and work-family balance among the employees of private commercial banks in Bangladesh.

Hypothesis 3 ($H3_a$): There is a significant positive correlation between support from co-workers and work-family balance among the employees of private commercial banks in Bangladesh.

GENDER AND WORK-FAMILY BALANCE

Most work–family research takes possible gender differences under consideration (Greenhaus and Powell 2006). Gender may influence the ability of balance work and family in a number of different ways (Higgins, et.al., 1994). Gender differences in work–family studies are often attributed to traditional gender-role norms, that describes "women as to be expected to take care of the household and men to be the breadwinners" (Brummelhuis, et.al., 2008). But this assumption is no longer viable (Higgins, Duxbury & Lee 1994) as the number of dual-earner families is growing and more modern gender-role norms is prevailing, where it is ascertained that with both men and women both are found as important to participate in family life and work (Cinamon and Rich, 2002). Some studies found that family characteristics have a stronger negative effect on female employees work outcomes than on male employees (Keene and Reynolds, 2005; Dilworth, 2004; Duxbury and Higgins, 1991; Gutek, et.al., 1991; Voydanoff, 1988). Thus the current study wants to determine the impact of gender difference on work-family balance. The prediction is,

Hypothesis 4 ($H4_a$): Female employees of private commercial banks in Bangladesh face greater difficulty in terms of work-family balance than male employees.

CHILDREN AND WORK-FAMILY BALANCE

Achieving a balance between work and family commitments is highly enviable among the working parents. It is found that a good work-family balance not only can contribute to better health, educational and social outcomes for children but also can increase the opportunities available for women in the workforce, and help men to spend more time with their families (Gornick and Meyers, 2003). Thus it is linked to higher levels of satisfaction with parental relationships (Headey, et.al., 2006).

It is found that increasing demand on work-family balance can arise from pressure of the children to participate in family-role extensively (Greenhaus and Beutell 1985). Dual earner couples with no children reported greater work-family balance than the parents (Tausig and Fenwick 2001). Thus employees who are living with children are negatively related to work-family balance as they face extensive amount of work-family conflict (Lyness and Kropf 2005). Brummelhuis, et.al., (2008) mentioned that the presence of young children is positively related to emotional exhaustion that mainly leads to work-family conflict. In fact having children means it increases the number of family roles, which creates further inter-role conflict (Greenhaus and Beutell 1985, Kahn, et.al., 1964). Thus it can be said that family roles are positively correlated with work family conflict (Allen 2001, Netemeyer et al. 1996, Thompson and Prottas 2005). Consistent with these ideas the present study purports to explore the influence of children on work-family balance. Thus the prediction is,

Hypothesis 5 ($H5_a$): Employees with children face greater difficulty in terms of work-family balance than employees without children in the private commercial banks of Bangladesh.

RESEARCH METHODOLOGY

The sample of this present study consists of the employees who are working in the private commercial banks of Dhaka, Bangladesh. The sampling technique adopted is simple random sampling. Both male and female employees of the banks are considered for survey into equal number. In total, 80 questionnaires are distributed among the employees of four private commercial banks through drop and collect method, out of which 60 are finally included in the study for data analysis. The rests are rejected due to incompleteness, errors, ambiguity, etc.

The questionnaire used in the survey consisted of two sections. The first section is designed to measure the perception of bank employees on work-family balance issues where as the last section was the demographic information of respondents namely; gender, age, marital status, number of children, education level, income level, position, years of service in the banking service.

At first, the internal consistency method is adopted for ensuring reliability of the data. Descriptive statistics are calculated to describe the main characteristics of the subjects and the distribution of subjects according to the intensity of work-family balance experienced. Correlation coefficients are computed to examine the relationships between work-family balance, its determinants. A series of regression analyses is employed to test the hypotheses of the study.

RESEARCH FINDINGS

HYPOTHESES TESTING

According to the correlational analysis results, it is found that there is significant relationship between long work hour and work-family balance ($r = -0.28$, $p<0.05$). It shows an increase in long working hour leads to a decrease in work-family balance (see Table 1). This result supports H1a, stating correlation between long work hour and work-family balance. There is a significant relationship between work-family balance and support from manager ($r = 0.37$, $p<0.01$).

TABLE 1: CORRELATION BETWEEN WORK-FAMILY BALANCE AND EACH DETERMINANT

Variable	1	2	3	4	Mean	Standard Deviation
Work-family balance	-				3.08	0.84
Long work hour	0.015**	-			3.76	1.47
Support from manager	0.002*	0.255	-		2.75	1.12
Support from colleagues	0.000*	0.101	0.005	-	2.65	1.27

Note: * p<0.01, ** p<0.05

The result indicates an increase in support from managers can lead to an increase in work-family balance, supporting the H2a. The result also reveals a significant correlation between support from colleagues and work-family balance (r = 0.19, p<0.01), which indicates that an increase in support from colleagues can lead to an increase in work-family balance. Thus this result supports H3a.

A series of independent sample t-tests are used to find the difference in perceptions of male and female employees regarding work-family balance. From the result, it is explored that there is no significant difference between the male and female employees perception regarding work-family balance (p>0.05) (see Table 2). The result also reveals no significant difference between male and female employees regarding long work hour, support from manager, and support from colleagues (for all the cases p>0.05). Thus it does not support H4a that indicates female employees do not face greater difficulty in terms of work-family balance than male employees in the private commercial banks of Bangladesh.

TABLE 2: INDEPENDENT SAMPLE T-TEST RESULT TO DETERMINE BETWEEN MALE AND FEMALE EMPLOYEES

Variable	Mean	Mean	t	df	Sig. (2-tailed)
Long work hour	Male	3.53	-1.22	58	0.22
	Female	4.00			
Support from manager	Male	2.67	-0.56	58	0.57
	Female	2.83			
Support from colleagues	Male	2.83	1.11	58	0.26
	Female	2.47			
Work-family balance	Male	3.13	0.45	58	0.65
	Female	3.03			

The t-test result also reveals that there is no significant difference between employees with children and employees without children (p>0.05) (see Table 3). The result also reveals no significant difference between employees with children and employees without children regarding long work hour, support from manager, and support from colleagues (for all the cases p>0.05). So it does not support H5a, which indicates employees with children do not face greater difficulty in terms of work-family balance than employees without children in the private commercial banks of Bangladesh.

TABLE 3: INDEPENDENT SAMPLE T-TEST RESULT TO DETERMINE BETWEEN EMPLOYEES WITH CHILDREN AND WITHOUT CHILDREN

Variable	Mean	Mean	t	df	Sig. (2-tailed)
Long work hour	Employee with children	3.42	-1.24	58	0.22
	Employee without children	3.93			
Support from manager	Employee with children	2.53	-1.05	58	0.30
	Employee without children	2.85			
Support from colleagues	Employee with children	2.84	0.79	58	0.43
	Employee without children	2.56			
Work-family balance	Employee with children	3.21	0.78	58	0.43
	Employee without children	3.02			

The results of regression analysis presented in Table 4 examine the relationship of work-family balance with its determinant factors. The results indicate that long work hour can reduce the work-family balance opportunity (β = -0.27, p<0.05). Support from manager (β = 0.79, p<0.01) and support from colleagues (β = 0.31, p<0.05) can directly facilitate work-family balance by increasing work-family balance scope.

TABLE 4: REGRESSION ANALYSIS RESULT OF WORK-FAMILY BALANCE WITH EACH PREDICTOR

Criterion Variable	Predictor Variable	Beta (β)	R square	Adjusted R square	Sig. (p-value)
Work-family balance	Long work hour	-0.27	0.13	0.10	0.03**
Work-family balance	Support from manager	0.31	0.22	0.18	0.02**
Work-family balance	Support from colleagues	0.79	0.65	0.63	0.00*

Note: * p<0.01, ** p<0.05

DISCUSSION

This study examined the correlation between work-family balance and its several predictors. The results reveal a negative relationship of between long work hour and work-family balance (supporting H1a). Besides, the study results also suggest an existing positive relationship between support from supervisor and support from colleagues (supporting H2a and H3a). These findings are consistent with the previous findings. However, the results indicate no significant difference among the perception of male and female employees regarding work-family balance (not supporting H4a) that is female employees do not face difficulty in terms of work-family balance. This result is consistent with the findings of Brummelhuis et al. (2008), Frone, Russell and Cooper (1992), and Grzywacz and Marks (2000) who found regardless of gender-role norms, female face the similar level difficulty in balancing work and family. This finding can be well explained by the studies of Cinamon and Rich's (2002) and Daalen, et.al., (2006). These authors ascertained that nowadays, the number of dual-earner families is growing and more modern gender-role norms prevail, with both men and women finding it important to participate in family life and work.

Finally, the study results explore no significant difference among the perception of employees with children and employees without children regarding work-family balance (not supporting H5a). This finding is a bit inconsistent with the findings of the previous researches (Brummelhuis et al. 2008, Tausig and Fenwick 2001), which explored that presence of children can negatively influence the work-family balance of the employees, as it can increase work-family conflict substantially. It may happen that the employees without children possess other family roles, rather than being parents, i.e. role of son/daughter, brother/sister, etc. That's why all the employees are assuming similar amount of family responsibilities, regardless of their parental-role norms.

CONCLUSION

A proper work-family balance can eventually contribute for the job satisfaction. The organization can also be benefited from it. Therefore, the policy makers will have to be concerned regarding this issue. Particularly, social support from supervisors and co-workers can be improved to balance the work and family life of the employees of the bank.

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A STUDY ON TOTAL QUALITY MANAGEMENT & DEVELOPING A COMPREHENSIVE MODEL FOR QUALITY IN HIGHER EDUCATION

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ABSTRACT

The paper talks about the higher education and attempts to theoretically conceptualize TQM in higher education and the need to enhance the quality of higher education. Total Quality Management in higher education means improving the quality of courses, input instructional process, resource management processes and structures including with student support service output, linkages with world of work and other organizations. Globalization of higher educational services has become an area to be focused for many countries. Higher education is playing a key role in every country and this requires a paradigm shift in terms of governance and service delivery to enhance the socio economic conditions. Higher education institutions should be working more towards innovation which leads to quality institutions of knowledge production and propagation. Realizing the importance many innovative tests are being done for overall improvement and performance of educational sector. Application of TQM concepts is one of such procedures which will help in transforming the higher education system. Further the paper talks about the attempts to apply the Quality Management models from industry into higher education have not been successful. There is a rationale for separately addressing the service and education functions with appropriate sets of criteria. The effectiveness of any composite model in addressing the multifarious elements of higher education is dependent on the organizational culture. Such a Comprehensive Model for Quality in Higher Education can serve as the ideal to address the service, education and implementation aspects synergistically.

KEYWORDS

Total Quality Management, Quality in higher education, innovative models & learning communities.

INTRODUCTION

TQM is applied to business and industry; but it has been recently introduced and experimented in higher education. Many universities and colleges apply Total Quality Management as a tool to enhance the quality of higher education. The concept of quality is accepted by everyone and TQM literature in higher education is available in plenty. The student is considered as a customer since quality mean "conformance to requirements" of the customer. The importance of education for the development of excellence, expertise and knowledge leading to overall development in economy cannot be undermined. Internationalization of higher education has become a fact, just like Globalization. Internationalization should not be seen as an end in itself, but as a means of quality enhancement. Quality is the ability of the institution to fulfill its task and to achieve its goals by satisfying the customers, who are quality conscious. This has necessitated a sound strategy for the development of higher education in almost all countries of the world. Establishing leadership in the world is possible only when universities/organizations have a developed system of higher education in which efficiency remains the sole criterion to evaluate performance. This is possible only when the principles of quality management are inculcated in the system of higher education.

Total Quality Management in higher education means improving the quality of courses, input, instructional & resource management processes, including with student support service output and linkages with other organizations (Tulsi, 2001). Since it is comprehensive approach the support and cooperation of faculty and staff members are needed for quality improvement. Total quality is total in three senses —

1. Customer focus
2. Involvement of staff members
3. Continuous Quality Improvement (CQI).

RESEARCH PROBLEM

Research in TQM has been recognized as the collection of rules and principles which show the way for the increasing demand for a clear vision on how the process is to be executed in Higher education institutions. The paper is a theoretical attempt to explain the application of TQM in tertiary education. It deals with issues pertaining quality in higher education and moves on to identify variables influencing quality of higher education with a model for application of TQM in higher education.

Since educational institutions is by definition charitable, it is the duty of Governments or other funding agencies to see that it is heavily subsidized with regard to cost and it is equally strongly the duty of the stake-holders to see that the quality is ensured, who ever may be the cost bearing group. Therein lays the positive aspect of certification and accreditation. The strong linkage between the economy and education was never clear it is the availability of employment in the market that makes the learners choose their areas of study. The stake-holders include both internal customers and external customers. Internal Customers are Students, Faculty, Administrators, Administrative staff and Board of Directors. External customers are Community, Employers, Universities, Accrediting agencies, Alumni and Donor.

OBJECTIVES OF THE STUDY

1. Identifying customer needs with specific quality standards by bench marking and identifying gaps in the existing system to develop nations quality and social relevance of higher education.
2. Planning for improvement and implementation of plans followed with monitoring and evaluation.
3. Total Quality Management (TQM) should be compulsory common factor that will shape the strategies of higher educational institutions.
4. Study on different strategies for TQM in higher education and development of higher education is correlated with the economic development.

QUALITY

The word quality is derived from Latin word qualis, which means "what kind of". Deming defines quality as "a predictable degree of uniformity and dependability at low cost and suited to market". According to Juran "Quality is fitness for use or purpose". Crosby considers it as "conformance to standards". In general quality is which satisfies customer needs and continuously keeps on performing its functions as desired by customers with specified standards. The formation of Quality Circles is a prime step in TQM. The heart of quality management is improvement in teaching-learning process including with improvement in all service areas viz. Library, Academic, Administrative and Finance.

DIMENSIONS OF QUALITY IN EDUCATION

Transformative: Education is continues process of transformation that includes empowerment and improvement of the customer.
Reliability: Educational processes involve specifications through zero defect approach and a quality culture. But the limitations are in achieving reliable standards and conformity to standards.
Value for money: this can be achieved through efficiency and effectiveness
Fitness to purpose: fitting the customer specifications, minimum-based fitness for purpose and customer satisfaction.
Traditionally, the higher educational services include the three fundamental functions like Teaching, Research and Extension.

- Teaching serves to transmit knowledge and skills from the teacher to students.
- Research is to explore new knowledge
- Extension focuses on developing the application of the developed knowledge for addressing the common problems of the society.

TOTAL QUALITY MANAGEMENT (TQM)

Feigenbaum, devised the term in 1961 and named as total quality control (TQC). TQM can be defined as a general management philosophy and a set of tools which allow an institution to pursue a definition of quality and a means for attaining quality, with quality being a continuous improvement ascertained by customers' contentment with the services they have received (Michael *et al.*, 1997). TQM implies the application of quality principles right from identification of customer needs to post purchase services. It refers to the application of quality principles to overall process and management functions in order to ensure total customer satisfaction.
Deming in Japan, Malcolm Balridge in USA are reflection of growing concern in this area. TQM is the process of changing the fundamental culture of an organization and redirecting it towards superior product or service quality (Gaither, 1996). According to Witcher (1990) TQM is composed of

- Total: meaning that every person is involved including customer and suppliers,
- Quality: implying that customer requirements are met exactly, and
- Management: indicating that senior executives are committed.

Most of work of quality and TQM can be traced to the work of gurus W.Edwards Deming and Joseph Juran's teachings and statistics in Japan during the 1950's and the revolution that followed in the USA in the 1980s to meet or preferably exceed customer expectations.
TQM models, based on the teachings of quality gurus, generally involve a number of principles such as teamwork, leadership, customer focus, employee involvement, continuous improvement, training etc. Common theme in quality management includes consistency, perfection, waste elimination, delivery speed and customer service.

THE FUNCTIONS OF THE HIGHER EDUCATION

1. To build an organization that provides products or services that are considered as quality by those who use them and meets their expectations.
2. To bring the universities closer to the community through extension of knowledge and it's applications for problem solving.
3. To encourage teachers and students and through them in the society generally attitudes and values needed for developing the individual and society.
4. To encourage right way of leadership skills and helping the individuals to develop their potential in the work place.
5. To seek and develop new knowledge by engaging vigorously in the pursuit of truth and interpreting old knowledge, beliefs in the light of new needs and discoveries.
6. To provide society with competent trained professionals inclined with a sense of social purpose.
7. To strive to promote equality and social justice to reduce social and cultural differences through diffusion of education.

LITERATURE REVIEW

Lawrence and Mc.Collough (2001) propose a system of guarantees designed to accommodate multiple stakeholders and the various and changing roles of students in the educational process. Their system of guarantees focuses on three customer groups students, instructors of advanced courses that build on prerequisite courses and organizations that employ graduates of the college. According to (Harris 1994) there are three generic approaches to TQM in higher education, firstly there is a customer focus where the idea of service to students is fostered through staff training and development, which promotes student's choice and autonomy, second approach has a staff focus and is concerned to value and enhance the contribution of all members of staff to the effectiveness of an institution's operation, to the setting of policies and priorities. This entails a flatter management structure and the acceptance of responsibility for action by defined working groups. Finally service agreements posture and seeks to ensure conformity to specification at certain key measurable points of the educational processes.
Gregory (1996) in his model of distributed leadership for managing change in higher educational institutions suggests four dimensions of institutional leadership, symbolic, political, managerial and academic. Leader embodies the whole institution by winning commitment of others to organizational goals, obtaining resources and presenting corporate image to the external world. Leaders managerial skills pertains to controlling, representing, staffing, structuring, setting goals and communicating apart from handling budgets, costs, information flow, employee relations, external funding and relations with validating and awarding bodies.
Michael *et al.* (1997) recommended that top leadership is the key to any TQM programme and driving force behind success and failure. Leadership must make the programme attractive and necessary to employees having good communication, proper training and using benchmarking and research on TQM philosophies and programmes can enhance the success rate. Roffe (1998) considers that due to open competition, students are becoming more customers as well as consumers and expected to pay a growing share of the costs of education. This leads to competitive forces that generate different programmers for different student groups. The conceptual problems include whether TQM in higher education should be people or problem oriented, difficulty in introducing the application and acceptance of TQM in higher education institutions, which have not embraced tenets of TQM, team Vs individual orientation towards TQM, maintaining the rate of innovation amongst others.
Osseo-Asare and Longbottom (2002) in their model for TQM implementation in higher educational institutions, proposes enabler criteria which affect performance and help organizations achieve excellence. These "enalber" criteria are leadership, policy and strategy, people management, resources and partnerships and processes. They also suggest "result" criteria including customer satisfaction and impact on society. Sangeeta *et al.* (2004) considers education system as a transformation process comprising of inputs of students, teachers, administrative staff, physical facilities and process. The processes include teaching, learning, and administration. Output includes examination results, employment, earnings and satisfaction.
Today, the internationalisation of higher education is viewed as an increasingly important factor, not only in the work of universities and other higher education providers but also as a direct result of increasing competition, globalisation and decreasing public funds for higher education (vander Wende, 1999).

MODELS EMPHASIZING QUALITY MANAGEMENT IN TEACHING AND LEARNING

At a theoretical level, from time to time, there have been a number of attempts at a re-examination of the fundamental educational processes and a number of new models have been proposed for educational quality management in universities. Some of the well-articulated models proposed in the recent literature are as per following:

Transformative Model: Harvey and Knight (1996, ch. 1) present transformation model as the most appropriate learning-oriented model to quality here emphasis is on 'enhancing participants', 'adding value' to their capability and ultimately 'empowering'. There is a clear focus on student experience, this type of learning requires a *transparent* process, which is *integrated,* contributing to a rich and relevant Total Student Experience. *Transparency* means openness about the *aims*, *processes* and method of *attainment* of learning by the student. *Integration* means that such experiences are linked together into a cohesive whole. Learning is based on a *dialogue* between participant and providers. *Dialogue* involves the discussions between learners and teachers about the nature, scope and style of their learning. *Dialogue* also requires a dynamic exchange among the teachers about the teaching and learning process. Overall, the authors conclude that transformative approach is really about 'a *responsive* process that is explicit, integrated and based on a dialogue' (pp 40-41).

An Engagement Model of Program Quality: Haworth and Conrad (1997) developed an 'Engagement Theory' of program quality 'organised around the central idea of student, academics and administrative in teaching and learning (pp xii). Based upon an extensive interview of persons involved in Higher Education, the authors define 'high quality programs as those which contribute to the learning experiences for students that have positive effects on their growth and development' (pp xii). The theory maintains that in high quality programs the principal stakeholders academics, students and administrators invest in five separate groups of program attributes, each of which contributes to enriching the learning experiences for students.

a. ***Assorted and Engaged Participants:*** Academics, Students and Leaders.
b. ***Participatory groups:*** Shared program direction, Community of learners, and Risk taking environments.
c. ***Interactive Teaching and learning:*** Critical dialogue, Integrative Learning, Mentoring, Cooperative Peer learning, and Out of Class activities.
d. ***Connected Program Requirements:*** Planned Breadth and Depth of Coursework, Professional Residency, and Tangible Product.
e. ***Adequate Resources:*** Support for Students, Faculty and Basic Infrastructure.

In broad terms, the engagement theory advances a new perspective on program quality management that emphasizes student learning as the primary purpose of higher education, highlights the pivotal role that people primarily the academics, administrators and students play, and provides a template for assessing quality.

University of Learning Model: Bowden and Marton (1998) examine the organisational characteristics of Higher Education from educational perspective in all commonly perceived functions of a university: teaching, research or community involvement. Hence they argue that quality in a university context has a lot to do with the quality of learning and the quality of learning has a lot to with qualities of different ways of seeing (pp 219), when the learner widens the range possibilities of seeing the same thing. The learners world grows richer and has more options for actions they begin to experience simultaneously the range of variation of the aspects. They begin to discern the aspects by differentiating among them to focus on one most relevant to the situation. The authors examine the organisational characteristics conducive to quality of its processes and derive the attributes of a 'university of learning'. They commit themselves to a deep exploration of the subject matter from the learners' perspective to develop alternative patterns of understanding. There is a synergistic involvement in developing, along with colleagues, a comprehensive view of student capabilities intended to be developed by the program experience. They explore the potential in the students for 'discerning relevant aspects of variations' thus, large interdependent groups of academics and administrators working in concert create the foundation of a 'University of Learning'.

A Model for a Responsive University: Tierney (1998) collated the views of a number of leading authors on Restructuring for High Performance, which together formed a model for excellence a Responsive University. The model is based on the premise that public will judge the university in terms of the quality of their relationships and the quality of the outcomes. Therefore to survive and thrive universities have to be responsive and be service oriented (p163). The emphasis is on development of new internal relationships through communication and partnerships as well as 'new external relationships including social partnerships with communities'. The academic staff should 'regularly review and take into account shifts in student demand, resource allocations, departmental goals and the evolving mission of the institution' (p165). The staff must develop a commitment to annual performance contracts determining the extent to which and the ways in which the institution will be responsive one. Partnerships with government will be necessary to transform institutional performance so that it is better aligned with public purposes (p170).

Developing a generic model for Quality Management in Teaching and Learning (QMTL) While each model cited has its own unique perspective on educational quality, it is necessary to examine more closely to see if they can be described by a generic model for quality management. At the outset, two focal points - issues that have received a common emphasis - seem to emerge from the models: **student learning** and a dynamic **collaboration** around it.

All the models have a common thrust on student **learning experience**, when one makes judgements about quality.

- The 'Transformative Model' of Harvey and Knight (1996) requires quality policies to result in 'a 'clear focus' on 'student experience'.
- The 'Engagement Model' of Haworth and Conrad (1997) maintains that the clusters of program attributes should contribute to enriching the learning experiences for students.
- In 'University of Learning' model, Bowden and Marton (1998) argue that quality in university context relates strongly to quality of learning.
- Tierney (1998) sees the responsiveness of a university to be coming from meeting the learning needs of students.

All the above models also emphasise **collaboration** at the education delivery level.

- The 'Transformative Model', requires the learning experience to be based on a *dialogue* between the learners and teachers about the nature, scope and style of their learning, and also among the teachers about the teaching and learning process.
- The 'Engagement Model' anticipates teaching and learning to be based on critical dialogue, mentoring and cooperative peer learning.
- The **'**University of Learning' model highlights a synergistic involvement of academics in a course/ research team, developing a holistic view of student competencies and a collective consciousness of commonalities and complementarities.
- The 'Responsive University' model emphasizes communication, which requires new relationships and partnerships both internally and externally.

Therefore, it would be possible to develop a generic quality management model addressing a university's educational process. Some broad features are indicated below:

- **Basis for Quality Management:** All the models clearly subscribe to the 'Transformative'approach to quality with an emphasis on 'enhancing participants'. Harvey and Knight (1996; pp 2) identify this by a range of interactions at the teaching interface. Haworth and Conrad (1997) seem to present the notion of enhancement as 'growth and development' of students identified by a range of characteristics at the teaching program design and delivery levels. Whereas Bowden and Marton (1998) seem to give a subtle academic interpretation of enhancement as ability in learners to 'discern relevant aspects of variation'. Identifying this is to be the key focus of the course teams. In the descriptions of 'Responsive University' enhancement seems to be subsumed within the notions 'quality of outcomes' when they are 'student centred' (Tierney,1998; pp 163). From a quality assurance point of view, this should provide a rich range of elements for identifying as evidence for performance.
- **Implementing the model:** Central to an effective 'Transformation Model' as described by Harvey and Knight (1996, pp118) is 'a quality system that drives improvement from the staff-student interface' governed by 'an academic professionalism that embraces openness, dialogue and transparency'. The senior management's role is to 'encourage and ensure' it 'whilst developing a sensitive but effective external monitoring process'. The Engagement Theory of Haworth and Conrad (1997, ch. 3) seems to fit well within the broad framework of the 'Transformation Model' as it elaborates and categorises the interactions at this interface among 'students, academics and administrators in enriching the learning experience for the students'. In the 'University of

Learning' (Bowden and Marton, In1998) model, the learning experience, considered as the 'ability to discern the relevant aspects of variation', is brought about by the synergistic involvement of academics in intersecting networks of program and research teams (Bowden et al, 2000). The 'Responsive University Model' (Tierney, 1998,) adds another dimension to this notion of transformation the nature of its social context, at student, community and national levels.

Thus at the implementation level, there is a clear complementarity among the models to develop a rich picture of the nature of the required actions. Overall the features of a **Generic Model** addressing the **Quality Management** in **Teaching** and **Learning (QMTL),** based on preliminary set of models chosen above, can be summarised as a clear focus on '**transformation**' of the learners and synergistic **collaboration** at the learning interface. Thus a clear basis for the specification of the features of the **Generic Model** for **Quality Management** in **Teaching** and **Learning (QMTL)** in higher education seems to be emerging.

CHALLENGES IN TQM IMPLEMENTATION IN HIGHER EDUCATIONAL INSTITUTIONS

According to Srivanci (2004) critical issues in implementing TQM in higher education includes –

- **Leadership** - Unlike CEO's, Directors of Universities do not enjoy ultimate authority hiring and firing personnel and allocating resources. Institutional heads can set goals, organizational values and performance expectations. However since they lack necessary authority, it is difficult for them to deploy these values and goals through the layers of higher education institutions.
- **Customer identification** - In businesses, customer loyalty is very important because repeat buying by loyal customers has direct effect on profitability. However higher education is once in a lifetime activity. If students are considered as customers, this concept makes sense only when they make donations as alumni. However if employers are customers, repeat purchase means recruiting at same institutions every year.

  Cultural and organizational transformation - Many business organizations have adopted TQM and transformed their institution's culture into a total quality culture that involves elements such as teamwork, employee participation, customer and market focus etc. However higher education institutions have deep-rooted traditions dating back to several centuries and are resistance to change. For an instance, universities and colleges are organized on departmental units in adopting TQM culture, organizations move from product focus to market focus. But for faculty, particularly research faculty, primary loyalty lies in the academic field.

SOME OTHER CHALLENGES THAT ARE NOT ENCOUNTERED INCLUDE

1. Unlike business organizations, chancellors and heads of higher educational institution do not enjoy ultimate authority in hiring and firing of personnel and allocating resources.
2. Lack of necessary authority makes it difficult to deploy their values and goals through layers of higher education institutions.
3. Deep rooted traditions dating back to centuries, a rigid departmental model, inter departmental competition for resources, lack of market focus are the cultural and organizational reasons that makes it difficult to tune in with TQM transformation.
4. Ambiguity in customer identification also creates hurdles in TQM implementation.
5. Administrators tend to perceive students as customers of faculty in classrooms; many faculty staff resent this metaphor as being too commercial. Without a well-defined customer and a customer focus, quality efforts may be easily diffused.

FINDINGS & SUGGESTIONS

In the process of implementation of TQM there are many things that can be done to continuously improve the system process and a number of things to be avoided such as –

1. A continuous customer survey as they are the focal point for any service focusing on the main "customer" to be served.
2. Allocation of resources and sufficient time for the development.
3. Simplifying the rules and regulations that may flatten the hierarchy and reduce the cost wherever possible.
4. Do not force the programme on employees, leaders must make the programme attractive and necessary to the employees so that they will be willing to accept and follow it whole heartedly or the programme may fail.
5. Empower the employees and make them participate in the improvement of the system.
6. Differences in business and educational environment might lead to resistance from academic staff in higher education institutions.
7. Many of the institutions are affiliated to international awarding bodies this might lead to cultural differences.
8. Inadequate resources in many of the developing and underdeveloped countries also inhibit the process of implementation of TQM principles.

CONCLUSION

TQM is a general management philosophy and set of tools which allow an institution to pursue a definition of quality and means of attaining quality, with continuous improvement ascertained by customers' contentment with services. TQM can be applied to higher education, but it must be modified to fully recognize some unique aspects of education as a service industry with no visible, tangible product. The development of higher education requires increase funds and even more for its maintenance. Overall, the quality management model implemented on the principles of a 'learning communities' should provide a balanced approach among the ideals of the educational, service and behavioural excellence ethos in Higher Education such a model can be termed a Comprehensive Model.

As universities begin to take the initial steps towards a model for quality, a pool of experience begins to build upon which effort can be focused to critically explore and clarify the details and enhance the model. Thus, a comprehensive model for Quality Management in Higher Education has the potential for building a synergy between educational and organizational theories. Therefore educational organizations are forced to resort to leaner and meaner approach. Benefits of TQM include employee morale, teamwork among departments, association of faculty-staff functions, increased quality from customer viewpoint and continuous development of higher education institution.

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FISCAL POLICY AND ECONOMIC GROWTH IN PAKISTAN

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ABSTRACT

This study investigates the role of fiscal policy in enhancing economic growth of Pakistan by using annual time series data during the period from 1982 to 2010. Ordinary least square procedure has been applied. Fiscal deficit is included as a proxy of fiscal policy. Moreover government expenditure and government revenue has been considered. Revenue account is disaggregated into federal and provincial level whereas expenditure is broken down into current and development expenditures. Empirically it is found that only the federal and provincial non-tax revenues have positive significant impact on economic growth. On the other hand, federal tax revenue has significantly negative impact on economic growth. Conversely, development expenditure play significant role in enhancing economic growth whereas current expenditures are insignificant and have no impact in increasing the growth. It is recommended that the government should focus more on non-tax sources and should increase the percentage of non-tax revenue in total revenue. Further the government should cut their non-development expenditure and must increase the size of budget for development expenditure in order to increase the speed of economic growth.

KEYWORDS
Economic Growth, Fiscal Policy.

INTRODUCTION

The probably answer of the question to an economist that how you can measure the economic performance of any country, the economists probably talked you about the fiscal policy as being an important economic growth predictor. This pure principle that expenditure, revenue and other portions of fiscal policy like fiscal deficit may have an important role in managing growth performance in addition to durable affects has been uttered in the framework of growth model for some decades previously Easterly and Rebelo (1993).

In Pakistan, the *GDP* growth rate was remain 6.5% in 1980s, 4.6%, in 1990s and in 2000s it was increase to 5%. Same as the fiscal deficit in 1980s and 1990s remain 7.1% and 6.9% respectively and in 2000s it was reduced to 4.4% of *GDP*. On the contrary, the averages of tax revenue and non tax revenue for the last decade were 10.46% and 3.79% respectively but it was recorded in 1980s as 13.8% and 3.5% and in 1990s as 13.4% and 3.7% respectively as a percentage of *GDP*. Wheras the average of current expendtiure in 1980s was 17.6%, in 1990s it was 19.4% and in 2000s it was reduced to 15.1%. likewise the average of development expenditure in 1980s,1990s and in 2000s was 7.3%, 4.7%, and 3.65% respectively[1].

In this research study, the impact of fiscal policy in managing and improving economic growth will be examined. The tools of fiscal policy that is government expenditure and government revenue are considered. The expenditure account is further divided into current expenditure and development expenditure. The past studies that were conducted to exmaine the performance of fiscal policy with econmic growth have a weak aspect that is those researches never divided revenue account in such a way just like consider in this study that is revenue account is further disaggregate into federal and provincial level to assess their impact on economic growth.

LITERATURE REVIEW

Researchers and authors develop many theories that highlight the tools of fiscal policy and show relationship between fiscal policy and economic growth.

THEORETICAL BACKGROUND

The level of income (output) and employment in an economy is composed of a number of components, such as, consumption, investment and government expenditure. The level of income in an economy is, therefore, derived from the total of the various purchasing components. In algebraically terms[2]

$$AD= C+ I + G \qquad (2.1.1)$$

Where *AD* represents *GDP*, *C* is expenditure on consumption, *I* mean investment expenses and *G* is the expenditures by government.

According to Keynesian theory of income and employment, when government expenditure increases, the aggregate expenditure also increases so the curve of aggregate demand shift upward (expansion policy) and when government expenditure decreases, the aggregate expenditure decreases, the aggregate demand curve shift downward (contraction policy). To fill the deflationary gap, expansion policy is used and to cover the inflationary gap, contraction policy is adopted to achieve full employment or equilibrium level in an economy.

The federal government spending can be used as a tool of government financial policy through which they can make changes in taxes and government expenditure to pursue the macroeconomic goals of full employment and low inflation. These spending changes can still be considered s autonomous-the result of policy decisions and not the level of real income. These assumptions are incorporated in the government spending function in below equations[3]

$$G= f (Y, Policy) \qquad (2.1.2)$$

Where *G* is government spending, *Y* mean real income, *Policy* represents institutional policy decisions at all levels of government

$$G = G_0 \qquad (2.1.3)$$

Where *G* mean government expenditure and G_0 represents autonomous government expenditure. Both the equations show that government expenditure can only be depended on fiscal policy decisions rather than they cannot be determined by real income level in the economy.

Accoring to Lipsey and Courant (1996) the government has some target level of *GDP*, it can use its taxes and expenditures as instruments to push the economy towards that target. Suppose the economy fall in serious recession, the remedy to get out from recession is that the level of national income be increase by the government; the government can increase its expenditure or lower tax rates or both. If the economy is overheated, the government can utilize its fiscal muscles and increase the tax rates or reduce expenditures or do both things simultaneously in order to depress the level of national income.

To tax the citizens is one of the major functions the management of a country has been taken. the income collected by this exercise is then supposed to be used for many purposes, that may be include the running of administration of government itself, provision of law & order, defence of the country, and for societal improvement and infrastructure. By utilizing this revenue, they can construct road and rail network, educational centre, sanatorium, dams and other services for its people. For all these purposes, government raises revenue from those who make profits, from one source or another, within that country.[4]

[1] See Pakistan Economic Survey 2009-2010 (Economic and Social Indicators)
[2] See Agarwal, H. S (2009) pp. 1101
[3] See Farnham, P. G. (2005) pp. 356-357
[4] See Zaidi, S. A (2005) pp. 196

EMPIRICAL STUDIES

After identify the clear relationship between fiscal policy and economic growth in managing and improving the growth, we go through empirical literatures that investigate associations among them in enhancing economic growth.

Martin and Fardmanesh (1990) examined the performance amongst the key tools of fiscal policy and economic growth (*RGDP*) by means of a reduced-form model and they were taken a 76 sample size of developing and developed countries (cross-sectional data) that start from 1972 to 1981. Spending, deficits, taxes, non tax revenue and share of gross fixed capital formation in *GDP* are considered. Multiple regression analysis was used. The empirically found that taxes give the impression of negatively linked with growth; government spending and growth go in the same direction further they found that there is a strong opposite contact found between fiscal deficit and growth. As taxes look harmfully linked with the growth of gross domestic product, nevertheless, they are positively linked with rate of economic growth when their benefit is observed in reducing deficits. The other side of the findings is that the link between gross domestic product growth and government spending is cause to be harmfully opposite if they are observed with deficits. *GDP* growth is associated differently on tax share, government spending in GDP and budget deficit because this is decided by their *PCI* (low, middle and high income countries). It is recommended that a general policy should not be formulated for all countries because growth depends on country precise aspects.

Easterly and Rebelo (1993) were investigated the regularities of fiscal policy, the development level, and growth rate empirically. They work on yearly fiscal data of 100 countries starting from 1970 to 1988 by adopting the cross-section regressions made accepted by the work of Barro (1991) and annual historical data of twenty-eight countries starting from 1870 till 1988. Government revenue, grants, government expenditure, public investment, per capita income, per capita GDP growth rate, ratio of private investment to GDP, central government surplus, consolidated public surplus, primary enrollment, secondary enrollment, assassinations per million, revolutions and coups, war casualties per capita, marginal income tax rate, individual income taxes, domestic taxes, and international trade taxes are considered. Correlation and multiple regression techniques were used. They discover four things; First is that the level of development and fiscal arrangements is strongly associated with each other: low income countries and developed countries purely depend on taxes impose on international trade and taxes impose on income respectively. Secondly, the level of economy measured by its people can be affected the fiscal policy. Thirdly, communication and transport's investment is significantly connected with economic growth and lastly, empirically it is difficult to separate out the connection of taxation.

Devarajan, Swaroop, and Zou (1996) were worked out to investigate the composition of public expenditure and economic growth with the help of twenty-year time series data of forty-three developing from 1970-1990. Five-year forward moving average of per capita real *GDP* was included as dependent variables whereas share of total government expenditure (current, development, defense, health, education, transportation an communication) in *GDP*, premium in the black market for foreign exchange, external shocks and public expenditure vector are considered as independent variables. Multiple regression technique was used. They empirically found that the non-development spending and economic growth has statistically positive and considerable relationship. Growth in per capita and capital component of public spending was oppositely related with each other. It is concluded that the usage of productive spending becomes unproductive if they are used in excess. It means that at the cost of non-development spending, the government of developing countries misallocates the public expenditures on the side of capital expenses.

Iqbal and Zahid, (1998) empirically work on the macroeconomic determinants of economic growth in the context of Pakistan by using the data of period 1959-60 to 1996-97. PCI growth, GDP growth, primary school enrolment, secondary school enrolment, other institutions enrolment, physical capital stock, budget deficit, export, import, and foreign debt are considered. Multiple regression analysis was adopted. They find that primary school enrolment increases growth. Likewise, mounting the stockpile of physical capital will positively push growth. Both the output variables of growth (*PCI* growth and *RGDP* growth) are harmfully associated with fiscal deficit. Foreign debt reduces growth. *PCI* is negatively correlated with growth. It is recommended that that primary education is a vital requirement for boosting growth so it should be provided. The experimental outcome in addition suggests that if there is need to encourage growth, the economy of Pakistan should be open. To funding the growth, Pakistani resources are most excellent option rather to give loan from foreign side and to achieve stable growth the policy makers should formulate growth friendly and lasting fiscal policies.

Kneller, Bleaney, and Gemmell (1999) examined a study to find out the contact between fiscal policy and economic growth with respect to the countries of OECD. They conduct their research on the assumption that the tools of fiscal policy that is tax collection structure and expenditure may have a significance role in the growth of an economy They take annual panel data set from 1970 to 1995 (22 OECD countries) and then convert into 5-year averages to remove business cycle impacts. They categorized the variables of fiscal into distortionary, non-distortionary taxation, and productive, unproductive expenditures, other revenues and other expenditures. Budget surplus, GDP PC growth, initial GDP per capita, investment, labor force growth and lending minus repayments are used. Multiple regression technique was used. They empirically found that, non-distortionary taxes and unproductive expenditures have zero impact on growth; productive expenditures and economic growth are positively associated, and distortionary taxes and economic growth are negatively correlated. It is suggested that with 1% of *GDP*, either increasing spending on productive side or cut in distortionary taxes can play role in enhancing the growth rate by 0.1 to 0.2 percent annually.

Kneebone and McKenzie (1999) find out the choices of Canadian policies in which Canadian government try to reduce the budget deficits at federal and provincial levels from the period of 1962 to 1996. They take 37-year data of 10 provinces and a federal government. Program spending(S), tax revenue(R), provincial unemployment rate (UR), and TS and TR as province-specific, non-linear trends derived by applying the Hodrick-Prescott filter are considered. They adopted a methodology to differentiate the discretionary and non discretionary adjustments in provincial and federal fiscal policy that suggested by Blanchard (1993). It is concluded that discretionary fiscal policies in Canada that increases deficits were expenditure oriented and those policies that decreases the deficits were due to more balance (tax enhancement and spending decreases) efforts. From 1962 to 1992, the fiscal retrenchments was made by a balance between reduce in program expenditures plus increase revenue, but from 1993-96 it is quite interesting that reduction in fiscal deficit was due to choices in discretionary policies by means of cuts in expenditures program. Thus, deduction in deficit (fiscal retrenchments) was due to a balanced policy whereas increment in deficit (fiscal expansions) was differentiated by an unbalanced method that preferably increases the expenditure. It is recommended that to reduce deficits, cuts in expenditure is good rather than to increase the revenue.

Lin and Liu (2000) investigated on whether the fiscal decentralization that takes place in mid-1980 has had any contribution to the growth process of the Chinese economy. Multiple regression technique was adopted by taking 534 sample size data from 28 of the 30 provinces from the time period of 1970 to 1993. Per capita *GDP* growth rate, rural population, total population, relative prices of farm products to nonfarm products, share of Non-SOEs' output in the total industrial output, growth rate of per capita fixed asset investment, the average retention rate of locally collected budgetary revenue, household responsibility system, fiscal capacity and fiscal decentralization was measured as the marginal retention rate of locally collected budgetary revenue are considered as variables. They empirically found that fiscal decentralization was increased the Chinese economy. Furthermore they discover that rural change, capital amassing, and non state sector enlargement were the answer in driving forces of the economic growth in China over the past 20 years. They also conclude two things. First is that institutional planning matters. More to the point fiscal decentralization, additional reforms (the family dependability system in the rural segment plus the "privatization" of the industrialized division by means of mounting the private enterprises) have been also contributing economic growth in China. Second was, as to the data situate, fiscal decentralization has move up the expansion speed in China mostly by humanizing the effectiveness of resource allotment somewhat by stir up more investment.

Dong, Taylor, and Yücel (2003) go through an empirical research to investigate the link between U.S economy growth and fiscal policy by taking monthly time series data from 1983 to 2002 of fiscal indicators into consideration. The objective is to assess unanticipated configuration shock of fiscal tools to check the link amongst spending, taxes and fiscal deficits by holding other things constant. Nonfarm employment, *GDP* deflator, federal fund rate, federal expenditure, receipts (taxes) and deficits are considered. They assess shocks to more than one variable simultaneously by adopting methodology of value at risk (VAR). They argued that if the volume of federal government increases, it will diminish the growth of economy. About United States economy three wide findings were concluded; first of all, consistent cuts in the rate of job results when government increases their expenditures or tax revenue. Next, an unreliable predictor of economy is fiscal deficits. Lastly, they conclude that the consistent predictor in fiscal policy is tax revenue.

Amanja and Morrissey (2005) were conducted a research study to assess the performance of fiscal policy in Kenya by taking time series annually data from 1964 to 2002. They categorized the fiscal data according to their attitude that are productive government spending, unproductive government spending, income tax (distortionary revenue), indirect tax (non distortionary revenue),non-tax revenue, budget deficit, real per capita income, primary and secondary enrolment (human capital), government investment, private investment, grants, real *GDP*, and nominal *GDP* are considered. Autoaggressive distributed lag (ADL), cointegration, and causality analysis techniques were used. They empirically concluded that fiscal policy matters for economic growth. Unproductive spending and non-distortionary tax revenue have no impact to growth as forecast by economic theory. Productive expenditures have negative impact on economic growth. No distortionary influence of distortional tax was found on growth. Private investment and human capital have good impact in favor of *PCI*. Conversely, in the long run economic growth and government investment go in the same direction and are positively correlated. Real *PCI* of Kenya are shaped by productive consumption spending and investment by government. Growth move strongly negatively by productive consumption expenses while enhancement in the investment by government bring economic growth and private investment positively up. It is recommended that the government of Kenya should reduce unproductive spending and increase public investment.

Gupta, Clements, Baldacci, and Mulas-Granados (2005) investigate that during 1990s, the countries that have low income, how the fiscal consolidation & spending composition associate with economic growth by analyzing 39 countries data. Per capita *RGDP* growth, budgetary balance, current spending, domestic financing, external financing, initial level of primary and secondary enrolment rates , labor force, initial level of *GDP* per capita, private investment ratio, terms of trade, public sector wages and salaries, expenditures on other goods and services, transfers and subsidies, interest payments, capital spending, tax revenue, grants and nontax revenue are used. Multiple regression and correlation techniques are used. They empirically conclude that, in industrial countries, reduction in fiscal deficit increases growth in both periods. Deficits financing from domestic sources enhance growth rates. In the short as well as in long run, high budgetary balances and economic growth are usually strongly positively related. What approach is adopted for public spending is also matters for economic growth. The countries in which spending is consider on salaries shows lower growth, at the same time as those countries that assign more part of their spending on capital and non salaries goods and services benefit from more rapidly output extension.

Castro and hernandez de Cos (2008) was conduct a research study in the case of Spain regarding the economic results of fiscal policy on economic issues by taking quarterly records on public spending, taxes (net), *RGDP*, deflator of gross domestic product, primary budget balance, public revenues net of transfers, public investment, sum of public consumption and real rate of interest charged on 3-year government bonds comprising from 1980 to 2004. They estimated the shocks of fiscal exogenous policy on major macroeconomic variables with the help of value at risk (VAR) methodology. They empirically concluded that output and expansionary shocks of spending are go together in the same direction in the short run at the cost of government deficits and inflation that is higher and lower output in the intermediate and lengthy run. Increment in the economic activity occurred if tax size increases in the intermediate run whereas non-permanent expansion in public budget balance required. Spot the conclusion in Spain from the 1990s by implementations of this analysis of fiscal policy is that in growth of productivity, the techniques of consolidation not appear that they have any costs involved but it positively contribute in *GDP* growth in some periods.

MODELING FRAMEWORK

After reviewing the past literature on fiscal policy and economic growth, the following models are developed to investigate the role of fiscal policy in enhancing the growth:

$$LGDP = \alpha_0 + \alpha_1 FD + \mu_t \quad (3.1)$$

$$LGDP = \beta_0 + \beta_1 FTXR + \beta_2 FNTXR + \beta_3 PTXR + \beta_4 PNTXR + \varepsilon_t \quad (3.2)$$

$$LGDP = \gamma_0 + \gamma_1 CE + \gamma_2 DE + \kappa_t \quad (3.3)$$

Expenditures, revenues and fiscal deficit are included in the regression model as independent variables whereas log of gross domestic product is included as dependent variable, *LGDP* represents log of real gross domestic product that represent the value (in monetary) of the entire finished commodities and services produced within a country by taking a base year (Siddiqui, 2001), *CE* represents current expenditures which included all those expenditures that are consumed on services within a year. *DE* represents development expenditures that are spend on durable items that yields services over a long time, for example expenditures on construction of dams, radar stations, and infrastructure (Rosen, 2009). Similarly *FTXR* means federal tax revenue, *FNTXR* represent federal non tax revenue. *PTXR* means provincial tax revenue, *PNTXR* means provincial non tax revenue, and *FD* representing fiscal deficit. Annually time series data from 1982 to 2010 has been gathered from secondary sources as under:

- Statistical Supplement of Economic survey of Pakistan
- Federal Board of Revenue of Pakistan (FBR)

ESTIMATION AND RESULTS

TABLE 1: DETERMINANT OF ECONOMIC GROWTH

Variables	Coefficients	t-stat.	P-Value
Constant	2.13	29.39	0.00
FD	0.33	10.28	0.00
Adj. R^2	0.80	F-Stat.	105.75
D.W	1.62	Prob.	0.00

Source: Author's Estimations

Table 1 shows the output of statistical test. Where *FD* (used as a proxy of fiscal policy[5]) has significant and positive impact on the economic growth. The coefficient value of *FD* shows that if there is an increase in the *FD*, there will be an increase in economic growth by 0.33 times. Cochran Orcutt iterative procedure[6] was adopted to correct the autocorrelation and the *p-value* and *F-stats*. of serial correlation *LM* test are 0.22 and 1.60 respectively.

After evaluating the affect of fiscal deficit on growth, they are further divided and analyzed as government revenue and expenditure in the following section:

TABLE 2 DETERMINANT OF ECONOMIC GROWTH

Variables	Coefficients	t-stat.	P-Value	VIF
Constant	6.78	62.90	0.00	-
FTXR	-1.35	-1.08	0.28	4.11
PTXR	-71.36	-3.65	0.00	2.35
FNTXR	4.57	2.74	0.01	3.41
PNTXR	28.66	4.04	0.00	2.22
Adj. R^2	0.79		F-Stat.	27.22
D.W	1.01		Prob.	0.00

Source: Author's Estimations

[5] See Ali, Irum and Ali (2008)

[6] See Cochrane and Orcutt (1949)

Table 2 shows the output of ordinary least square *(OLS)* procedure. In above analysis, the *PTXR*, *PNTXR* and *FNTXR* are significant whereas the federal tax revenue is insignificant. The *DW* is 1.01 and the *p-value* and *F-stats*. of serial correlation *LM* test are 0.28 and 1.34 respectively.

TABLE 3 DETERMINANT OF ECONOMIC GROWTH

Variables	Coefficients	t-stat.	P-Value	VIF
Constant	0.24	112.52	0.00	-
CE	0.07	0.76	0.45	1.37
DE	0.37	2.81	0.01	1.37
Adj. R^2	0.20		F-Stat.	4.21
D.W	2.49		Prob.	0.03

Source: Author's Estimations

The above table 3 shows determinant of economic growth. The p-value of current expenditures is above 0.05 that is 0.45 that indicates that the current expenditures are insignificant in the regression model and have no contribution in boosting economy. Whereas the p-value of development expenditure is below 0.05 that is 0.01 so the *DE* is significance in the model. If the budget size of *DE will increase*, they will boost the gross domestic product by 0.37. Cochran Orcutt iterative procedure was adopted to correct the autocorrelation and the *p-value* and *F-stats*. of serial correlation *LM* test are 0.23 and 1.54 respectively.

CONCLUSION AND RECOMMENDATIONS

This research study investigates the role of fiscal policy in managing economic growth in the frame of Pakistan by taking the annual time series data from the period from 1982 to 2010. Ordinary least square (OLS) procedure has been applied. Government revenue and expenditure account are considered. Revenue account is disaggregated into federal and provincial level whereas expenditures are broken down into current and development expenditures. The result shows that federal tax revenue and provincial tax revenue are negatively contributed to economic growth. This may be happened for two possible causes; one reason is our tax administration is extremely corrupted and most of the time they are involved with and support the tax liable persons not to pay the tax amount for the sake of themselves and illegally take money and hide the income data of tax payers. Secondly, the agriculture sector is free from tax because the big fishes who are involved with agriculture sector are really clever and fully trained not to pay tax and hide income accounts from the tax department and also benefited from gigantic political control. Even above 80% parliament members are from the feudal class or are the supporter of this group[7]. When we move on expenditure side of fiscal policy, the non-development expenditure is not significant for the reason that the government not appropriately spends money on this side. Only development expenditure found significantly contributed in economic growth. Hence, it is imperative to cautiously spend the resources on current expenditure and spend as much as possible on development projects to increase the speed of economic growth of Pakistan.

At last after analyzing the empirical results, are that there is a strong relation exist between economic growth and fiscal policy therefore the policy makers of Pakistan should formulate their polices after carefully considering fiscal policy variables.

The tax structure of Pakistan is based on 1973 Constitution in which they outline the taxes and duties in federal legislative list[8], the federal and provincial government can collect from assessee only from these ways. After analyzing the results, the tax system of both federal and provincial government must be restructure to make them positively correlated with the economy because they are oppositely contributed in the growth as concluded by our study's results. Both sources of revenue (taxes and non-taxes) must be positively contributed in managing economic growth of Pakistan because Pakistan is not financial so strong that they not only rely on just non-tax source. The fiscal policy makers must have to rethink about the structure of taxes imposed on assessee when they are formulating and implementing fiscal policy. There is an urgent need to make a large part of non tax revenue in collecting total revenue. In contrast, government should focus more on development expenditures like spending on dams, roads, ports etc. The advantages from this type of spending are long term and growth oriented. On the other hand, government should avoid much spending on current expenditures. The current expenditure are of two types; necessary current expenditure like pensions, salaries, law and order, defence etc should not reduce because these are necessary to our economy and sustainability but un-necessary current expenditure like purchasing of bullet-proof vehicles for ministers personal use, un-necessary movements of ministers convoy from one place to another should reduce because those visits require VVIP protocols for security purpose at the expense of taxpayers, the royal expenses of our ministers etc because amount spend on these types of expenditures will have no significant affects on economic growth. Expenditures on non-development projects should be reduced and their amount should be spend on long term projects as they were empirically identified as growth oriented in this study.

AREA FOR FURTHER STUDY

In this paper the governments expenditures are not disaggregate into federal and provincial level so the new study will be conducted and more deeply recommendations and suggestions will be drawn with respect to fiscal policy and economic growth of Pakistan if they are divided as described.

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A NON-PARAMETRIC APPROACH TO FINANCIAL INCLUSION ANALYSIS THROUGH POSTAL NETWORK IN INDIA

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ABSTRACT

The postal department has emerged as a key institution with immense potential towards the ongoing financial inclusion drive in an emerging economy, such as, India. With its vast network of offices and array of financial services it enjoys familiarity of rural residents. In this context, it becomes useful to gauge the spatial and temporal distribution of financial inclusion efforts of the postal department and contemplate steps for further improvements of improving access and usage of finance, especially for the backward and disadvantaged fraction of the society. The results reveal that although there has been improvement, significant progress has not been observed in postal savings penetration and its usage as reflected by accounts per capita and savings per capita trend, respectively, in the study spanning over a period from 1990 to 2008 across eighteen major states of India. Across the states, low preference for postal services seems to be the norm by the more advanced states. The phenomenon could be due to superior avenues, better socio-economic factors and other demographic aspects available to inhabitants of more prosperous regions. The Data Envelopment Analysis reveals a more or less continuous enhancement of the inclusion intensity (measured as the level of financial inclusion of a region compared to the optimal frontier), notably 1999 onwards. The inclusion growth has also registered positive and beneficial changes. Among the constituents of inclusion growth, both intensity change and technology change effects are turning out to be positive for most of the years. The results indicate that both usage of postal services and inherent macro economic conditions of the regions are contributing towards improved inclusion.

KEYWORDS
Financial Inclusion, Panel data, Data Envelopment Analysis.

JEL CLASSIFICATION
G21, C33, C61.

INTRODUCTION

Strong and robust financial institutions are the pillars of economic growth, development and prosperity of modern economies. A financial system, which is inherently strong, functionally diverse and displays efficiency and flexibility, is critical to our national objectives of creating a market-driven, productive and competitive economy. A mature system supports higher levels of investment and promotes equitable growth in the economy with its depth and coverage. A considerable empirical literature using various sophisticated techniques has been employed across nations that seem to validate the point effectively (Levine, 1997; Levine, 2002; Beck et al., 2000; Christopoulos and Tsionas, 2004). The availability of efficient financial intermediaries and their strong network are the major facilitators of developmental and expansionary activities. In turn the economic agents facilitate in growth, development, investment, employment generation, infrastructure improvement, which are now well established in the literature (Feldstein and Horioka, 1980; Brunetti et al., 1998; Ford and Poret, 1991; Hartog and Oosterbeek, 1993).

With the objective of delivering banking services in India at an affordable cost to the vast sections of disadvantaged and low income groups, was constituted the Rangarajan Committee report (2008) recommending unrestrained access to public goods and services as the *sine qua non* of an open and efficient society. It defined Financial Inclusion, '*as the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as the weaker sections and low income groups at an affordable cost'*. As banking services are in the nature of public good, it is essential that availability of banking and payment services to the entire population without discrimination is the prime objective of the public policy.

Out of 600,000 habitation centres in India, only about 30,000 centres are covered by commercial banks. Further, the proportion of people having any kind of life insurance cover is as low as 10 per cent. People having debit cards comprise only 13 per cent and those having credit cards are only at a marginal 2 per cent (Subbarao, 2009). The observations are glaring testimony to the severity of the financial exclusion situation existing in the Indian economy. In this respect the financial inclusion process has been undertaken in a mission mode by the Reserve Bank of India. Among the major measures implemented are: relaxation of branch licensing policy to enable branch opening especially in rural conglomerations, availability of basic 'No-Frills' account for low income group, simplification of general credit card (GCC) schemes to bank customers in rural areas and so on. The schemes are showing results with improvement of participation of rural inhabitants in the formal financial system (Thorat, 2007).

Apart from the banking system, the Department of Post, which functions as an organ of the Government of India, also has a huge potential to cater to the rural population and contribute towards further inclusion. India Post is a reliable establishment having decent reach nationwide with wide array of financial instruments. The present study is an attempt to analyze the spatial and temporal distribution of financial inclusion and contemplate steps for further improvements of improving access of finance. The results indicate low preference for postal services among the more prosperous states. The DEA analysis reveals a more or less continuous enhancement of the inclusion efforts, particularly during the last decade.

The rest of the article is structured as follows. Section 2 provides a backdrop about the structure of India Post and its emerging role as an effective medium of financial inclusion through vital statistics. Discussion about the data and variables utilized is performed in section 3 followed by econometric methodology in section 4. The empirical results are presented in section 5. The synopses of the study along with the broad findings are summarized in section 6.

BRIEF BACKGROUND

The Department of Post functions under the jurisdiction of Central Government commonly known as 'India Post'. The Indian Postal department is one of the largest postal institutions catering especially to the rural and middle class households. With more than 155,000 offices it can boast of a more dense distribution than that of all commercial banks put together. The postal department provides not only postal solutions but also a host of savings and financial services to far-flung and remote sections of the societies. The apex body of the department is the Postal Service Board. The board consists of a chairman and three members. The three members hold the portfolios of Operations and Marketing, Infrastructure and Financial Services, and Personnel.

Postal savings are a vital constituent of the formal financial system especially catering to the middle class and rural population. Although the core activity of postal department is collection and delivery of mails, over the years the department has diversified by initiating services in the field of basic banking, finance, financial remittances, social security schemes such as old age pension scheme, National Rural Employment Guarantee Scheme (NREGS). It has also started schemes pertaining to insurance, mutual funds, bill payment and so on. Postal Life Insurance was started in 1884 as a welfare measure for the employees of Posts and Telegraphs Department is now open for nearly all government employees.

As per the Report of the expert committee on Harnessing the India Post Network for Financial Inclusion (Shah, 2010) the India Post network with over 155,000 branches is twice as large as the outreach of all commercial banks in India put together. Over the years, the Post Office Savings Bank (POSB) has emerged as significant component of India Post operations and its revenues from financial services as a share of its total revenue have steadily increased over time. Nearly 16 crore people use India Post to save Rs 3,23,781 crore as on March 31, 2007. Out of this, deposits in savings bank account alone are Rs 16,789 crore.

Some preliminary evidence regarding accessibility of postal network suggests that India has a reasonable coverage of post offices across its territory (Table 1). Both in terms of spread and individuals covered, it is superior to nations like China and United States. In fact, India Post seems to be the chief medium of formal financial access and usage by the rural India. Nearly 90 per cent of the post offices in India are located in rural areas. Post office branches in India are in the closest proximity (2 km on average) to rural clients compared to branches of commercial banks, regional rural banks and cooperatives (5 km on average) (Priyadarshee, 2010).

DATA AND RELEVANT VARIABLES

The present study utilizes information on state-wise characteristics, which primarily reflect not only the level of financial activity and awareness but also the factors that contribute towards higher financial aspirations and requirements. The analysis spans across eighteen major states of India over a period from 1990 to 2008 (Henceforth, geometric mean has been utilized to arrive at all the average values, unless specified otherwise).

The parameters are essentially categorized separately as a set of output and input variables. The primary data source for the postal information is the Statistical Tables Relating to Banks in India published by Reserve Bank of India. It provides region-wise annual information on number of accounts and balances available in post office savings bank deposit. The state-wise population and per capita income have been collated from Office of the Registrar General, Census Commissioner of India and Handbook of Statistics respectively.

The present study focuses on the postal department treating it as a vital medium of financial inclusion, where individuals can obtain wide array of financial services commencing from opening of a basic savings account to long term savings products. It provides more sophisticated financial services, such as, pension schemes, insurance products, micro credit etc.

In this regard, the motivation of the study is to gauge the spatial and temporal distribution of financial inclusion. The output variables consist of number of savings account and balances kept in such accounts. Among the input variables effort has been made to include economic and demographic indicators that have an influence on the public needs, awareness, interests and demand side of financial services (Dev, 2006; Kamath et al., 2010; Kumar, 2011; Shetty, 2004). The income per capita and population constitute our input variables. With this we move to the next section explaining the quantitative methodology applied in the present context.

ECONOMETRIC METHODOLOGY

The study employs the Data Envelopment Analysis (DEA) approach to examine the inclusion intensity and inclusion growth across the states. The DEA is a non-parametric, non-linear programming method in operations research and economics for the estimation of production frontiers. The estimated frontier represents the best practices boundary corresponding to the optimal utilization of resources. The earliest exposition of the methodology was performed in a seminal article by Farrell (1957) and extended by Charnes, Cooper and Rhodes (1978). The term 'Decision Making Unit' (DMU) was used for the first time in the CCR model proposed by Charnes, Cooper and Rhodes (1978), employing a mathematical programming model to determine the efficient frontier based on the concept of the Pareto optimality when more than one measure is used. If a DMU lies on the frontier, it is referred to as an efficient unit; otherwise it is labeled as inefficient. The data are enveloped in such a way that radial distances to the frontier are minimized. The DEA is carried out by assuming either constant returns to scale (CRS) or variable returns to scale (VRS). The estimation with these two assumptions allows the overall technical efficiency (TE) to be decomposed into two collectively exhaustive components, viz., pure technical efficiency (PTE) and scale efficiency (SE) i.e., TE=PTE*SE. The former relates to the capability of managers to utilize firms' given resources, whereas the latter refers to exploiting scale economies by operating at a point where the production frontier exhibits constant returns to scale. A major advantage of the non-parametric approach is no prior assumptions are required about the functional form of the relationship. Hence, it guards against spurious results obtained due to application of faulty functional form.

The various approaches to efficiency and productivity analysis have been profusely utilized in the production economics (Banker et al., 1984; Coelli et al., 2005; Ray, 2004). As per the production theory parlance efficiency is defined as the gap between the best practices frontier and the actual level of performance of a DMU. Although, efficiency is a useful measure to assess the performance across the state space, a firm may be enjoying the gains due to improvements in technology of operations. Productivity indicates the extent to which the benchmark production frontier shifts of each firm over time with respect to the observed input mix. The same concept has been applied to measure inclusion intensity and growth respectively.

With this background, financial intensity in the present context is defined as the level of financial inclusion of a region compared to the optimal frontier, estimated using the piecewise linear combination of the actual input–output correspondence set that envelops the data of all the states in the sample.

The productivity can be interpreted as behavior of financial inclusion due to combined effect of region specific changes/improvements and changes in comparison to optimal behaviour. Productivity can be broken into technical change and technical efficiency change. Inclusion growth is defined as the growth or deterioration of financial inclusion status of a region. It is a combination of inclusion intensity change effects and technological change factors. The factors responsible for technological change could be due to demographic (literacy, income), infrastructure and other socio economic factors.

The study utilizes the BCC (Banker et al., 1984) methodology, which allows for variables returns to scale. The efficiency for each DMU is obtained as maximum of the ratio of weighted outputs to weighted inputs. The problem is formally formulated as follows,

$$E_k = \sum_m W_m Z_{km}$$

Maximize

$$\sum_m W_m Z_{jm} \leq 1$$

$$W_m \geq 0 \qquad \ldots (1)$$

Z_{jm} denote the m^{th} measure of the j^{th} DMU. W_m is the corresponding weight for the m^{th} measure. The weights are selected, such that, each firm obtains the highest possible score. The restriction imposed on the weights is that the resulting score cannot exceed unity.

EMPIRICAL RESULTS

Before proceeding to the DEA results the distributional aspects of the dataset are presented herewith. Table 2 presents the summary of variables utilized for the analysis for selected time points. The table displays a continuous rise in both population and number of postal savings accounts. The population estimate for 2008 stood at 1066 million, whereas the individuals having postal savings account for the same period marked a figure of 67 million. The savings balance has also swelled in nominal terms over the years. However, on normalizing the savings amount the trend shows a downward movement during the period 1990 to 1995 before improving to Rs 15176 crore in 2008. The average values of the parameters across the states are provided in Table 3. On average the highest population, savings accounts and balance is held by the state of Uttar Pradesh at 158 million, 11 million and Rs 1332 crore respectively. Delhi enjoys the highest per capita income among the group at Rs 37,000 approx. The least population is exhibited by Himachal Pradesh at slightly less than 6 million. Jammu and Kashmir portrays the minimum number of savings accounts and amount both as observed from the summary table.

To understand the performance of postal network in India as a medium of financial intermediary in general and operation of basic savings accounts specifically, Figure 1 displays both, the trend of savings accounts per capita and savings balance per capita depicted during the study period. First, focusing on savings accounts per capita, it is observed that the figure improved slightly to 6.26 per cent in 2008 compared to previous period. It implies that there exist only 6 savings account holders in a group of 100 individuals. The savings account per capita has more or less been a stable series hovering in the range of 4.5 to 8 per cent. On turning our attention to savings balance per capita, it is noticed that the sequence has been more volatile, especially pre 2000. The variable in fact registered a dip in 2008 to Rs 142 per capita compared to 149 in 2006. However, the series continuously improved from a low of around Rs 100 per capita in 2000 till 2006.

A cross regional graphical display of accounts per capita is available in Figure 2 for comparative purpose. The All-India average for the entire horizon stood at 5.9 per cent. The regions exhibiting a better ratio than the All-India average are West Bengal, Orissa, Himachal Pradesh at 13.4, 11.6 and 10.1 per cent respectively. Among the poor performers are the states of Punjab, Delhi, Maharashtra at 5.2, 4.0 and 2.9 respectively. It is surprising to note that more affluent zones have a low penetration of postal savings accounts. This may partly be explained due to low preference for postal services by the more developed states due to more avenues, better socio-economic factors and other demographic aspects enjoyed by their inhabitants.

As discussed in Section 3, DEA has been implemented and inclusion intensity has been estimated for all the states over the study period. The inclusion intensity varies from zero to unity. A score of zero implies perfect exclusion, whereas unity pertains to perfect inclusion. The temporal variation of the inclusion intensity is displayed in Figure 3. It may be observed that the inclusion intensity registered a sharp fall from 0.67 in 1990 to 0.34 in 1991. However, post 1991 it has been generally stable and moving in the band 0.4 to 0.6 till 1999. There after, a jump in inclusion intensity has been observed in 2000, where it has moved to 0.69. Afterwards there has been a continuous and slight improvement of inclusion intensity except to 2008, where it has fell slightly to 0.75.

The average inclusion intensity[9] measured across the states is displayed in Table 4. The All-India average inclusion intensity computed is around 0.61. The regions, such as, Kerala, Rajasthan, Karnataka yielded low inclusion intensity at 0.27, 0.33 and 0.34 respectively compared to All-India average. Whereas, some states like Jammu and Kashmir, Himachal Pradesh and Bihar have recorded a perfect inclusion. The phenomenon has occurred due to DEA methodology, which carries out piecewise linear combination utilizing the available variables. Other zones, like Uttar Pradesh and Orissa have also produced high inclusion intensity figures of 0.97 and 0.98 respectively. The findings again point to the inference of high usage of postal services in emerging regions.

Although, inclusion intensity is a useful measure to assess the performance across geography, it does not enable us to conclude about the temporal behaviour of inclusion process. The DEA methodology permits us to compute productivity gains and its break up due to improvements in inclusion intensity or technological changes. Technological progress in our context may be due to various inherent improvements of demographic (literacy, income), infrastructure and other socio economic factors. A glance at the temporal trend of financial inclusion growth depicts beneficial and positive inclusion growth over the study period (Table 5) except for some negative growth in intermittent years in 1993, 1999 and 2000. The inclusion growth observed for 2008 stood at 8.7 per cent compared to the previous period. Among the constituents of inclusion growth, both intensity change and technology change effects are turning out to be positive for most of the years. The result indicates that both usage of postal department and inherent macro economic conditions of the regions are contributing towards improvement of the overall inclusion drive. The state wise inclusion growth shows an average All India figure of 1.0602 (Table 6). The calculation implies a positive inclusion growth of average 6.02 per cent over the period. Except for Orissa, which depicts a fall of around 4 per cent for financial inclusion, all other states register a positive growth. Maharashtra, Uttar Pradesh and Punjab depict a less than average growth at 1.015, 1.04 and 1.04 respectively. On the other side, Kerala and Tamil Nadu have displayed rich inclusion improvements at 1.11 and 1.12 respectively.

CONCLUSION

The postal department is a vital organization contributing towards the ongoing financial inclusion drive. With its vast network of offices and array of financial services it has a tremendous potential to serve the people. In this regard, the motivation of the study is to gauge the spatial and temporal distribution of financial inclusion and contemplate steps for further improvements of improving access of finance, especially for the rural and disadvantaged fraction of the society.

The exploratory results reveal that although there has been improvement, significant progress has not been observed in postal savings penetration and its usage as reflected by accounts per capita and savings per capita trend over the study period spanning over a period from 1990 to 2008 across eighteen major states of India. Across the states, low preference for postal services seems to be the norm by the more developed states. The phenomenon could be due to more avenues, better socio-economic factors and other demographic aspects enjoyed by the inhabitants of more developed regions. The DEA analysis reveals a more or less continuous enhancement of the inclusion intensity, notably 1999 onwards. The inclusion growth has also registered positive and beneficial changes. Among the constituents of inclusion growth, both intensity change and technology change effects are turning out to be positive for most of the years. The result indicates that both usage of postal department and inherent macro economic conditions of the regions are contributing towards improvement of the overall inclusion drive.

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[9] Henceforth, geometric mean has been utilized to arrive at all the average values, unless specified otherwise.

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DISCLAIMER

The author is Research Officer at the Reserve Bank of India, Mumbai, India. The views expressed in the paper are those of author and not of the organisation to which he belongs.

APPENDIX

Figure 1: Trend of postal savings indicators

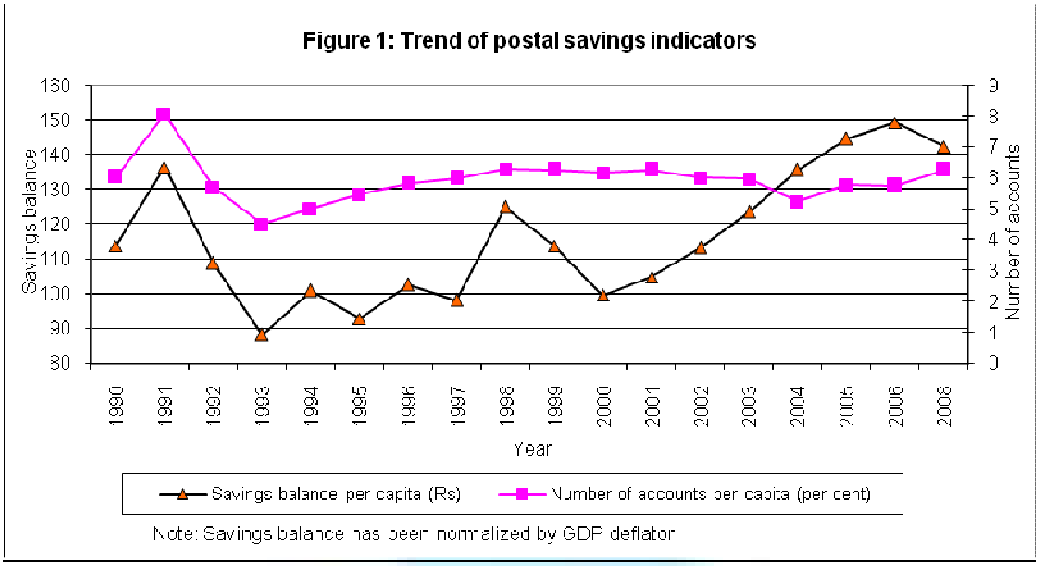

Figure 2: Number of accounts per capita

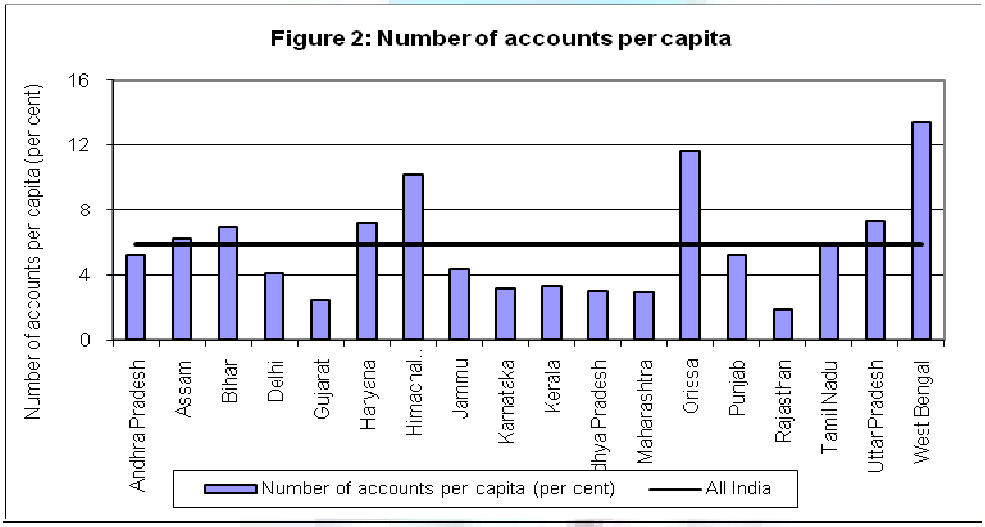

Figure 3: Behaviour of Inclusion Intensity over the period

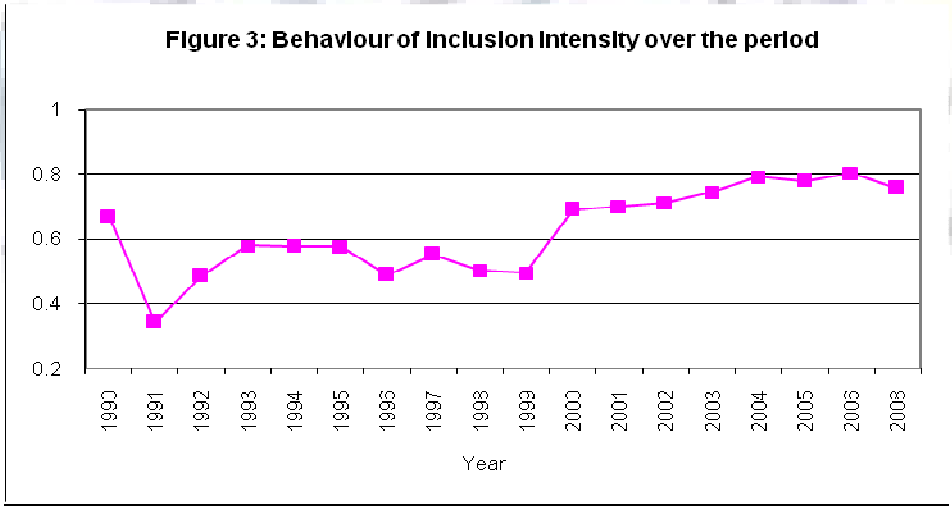

TABLE 1: CROSS COUNTRY POSTAL ACCESSIBILITY

Nation	Postal network density (per sq km)	Average population per post office
China	145.59	19962
India	21.21	7174
Pakistan	64.49	13719
USA	259.25	8029

Source: Priyadarshee (2010); Hassan (2008)

TABLE 2: PARAMETER TOTALS OVER SELECTED TIME POINTS

Year	Population (thousand)	Number of postal savings accounts (thousand)	Savings balance (Rs crore)	Savings balance (Rs crore) *
1990	780312	46980	3168.56	8885.26
1995	862606	47067	4720.20	8002.29
2000	943072	58007	7796.00	9391.68
2005	1019386	58771	14734.27	14734.27
2008	1066195	66759	17700.67	15176.61

* Savings balance normalized by GDP deflator

TABLE 3: SNAPSHOT OF VARIABLES (STATE-WISE AVERAGE)

State	Population (thousand)	Number of postal savings accounts (thousand)	Savings balance (Rs crore) *	Per capita income (Constant)
Andhra Pradesh	74286.49	3914.18	1292.47	15453.03
Assam	25873.88	1602.90	207.10	12698.80
Bihar	78271.38	5433.75	949.98	6097.07
Delhi	12841.24	523.24	372.07	36962.17
Gujarat	48357.42	1198.20	551.03	18434.68
Haryana	19963.38	1437.69	278.78	24061.42
Himachal Pradesh	5864.47	597.23	377.59	19788.06
Jammu	9672.57	424.89	104.06	13542.88
Karnataka	51008.40	1612.47	366.71	15980.40
Kerala	31414.29	1033.01	244.15	19052.50
Madhya Pradesh	58009.64	1764.26	371.29	10821.67
Maharashtra	92683.24	2708.00	866.92	21422.36
Orissa	35668.60	4149.20	493.55	10618.96
Punjab	23341.06	1225.74	571.76	24494.78
Rajasthan	53600.97	1000.12	394.16	12844.81
Tamil Nadu	60926.67	3575.94	869.12	18211.08
Uttar Pradesh	158744.28	11636.82	1332.24	9566.66
West Bengal	77831.17	10454.06	1125.65	14963.74

* Savings balance normalized by GDP deflator

TABLE 4: AVERAGE INCLUSION INTENSITY ACROSS STATES

State	Inclusion intensity
Kerala	0.2763
Rajasthan	0.3322
Karnataka	0.3371
Madhya Pradesh	0.3619
Gujarat	0.4184
Maharashtra	0.5311
Haryana	0.5675
Assam	0.5904
All India	0.6099
Tamil Nadu	0.6231
Andhra Pradesh	0.6281
Delhi	0.6669
Punjab	0.7484
West Bengal	0.8723
Uttar Pradesh	0.9796
Orissa	0.9803
Bihar	1
Himachal Pradesh	1
Jammu	1

TABLE 5: TEMPORAL TREND OF INCLUSION GROWTH AND ITS DECOMPOSITION

Year	Intensity change effects (CRS)	Technology change	Intensity change effects (VRS)	Scale effect	Inclusion growth
1991	0.4648	2.35971	0.50977	0.91151	1.09661
1992	1.54124	0.65502	1.42079	1.0848	1.00954
1993	1.21975	0.72975	1.19297	1.0224	0.89003
1994	1.00774	1.15233	0.99458	1.01328	1.16124
1995	0.9941	1.06616	0.99978	0.99444	1.05995
1996	0.83461	1.32134	0.84748	0.98471	1.10276
1997	1.12108	0.89675	1.12941	0.99265	1.00532
1998	0.79865	1.49155	0.90879	0.87878	1.1914
1999	1.02084	0.94505	0.98867	1.03244	0.96484
2000	1.52769	0.62054	1.39405	1.09583	0.94794
2001	1.00796	1.06934	1.01364	0.99436	1.07805
2002	1.03469	1.06281	1.01586	1.01841	1.09966
2003	1.03307	1.10935	1.0441	0.98943	1.14612
2004	1.09031	0.99369	1.06486	1.02398	1.08343
2005	0.99073	1.11687	0.98428	1.00655	1.10665
2006	1.02784	1.01228	1.02926	0.99851	1.04013
2008	0.89992	1.20854	0.94325	0.95392	1.08764

Table 6: Average Inclusion growth variations across states

Year	Inclusion growth
Orissa	0.9608
Maharashtra	1.0149
Uttar Pradesh	1.0359
Punjab	1.0377
Haryana	1.0386
Jammu	1.0485
West Bengal	1.0501
Assam	1.0516
All India	**1.0602**
Himachal Pradesh	1.0606
Karnataka	1.0677
Andhra Pradesh	1.0696
Gujarat	1.0743
Bihar	1.0790
Madhya Pradesh	1.0844
Delhi	1.0845
Rajasthan	1.0996
Kerala	1.1122
Tamil Nadu	1.1246

SECURITIZATION AND ITS RELATIONSHIP WITH REAL ESTATE GROWTH – AN ANALYSIS

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ABSTRACT

The purpose of this article is to examine the mechanics of securitization process and the concerning issues in a residential mortgage or any other associated real-estate related loan being part of a securitization program. The paper focus upon the relationship between a modern financial process and tool called securitization and the growth of real estate markets. Securitization process helps financial institutions as well banks to cover their liquidity positions by converting their illiquid assets into liquid assets along with providing a safe-guard against bankruptcy of a debtor or a client who has taken mortgage from the bank. The paper tries to bring out the relationship that exist between securitization process as well as Real-estate growth seen in the past along with analyzing the impact of securitization on mortgage market's functioning.

KEYWORDS

Credit Enhancement, Financial Services, Mortgage Securitization, Residential Mortgage-Backed Securities (RMBS), Special Purpose Vehicle (SPV).

JEL CLASSIFICATION CODE

G1; G2; Y2; Z00

INTRODUCTION

Real Estate markets world over are growing at a phenomenal rate. Starting from the year 2004 the world market has seen the growth of 248% cumulatively. The breaks to this multifold growth was applied in March 2008, though some pre-cursors were visible in 2007, when in USA the mortgage market became stagnant and the impact was later sensed through the collapse of world's real estate investment. The impact was so sudden and deep that almost all international and domestic markets saw nosedive in prices of realty. Studying the same therefore is bound to be the interest of academic community. Use of a modern day financial tools called securitization would have saved some financial institutions from burning their fingers. On the other hand the recent dramatic increase in mortgage default rates, particularly for subprime loans, has led many to blame securitization.

Simply put, the argument is that since the majority of subprime loans were securitized, issuers had less incentive to screen those loans, and this encouraged a decline in lending standards. This argument has featured significantly in the press especially in business dailies along with national newspapers and has also been echoed by several policymakers along with executive bodies' world over.

Securitization helped in the boom of real estate markets world over as major banks and financial institutions thought that by securitizing their assets especially mortgages, they will be able to survive sub-prime risks but there is no denying the fact that securitization as well has helped lot of financial institutions in enhancing their non fee-based revenue along with providing them with an opportunity to expand their investment portfolio which otherwise due to illiquidity would not have been possible.

For the equity investors in these real estate companies the time-frame of 2008-2010 was not good as the current share price lies 25% and more, in some instances even almost 50% under the Net Asset Value. Some stocks have no takers and others have not seen any major movement or activity on trading terminals. This low valuation reflects not only the hesitance of institutional investors along with skeptical retail investor to place their stake in real estate companies; but also highly capitalized real estate companies experience regularly undervaluation, as the property prices world over are falling or becoming stagnant after falling great height.

Both set of theorists, for or against securitization have their logics and research outcomes to support the claims but none can deny the importance of this modern financial tool called securitization, as it is with any other diagnostic or analytic financial tool the efficiency or accuracy depends upon the user and the objectives for which it is being used and how cautiously the tools has been used by the humans and the attitude of the user. All of the discussed variables or elements decide the outcome or accuracy of the tool, a tool alone is incapacitated to attain any results, same applies to securitization.

Looking at the major discussion going world over about securitization and its implications along with the role it played in recent global economic melt down it became imperative or mandatory to introduce the term securitization as a tool of finance to everyone especially to the body of intellectuals, investors, mortgage seekers and academia.

WHAT IS SECURITIZATION?

Securitization as we see it today began in the 1970s with Originators pooling home mortgages ("*mortgage pools*") and selling those mortgage pools to certain government sponsored entities. The government-sponsored entities, in turn, guaranteed the cash flow from the mortgage pools and sold securities (called "*mortgage-backed securities*" or "*MBS*") backed by the guaranteed cash flow from the mortgage pools. The role of government sponsored entities of yesteryears is now played by independent Special Purpose Vehicles (SPVs) created by originators.

Securitization is a process whereby a company bundles its assets into securities and sells them to investors. The concept is popular among housing finance companies (HFCs), Apex Housing Institutions, Banks and other NBFCs dealing with real-estate loans in the West; the home loan-assets are bundled into securities and sold to investors, such securities are called mortgage-backed securities (MBS) because each security is derived from the mortgaged home-loan. MBS helps HFCs and other financial institutions to convert their loan-assets (low on liquidity) into cash for further loan disbursals.

Besides, it is an easy way for the HFCs to reduce their re-investment risk; the risk of earning a lower rate of return on the cash flows from prepayments of home-loans. How do the HFCs reduce this risk? The MBS is structured in such a way that the HFCs simply pass on the cash flows from prepayments to the investors. Holders of MBS, thus, run the re-investment risk. In a typical MBS program, a mortgage lender or originator (financial institution or a bank), which seeks to raise cash, identifies suitable mortgaged loans that can be used as the basis for issuing mortgage-backed bonds to the institutional investor market. These loans represent borrowers' payment obligations, or interest income, to the bank or originator.

UNDERSTANDING MORTGAGE

Very few of us can buy a house with our own cash. We need a bank to help us buy it; and that's done with a mortgage - i.e. a loan from the bank. We put a fraction of the house price down (for the seller) and have the bank pay him the balance. The balance is the principal mortgage loan amount which we pay back typically over 25 or 30 years in monthly payments.

Each monthly mortgage payment includes a portion for interest with the balance of the payment going toward paying off the principal of the loan. The principal payment portion eventually kills off (amortizes) the loan. For a 25-year mortgage, early payments are mostly all for interest payments; ending payments are

mostly all for principal. At about year 18, the interest and principal portions of each payment are equal. So it takes 10 years or more before you're reducing the principal you owe significantly.

To understand the mortgage procedure clearly, we need to understand how assets under mortgage are created or how a mortgage book is being built. This mortgage book will facilitate the process of finding out assets for securitization process.

FIGURE 1: CREATING ASSETS FOR SECURITIZATION PROCESS (CREATING MORTGAGE).

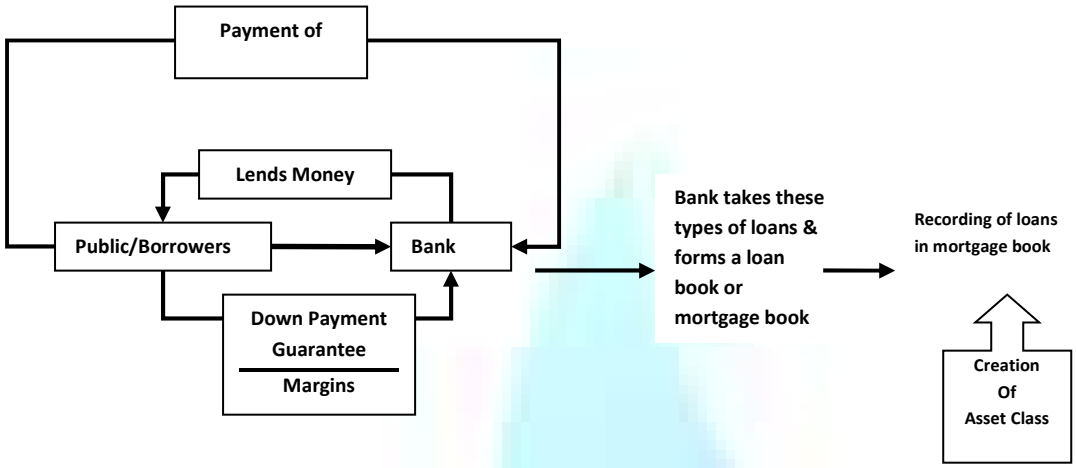


Figure 1 above clearly indicates the process of creating an asset for the securitization process, Public or borrowers who wants to buy a house and for the purpose approaches their local bank for a loan and the local bank lends them money against the security of title of the house, the bank depending upon national legislation, though differing from one country to another, may demand for some down-payment guarantee or may ask the borrowers or the public to bring in some margin money. Only after down payment guarantee or seeing the availability of margin money the bank or the financial institution will initiate the process of loan appraisal.

Once the financial enquiry is over and everything including the credit score and credit worthiness of the borrowing party the loan will be sanctioned and later disbursed, with the help of bank's loan the borrower buys a house but ownership title stays with the bank and a mortgage relationship between a bank and the customer gets started. Against the loan received from the bank to repay the loan a borrower has to pay an installment, usually monthly payment is preferred and the term used for these payments are known as Equated Monthly Installment (EMI). All the loans passed or mortgages made are recorded by a bank in loan book or a mortgage book, this helps in creation of separate but identical asset class.

Now the question arises what is a mortgage? Answer is simple, a 'mortgage' is a loan secured against your home. 'Secured' means that if you do not keep up the payments, the lender can sell your home to get its money back. Similar to the process shown above in figure 1, lot of other customer's must have approached bank for mortgage and some of them were even granted the loan, the process has converted the liquid asset cash of the bank into an illiquid asset of ownership to the title of a property but before passing a loan or before approval for disbursement is given the underwriting process is undertaken which consists of a wide range of appraisals and assessment of several qualitative and quantitative factors so as to make a mortgage secured.

The underwriting of a commercial mortgage loan assesses, among other things, real estate risk, borrower quality, tenant quality, existing lease terms, property condition, and potential for environmental liability in order to determine whether to originate a loan on the subject property, and if so, the appropriate loan amount and terms. The underwriter will analyze whether the proposed loan-to-value is prudent, as well as whether the debt-service coverage ratio is acceptable, given the anticipated cash flows. It is the quality of the initial underwriting that will in large part; drive the rest of the securitization process, for the quality of the underlying loans will dictate the amount of necessary credit enhancement and the ultimate pricing of the Certificates.

Bank for its daily activity along with the necessary requirement of maintaining liquidity (mandatory requirements imposed by regulators) to carry out its daily operations smoothly, needs cash or liquidity, which is shrinking as mortgages are growing so in order to generate liquidity the Bank of X takes and evaluate all the available loans and creates a loan book or a mortgage book which will be then passed on to a special unit created to convert illiquid assets into a more fungible and beneficial asset or asset class called Mortgage Backed Security (MBS) that will help the Bank of X to generate cash by offering newly generated securities for sell to interested investors.

So, what is in it for the investors? Typically, an investment in MBS is guaranteed by a third party. In the US, for instance, MBS is guaranteed by organizations such as Ginni Mae and Freddie Mac. Besides, MBS offers a good yield to compensate for the re-investment risk. The guarantee and the yield make MBS an attractive investment.

HOW IS A MBS STRUCTURED?

The HFCs, typically, bundle loans of like maturities but differing credit-risk for securitization. A company can, for instance, bundle 500 individual loans with an average maturity of 10 years but varying credit risk into 10-year MBS. Such loans are actually transferred to a special purpose vehicle (SPV) created for this purpose. It is the SPV that issues the securities to the investors.

By the mid 1980s, securitization techniques had developed into the isolation of pools of otherwise illiquid, assets, the transfer of these pools to specially formed, limited-purpose entities also called Special Purpose Entity ("*SPEs*") or a Special Purpose Vehicle ("SPV") and the issuance and sale by the SPEs of securities backed by those assets and types of assets involved in securitizations had expanded to include non-mortgage assets such as automobile loans, credit card receivables and various trade receivables.

Similarly, the variety of securities issued and sold had grown and now ranged from certificates of participation to long- and medium-term notes to short-term commercial paper. This was the beginning of asset-backed securities or "ABS."

Today, "asset securitization" typically refers to the securitization of non-mortgage assets, but may include the securitization of home equity loans.

OTHER ASSET CLASSES THAT CAN BE SECURITIZED

At present, almost every asset that has a cash flow connected with it can be securitized. The success of many securitizations of marginal assets is questionable, however, some of the asset types that have been securitized consists of residential and nonresidential mortgage loans, credit card receivables, trade receivables, automobile, boat, motorcycle and other consumer loans, automobile leases, heavy truck plus equipment loans as well as leases, equipment leases, oil and gas receivables, trademark and patent receivables, royalty payments, film and television distribution rights, airline ticket receivables, small business loans, tax liens along with health care receivables.

ADVANTAGES AND DISADVANTAGES OF SECURITIZATION

The reasons for not introducing MBS world over or specifically in low development countries though it is beneficial to the companies and investors are simple. The reasons are two: First, lack of stringent foreclosure laws. At present, if home loan borrowers default on payments, the HFCs cannot sell the property easily and realize the money due. This defeats the very concept of securitization -- of backing the MBS with credible loan-assets. Moreover, second, the conversion of assets into securities attracts high stamp duty, making it difficult for companies to offer attractive yields.

Securitization offers several advantages to Originators, including balance sheet management, lower cost of funds and access to additional funding sources. Flexibility of tax characterization is another benefit of securitization. A securitization can be structured as a sale for income tax purposes. Alternatively, a securitization can be structured to provide the Originator both with a sale of the assets under generally accepted accounting principles ("*GAAP*"), 3 as well as a debt issuance for tax purposes. Since the bankruptcy of Enron, achieving accounting sale treatment for any securitization has become more difficult. Originators gain another benefit from securitizing assets by retaining servicing rights relating to the assets. Under GAAP, Originators generally can book servicing rights as a new asset. Moreover, retention of servicing rights by an Originator enables the Originator to maintain its business relationship with its customers and to receive additional revenue through the collection of a servicing fee.

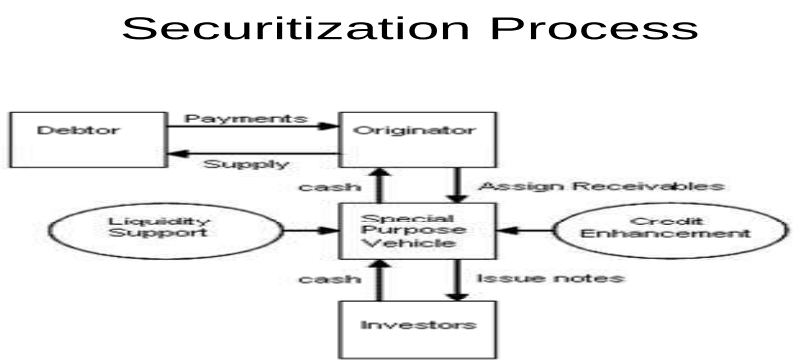
Securitization also has some disadvantages for Originators, including significant initial transaction and on-going compliance costs and reduced control by the Originator of the assets sold to the SPE. Costs with respect to a securitization transaction are generated by a variety of professionals required to complete and maintain such transactions, including attorneys for the Originator and the other parties, trustees (in many cases), rating agencies, accountants and investment banks, placement agents or financial advisers. Compliance with regulation has been uniformly acknowledged to require the generation and filing of new data and, thereby, has increased the costs associated with drafting and creating provision of initial disclosure, due-diligence along with other corporate governance norms and on-going reports for decision-making and information purposes.

Another disadvantage of securitization for Originators is that securitizations often require Originators to surrender a great amount of control over the assets in order to achieve some of the tax and accounting benefits set forth above. However, this disadvantage is somewhat mitigated through the Originator's retention of servicing rights.

Finally, in some cases, due to either the low quality of the assets involved or the lack of operating history of the Originator, or both, the costs of credit enhancement, when combined with the high transaction costs of securitization generally, may actually make a securitization more costly for an Originator than an alternative source of financing. In this regard, it should be noted that a rating agency often looks for three years of operating history of an Originator before it will agree to rate a securitization security or MBS or Asset Backed Security (ABS) involving the Originator's assets.

SECURITIZATION PROCESS

FIGURE 2: SECURITIZATION PROCESS



Proposed process of securitization given in figure 2 indicates that a Debtor receives a loan or supply of money from the originator or the bank or a financial Institution. The financial institution than transfer the assets created or the ownership on the asset created to a Special Purpose Vehicle along with the rights to collect and distribute the receivables being generated by the assigned asset. SPV creates Debt securities and gets them credit rated by an appropriate rating agency along with generating underwriting from a third party for liquidity support in the case of failure of asset or asset class to pay back the promised returns on the instrument.

Debt Securities hence created by the process is then issued or sold to investors and cash is generated, the cash so generated by SPV is handed over to the originator or the financial institution, which can use the same for running its normal business or may reinvest it further, may be in more profitable ventures or activities. SPV over a period of life of security receives cash flows generated by the asset and distributes the same to investors of securities. The process helps in passing the prepayment and reinvestment risk to the investor from the originator or the financial institution.

To summarize securitization process involves the following steps:

1. A sponsor or originator of receivables sets up the bankruptcy remote SPV, pools the receivables, and transfers them to the SPV as a "true sale"
2. The cash flows are tranched into asset-backed securities, the most senior of which are rated and issued in the market; the proceeds are used to purchase the receivables from the sponsor
3. The pool revolves in that over a period of time the principal received on the underlying receivables is used to purchase new receivables
4. There is a final amortization period, during which all payments received from the receivables are used to pay down tranche principal amounts.

SPECIAL PURPOSE ENTITIES OR SPECIAL PURPOSE VEHICLES

To insulate investors from the bankruptcy risks of the Originator, securitization generally rely on the use of specially formed, limited-purpose entities (also referred to as "special purpose companies", "bankruptcy remote entities", "bankruptcy remote vehicles" or entities, "SPCs", "SPVs", "SPEs". These entities or vehicles forms the unique feature of a typical securitization arrangement as these entities can be established under either trust or corporations law.

The purpose of the SPV is to acquire receivables and any associated collateral rights from an originating institution. The SPV pays for the receivables by issuing debt securities (or notes) backed by the receivables. An SPE may be any form of entity (such as a corporation, trust, limited liability company or limited partnership) that is subject to various restrictions on its activities. These restrictions, were developed by investors, the rating agencies and the market along with, where such restrictions are appropriately applied to an SPE, permit investors and the rating agencies to assume that the SPE will not become the subject of a bankruptcy proceeding.

An accurate sale opinion concludes that the transfer of the assets to the SPE eliminates the assets from the bankruptcy estate of the Originator if the Originator becomes subject to a bankruptcy proceeding. Based upon the transaction structure, the existence of the SPE restrictions and, in part, the true sale opinion, the rating agencies and the investors are generally willing to assume that the assets and the cash flow from the assets are inaccessible from the bankruptcy risk of the Originator.

REAL ESTATE AND REAL ESTATE MARKETS

Real Estate can without doubt be identified as the oldest form of investment known to man. Even in the modern high technology economies real estate is a dominant economic factor, although the demands of investors and users have changed with time. The increasing need for high and secure returns, driven by the rising global competition through open markets, also affects the investment in real estate.

Buying residential housing offers the best investment for relatively little risk if done conservatively. Whether you buy home or a house to rent, tax laws, leverage, and demand help you to acquire and grow your real estate investment. The intrinsic immobility of real estate calls for other means of economic exchange. Securitized real estate is the logical answer to the demand for efficient international diversification of real estate portfolios.

As discussed above securitization covers the risks for the lenders and provides them with an opportunity to take more risks in search of higher returns, the search for higher returns makes even sub-prime investments look investable thereby the lending norms of banks as well as other financial institutions get relaxed plus majority of borrowers, who need large sums of money to buy into reality gets an opportunity to invest or participate in property market. This phenomenon of easy access to mortgages and availability of large funds makes reality investments simple and devoid of any operational troubles thereby creating potential for large scale growth led further by pertinent demand in real estate asset categories, whether commercial or residential. The tax advantage on mortgages as well as on housing loans along with capital gain taxes treatments and relaxations on the profits made by selling real-state assets, world over, makes real-estate investment lucrative. Couple of other reasons for sustaining fast paced real estate growth are leveraging and exceeding movement in housing prices.

LEVERAGING

Because most of the housing is bought with a mortgage, your investment in the house is originally the amount you put down or the amount taken out of one's savings – the amount invested by an investor is called 'the equity'. Your equity is always the value of the house less the mortgage amount you owe (Equity = present market value of the property – value of mortgage). Since the bank's mortgage claim is fixed, any increase in the value of the house unswervingly increases your equity.

Leverage makes your equity grow faster than the value of the house moreover that can mean a significantly high investment rate for your investment or to put it simply a high ROI (Return on Investment). As long as you put enough down for your initial investment and maintain your income, you should be able to weather most market downturns.

For example, consider you put 50% down for a $100,000 house - which gives you $50,000 in house equity and a $50,000 in mortgage or loan by bank. If house prices get higher just by 10% over the next year, your $100,000 house grows to be $110,000. Despite the fact that you still owe about $50,000 on the mortgage your equity is now $60,000 (110,000 – 50,000). That's a 20% equity growth rate - a high investment!

MOVEMENT IN HOUSING PRICES

Phenomenally rising population needs to live at someplace; the need for the shelter and the number of people who earns or starts a new family is always increasing. This pretty much keeps housing prices going up - generally about a minimum of 4% or 5% per year over the long run in developed economies but in certain fast developing economies like Middle East, Asia and Far East the growth margins have seen a phenomenal figure 0f 25% - 28% hike within a year's time. Year 2004 to 2008 has seen the real estate markets of Middle East and Asian economies booming in three digits cumulative growth rates both in residential and commercial asset classes.

Every year hundreds of new construction projects were initiated and real estate groups and companies mushroomed in countries like UAE, India, China, Singapore, Malaysia, Qatar and Hong Kong.

Most of the buyers they depend upon loans or mortgages to buy their dream house or even to invest in one. In today's world of increasing wages and salaries and families with dual income most of the prospective buyers qualify for mortgages.

As the common knowledge about loans and mortgages suggests that cost of every loan or the burden on each loan is the rate of interest or the prevailing lending rate to be more specific, the interest rates or the change in interest rate affect not only the numbers of buyers but the house price they each can bid for. Lowering of interest rates allow more people to qualify for mortgages - and to bid higher on a house or may be to go for a higher value more comfortable resting place (the property). This causes temporary upward pressure on housing prices. The reverse comes about with rising interest rates. But these effects are for short term and put peaks and trough on the trend of relentless rise in prices.

If you put enough down or can save sufficient so as not to be too exposed to holding costs or interest service burden and can preserve, uphold or maintain your income for your own house, or rent income from your rental, you should be able to hold out through various economic downturns. Then your responsible level of leverage will aid as well facilitate you to grow your wealth faster than most other forms of investment.

SECURITIZATION AND REAL ESTATE GROWTH – ANALYZING THE RELATIONSHIP

FIGURE 3.1: RELATIONSHIP BETWEEN SECURITIZATION AND REAL ESTATE GROWTH

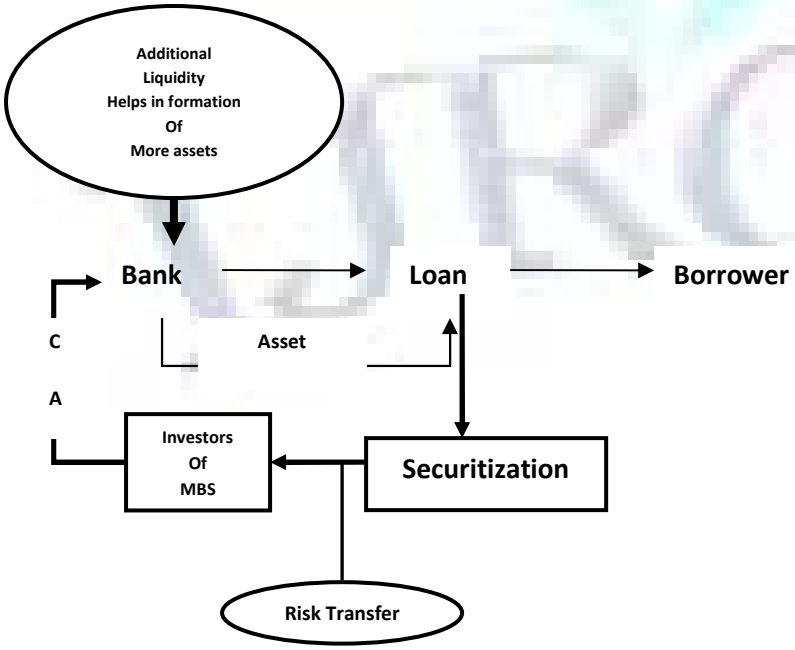
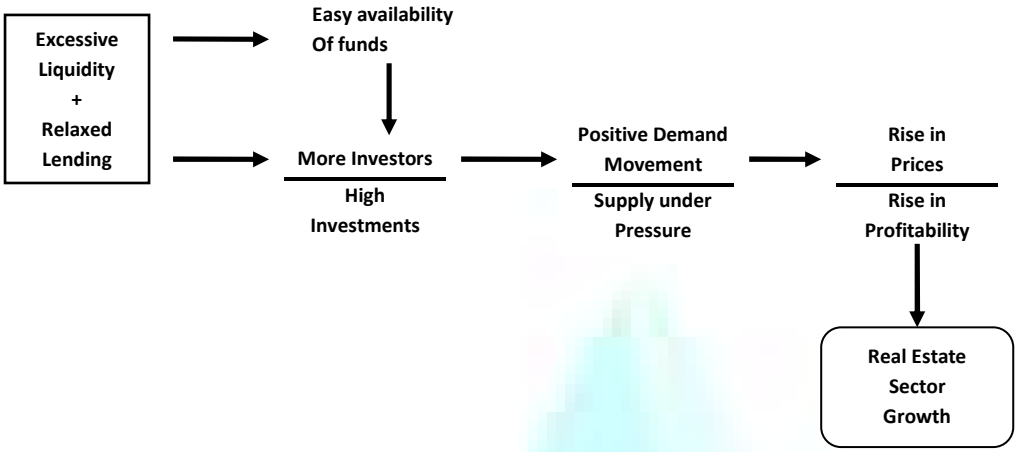


FIGURE 3.2: LINKAGES BETWEEN LIQUIDITY EXPANSION AND REAL ESTATE SECTOR GROWTH



Relationship between securitization process and real estate growth is complex as it is multifaceted plus involves lot of variables and constraints that may get indirectly or directly affected by environmental factors. The relationship depends upon lot of environmental factors such as monetary policy of the government, demand for mortgages in conjunction with demand for real-estate, government policy towards real estate investments, economic conditions along with economic stability of individual country and global economic conditions. Mentioned environmental factors determine the amount of money available in the real-estate market or volume of potential flows towards realty sector. Kind of returns expected and long-term outlook of country or global real estate sector can be formed with the study of the mentioned factors.

ASSUMPTIONS

In order to study the relationship between securitization of mortgages and real-estate growth we need to consider some assumptions. The first assumption is all environmental factors to be considered as constant. The next assumption is that there exists vast market of investors interested in investing in MBS (Mortgage Backed Securities) and last assumption is that there can be present a relationship between securitization and real-estate growth which will be impacted by easy availability of loan funds to borrowers or investors of real-estate sector.

EXPLAINING THE RELATIONSHIP

Figure 3.1 and 3.2 represents the relationship that may occur between securitization process and real estate growth. Both figures represent the two different but overlapping phases of the complete process that will help in understanding how securitization process and its outcome helps in creating better demand conditions furthermore growth opportunities for real estate sector. Both figure 3.1 and figure 3.2 are though distributed in phases for simplifying the process but to get a holistic view the need to realize that the complete process can not be segregated or separated is imminent.

Next an important understanding about the process, which should be consolidated, is that though process is overlapping and seems cyclical in nature, is to be considered as a process in distributed or functional in stages. Each stage has to be considered as a separate phenomenon emerging as an outcome of previous stage or stages.

The initiating point of the relationship is bank granting the loan or making a mortgage to a borrower, once a loan has been disbursed or a mortgage is granted the money supply with the bank shrinks and this situation limits out bank's operations along with limiting its profitability and enhancing bank's or financial institution's risk. The risk associated with the individual borrower and the property gets added to the risk profile of the bank thereby making its operations more risky.

In order to reduce the risk as well as to generate liquidity banks rely on or undertake the process of securitization of assets. Banks will acquire and bundle assets class or assets of same characteristics or attributes together and transfer them to a SPV (Special Purpose Vehicle) and carry out the process of securitization as shown in figure 2 and discussed above. The acquired assets or the asset class will be securitized and the outcome of the process will be the formation of MBS, which will be offered to the investors and along with the sale of MBS the risk associated including the reinvestment risk will be transferred to the investors or buyers of MBS. The cash generated from the process of securitization or to be more precise the liquidity generated by proceeds of the sales of securitized instruments called MBS or ABS (Asset Backed Securities) to investors, rather institutions including governmental agencies, will be passed on to the bank or the financial institution, called originator.

The cash generated from the sales proceeds will provide liquidity to the originator to generate more loan assets or to disburse more loans or grant more mortgages. As the process of securitization will help a financial institution or a bank to pass on its risks to investors of MBS along with generating additional cash or much needed liquidity and profitability the option to securitize becomes lucrative for the bank. The additional cash generated will be channelized back into the operations and will be further granted as mortgage or home loans. The ease of passing the risk to the investor of MBS will make banks less risk averse or bit more relaxed in its approach to screen loans and associated risks, verification process will become lenient, the loan qualification norms will be relaxed thereby qualifying large number of applicants into prospective borrowers. This tendency of relaxation or leniency provokes a bank to accept even sub-prime assets for financing.

The overall impact of enlarged as well as enhanced capacity to finance, easy availability of loans from the banks or financial institutions, relaxation in lending norms and the strong desire of a bank to enhance the profitability so as to impress its stock holders creates a scenario of expanded money supply towards real estate market that encourages or attracts other investors to follow the suit.

We can understand the specific intricacies of bank's response to creation of liquidity along with borrower's demand behavior for mortgage and emerging impact of both phenomenons on real estate sector with the help of figure 3.2, which is extension of figure 3.1 and explains how relationship between securitization and growth in real estate sector takes shape after bank generates liquidity with the help of securitization process. Figure 3.2 takes the scenario brought out by figure 3.1 forwards and the anticipated process of figure 3.2 starts where the process of figure 3.1 ends.

The set off point for figure 3.2 is the setting when excess liquidity has been created and lending norms have been relaxed, the next stage will be two fold situations, first will be easy availability of funds and second will be generation of more investments as more investors get attracted towards real estate sector and they find the timing suitable for large investments. The projected condition of generation of huge investments and large number of investors is a complex arrangement of excessive liquidity coupled with relaxed lending norms and unmitigated by easy availability of funds to public as represented in figure 3.2.

Next phase, after creation of position with large number of investors and rise in quantum of investment is rise in demand for property or realty. The previous stages creates positive demand movement for real estate and this demand creation will put pressure on supply and as a matter of fact, the supply of property or realty can not be increased so as to bring in short-run equilibrium. Higher demand for realty coupled with inadequate supply and easy availability of funds all

lead to upward movement of prices rather the situation creates capricious prices constantly moving higher on the scale. The next stage is marked by chaotic rise in prices and super normal profits. Short-term stage of upward moving prices creates super-normal profits for the realty companies as well as for investors. In given circumstances the former non-property companies enter or get into or else develop into the real estate business company, some small-time firms become real-estate business in the course of the closure of the original line of business.

The situation creates further demand for the funds and provides banks or financial institutions with a chance to earn higher returns or higher yields on their loans and investments.

The situation of skyrocketing prices and soaring bottom-line creates growth, expansion, development and investment opportunities in real estate sector.

ANALYZING THE IMPACT OF SECURITIZATION AND REAL ESTATE SECTOR GROWTH

It is often observed that securitization has different impact in prime and sub-prime markets. In prime markets it has been delivering the expected results though several theorists supported upon research findings and data based on limited scope of country level analysis, may not agree with the claim but world-wide analysis suggests as well as supports good performance by securitization.

The securitization process concentrates on certain dynamic aspects or situational facets that bring in more volatility in real estate segment. Prominent amongst several reasons are the fake security that securitization provides to financial institutions or to the originators. Other important factor is weakening of underwriting standards. There are several factors that helped to weaken underwriting standards, prominent are lack of transparency and non-availability of unified, as well as universal standards in the markets for securitized loans.

Changes coming in real estate sector over a period of time also initiated certain transformations which resulted in real estate loans or securitized loans becoming risky. In earlier years banks as well as financial institutions were concerned about their reputation and goodwill, regulators were stringent, even the market size was small and well regulated moreover the environmental variables along with factors discussed kept securitization loans and real estate financing synchronized with investors objectives. Initiated by large scale construction projects and ever increasing demand for finances along with the increased volume and value of securitization deals the reputational effect or the concern or serious consideration about goodwill of financial institution that was earlier sufficient to sustain underwriting standards lost its importance. As loan volumes increased, and the future of the housing market became more and more tenuous or unsubstantiated, the current benefit from originating questionable loans outweighed the future costs, and this led to deterioration in issuers' incentives to properly underwrite loans.

Growing investors concern and realization by the regulators has initiated a process of reform in improving the standards of loan screening. Looking at the issue of fake security or lowering of mortgage screening standards it has been proposed that issuers must be mandated or required by regulator's provisions to maintain a 5 percent stake in any securitization. Assets or asset class selected or acquired for securitization should have been in originator's portfolio for at least 3 years and should not have any outstanding interest or any other forms of due payments older than one quarter as on the date of transfer to SPV or SPE.

Availability of information to investors of MBS along with rise in their awareness level has made them more cautious about investing in securitized loans and they have started seriously questioning the viability of every MBS or ABS offered fro sale in the market. As proposed and explained by Gorton and Souleles (2007) and brought out by their work the prices paid by investors in any form of Mortgage Backed Securities or Asset Backed Securities takes into account issuers' ability to bail out their MBS or ABS, if credit risk or default situation arises. Thus, issuers' incentives need not necessarily be misaligned with those of investors. This view is also supported by earlier work on the securitization of prime mortgages by Ambrose, et al., 2005, who found that securitized loans tended to perform *better* than similar non-securitized loans. In simple words, despite the theoretical charm of the solution, securitized real estate and the investment securities or alternatives emerging out of the process has failed to meet the high expectations of potential investors.

CONCLUSION

This article has examined the mechanics in structuring a mortgage securitization program and has gone a step further to study the linkages that exists between accepting or introducing a securitization program by a country and kind of real estate growth or boom the real estate sector witnesses as the result of positivity created by the securitization program.

Analysis of the proposed relationship between securitization program and real estate sector growth has been undertaken both in short run and long term and found that in short run there are far reaching benefits and boom in real estate market that arises due to positivity of the securitization process. There are lots of examples of how securitization helped real estate market to grow at an accelerating pace and the phenomenal growth attained attracted lot of new entrants in the sector though some of the new players had no previous exposure or experience of the segment. To highlight the fact, we can look at the example, as in Germany the number of public listed real estate companies saw a steady growth before the arrival of economic crisis; however this was not due to the public placement of newly formed property companies but by the development of former non-property companies into the real estate business in the course of the closure of the original line of business. Moreover it would be not being exaggerated to speak of a drastic growth and establishment of real estate companies as an investment vehicle for indirect real estate investments.

However in longer run the environmental factors can not be controlled as well as can not be kept constant so positivity may no longer stay very constructive or fruitful thereby making securitization less effective as real estate sector's source of growth. The lack of quality standards for screening mortgages accompanied by huge demand for loans and the will to make lot of profit rather a super normal profit by financial institutions along with real estate companies will result into collapse of the mortgage securitization as the real estate sector will crash with artificial supply shortage and excessive and massive construction projects.

The greed to earn more and to make very high profits and the compromises made in loan or mortgage evaluation procedure were the reasons behind the recent collapse of real estate sector world over and the same were the factors that created sub-prime lending and sub-prime crises in major economies of the world and lead the global economic system towards a complete collapse rather global economic meltdown or economic crisis.

The final comment will be that securitization as a tool of finance has no short coming and if used with complete susceptibility and understanding will definitely result in growth as well as provide financial security and stability to a bank or a financial institution. Securitized securities provide earning options along with security of investment to the investor. If the real essence of the securitization process is maintained and financial regulators play their role more effectively and aggressively along with the disciplined behavior of banks and financial institutions than securitization will result in growth of any industry and will give long term benefits to the economy.

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EXPLORING HRM PRACTICES IN SMEs

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ABSTRACT

India has undergone drastic changes from a planned to a market-oriented economy. Economic structural change has caused changes in the organizational behavior of Enterprises, especially in the small and medium sized enterprises (SMEs), which have gained much more management autonomy since the economic reform. Key research Questions are, Have Human Resource Management (HRM) practices in Indian SMEs been changed?, 2) What are HRM approaches that are best suited for Indian enterprises? & 3) Is there an interrelationship between HRM and SME performance in India? This Paper examines HRM practices in 50 selected Indian SMEs, using cluster analysis. The results from the cluster analysis demonstrate that HRM Practices like HRP and Job analysis can help companies to obtain better productivity from the employees where as scientific selection and effective on the job training can help the companies in achieving better performance. There appears an underlying association among HRM practices, HRM outcomes and enterprise performance in Indian SMEs, especially However, because of the distorted factors existing in the transitional economy, such as the one in India, this relationship is not clear in all Indian SMEs. In the present paper the researchers tries to understand the HRM practices in SMEs and try to make causal relationship of HRM practices and its impact on firm's performance.

KEYWORDS

Human resource management, small and medium enterprise, firms performance, HRM practices, HRM outcomes.

INTRODUCTION

Over the last few decades there has been a tremendous growth in SMEs. More and more of such enterprises are now struggling to survive due to immense pressure created both by globalization and giant multinational companies (e.g., Mulhern & Stewart, 2003). As SMEs contribute significantly to a nations' gross domestic product (GDP) and provide employment to a large number of people, therefore it is in the interest of governments to encourage their survival and growth. Their failure could lead to a situation of unemployment and consequent social tensions. To ensure viability of help to the SME sector, the Indian government has been analyzing the need for a shift in its approach towards their growth. So far they have been looked at as an area of government subsidy in different spheres of their working, which has resulted in a situation of pure 'governmental patronage'. In this regard now a need is being felt for a paradigm shift; as a result banks are being encouraged to look at the provision of credit to SMEs, more as an opportunity for profit rather than a social obligation under directed subsidized credit (Government of India, 2006). We believe it is important to re-examine different aspects of working of the SMEs and their foundational strengths.

At present firms are acknowledging the efficient management of human resources as a critical factor in their success or failure (e.g., Huselid, Jackson, & Schuler, 1997; Paauwe, 2004; Schuler & Jackson, 1999). Does this equally apply to SMEs? The existing literature shows a strong deficiency of systematic HRM research in SMEs. The situation in the Indian context is far worse; the field is almost barren. Scholars considerHRM to be a phenomenon related to large organizations (e.g., ISED, 2005; Wilkinson, 1999: 206) and workers in SMEs have been described as ''the invisible workforce'' (Curran, 1986). Indeed working in SMEs does not involve much paper work, policies, systems, procedures, rules and strategies, and even the presence of an HR officer is missing. Not surprisingly then HR issues are not considered to be critical for their growth and survival, and accordingly very less is invested in employee training and development (e.g., Stewart & Beaver, 2003).

This paper examines the extent to which indigenous ways of people management are practiced in Indian SMEs. This research analysis is based on the existing literature on indigenous management practices in developing countries (see, Budhwar & Debrah, 2004; Kanungo & Jaeger, 1990; Kiggundu, Jorgensen, & Hafsi, 1983; Warner & Ying, 1998) .The realities in the context of Indian SMEs are analyzed in the areas of, Manpower Planning, recruitment, Selection, skill development, Training, Development & retention. The remaining paper is structured as follows. The next section analyses the concept of SME with a specific reference to India. This is followed by the need of research, Formulation of Objectives & Research hypothesis. Finally, the analysis of work in progress and further studies on linking HRM practices with firm's performance.

SMES IN GENERAL AND THE INDIAN SCENARIO

SMEs are generally started by a single entrepreneur or a small group of people, and are often managed by owner– managers (Ritchie, 1993). Their organization structure is mostly flat. SMEs do not have many layers (mainly due to small number of both employees/supervisors and specializations) because the owner/s is/are mostly at the helm of affairs (which still keeps them bureaucratic as most of the times employees do not dare to challenge the supervisors/ owner/s). Nevertheless, it adds to their flexibility (Scott, Roberts, Holroyd, & Sawbridge, 1989). Many researchers argue that entrepreneurs seek to derive several advantages by undertaking operations at a smaller level in terms of flexibility, informality, sustainability, and structural adaptability. On the contrary, larger firms find it difficult to derive such benefits from their operations (e.g., Gibbs, 1997; Hendrickson & Psarouthakis, 1998; Matlay, 2000; Pfeffer, 1994; Storey, 1994). SMEs are known to focus more on the operational aspects and neglect people-management issues. Technological advancements have contributed to significant changes to the nature of present production systems. This has also impacted the nature of work, workers and the skills involved. While small entrepreneurs do imbibe these advancements in their operations, they do not recognize the critical role of effective HR policies for their success. Nevertheless, the need for a skilled workforce in SMEs certainly emerges during periods of such technological changes. In particular, SMEs have to undergo some change when they compete with global companies and other large buyers, as they are dependent on supply contracts from the same. This puts considerable pressure on SMEs to control both their costs and quality and meet the different legal requirements. This is a serious challenge for SMEs, especially for those operating in developing countries with labor-intensive technologies, where labor cost is a major concern (e.g., Stewart & Beaver, 2003). Many of them resort to questionable practices, such as employment of child labor to reduce labor costs and violation of labor standards including denial of minimum wage, and other minimum-work conditions. Most of them also lack access to relevant data and information about new markets, legal provisions regulating their working, and product innovations, which hinders their survival. Their accessibility to professional management tools is almost absent.

The concept of SME itself is quite problematic. As Storey (1994: 8) notes, ''there is no single, uniformly acceptable, definition of a small firm. There are differences as to size, shape and capital employed. In the USA there is no standard definition of small business. Even a firm employing up to 1500 employees is considered as small by American Small Business Administration. The concept in USA is industry-specific; mostly income and persons employed will determine whether a firm falls in the category of small business or not.'' The European Commission classifies firms according to the number of employees as: micro (0–9), small (10–99) and medium (100–499). In China, it includes companies employing less than 200 persons; and in Japan those employing less than 300 persons are considered to be SMEs (e.g., Srivastava, 2005: 166). The definition of SMEs sometimes also depends on the stage of national economic development and the broad policy purposes for which it is needed. Whatever may be the definitional problems, SMEs occupy an important place in the economy of most countries; especially they are favored for developing countries due to their employment potential.

In India, until recently there has been no formal concept of SME or medium enterprises. However, the term small scale industry (SSI) is well known; this is different from the SME sector in other countries. The Government of India had a policy of providing assistance of different types to SSIs through various state agencies. Lately, Indian Parliament has enacted the Micro, Small and Medium Enterprises Development Act, 2006 As per this Act, medium manufacturing or production enterprises are those which have an investment in plant and machinery between Rs. 50 million and 100 million (1$ US = Rupees 40.10 approximately in July 2007). The investment referred to in this definition is that in ''initial fixed assets'' i.e., the plant and machinery (which excludes land & building). Under this Act, a micro enterprise has been defined as one where the investment in plant and machinery does not exceed Rs. 2.5 million and a small enterprise as one where such investment is more than Rs. 2.5 million but does not exceed Rs. 50 million. Whereas, a medium enterprise is one in which the investment limit is between Rs. 50 million and Rs. 100 million. In this Act there is no reference to the term SME. One may, however, combine the definitions of small and medium enterprises to derive a concept of SME. This would mean that an SME in the Indian context is an enterprise in which the investment in plant and machinery is between 2.5 million and 100 million

The definition of the terms ''small'' and ''medium'' enterprise in India is investment specific, while in the rest of the world it reflects a combination of factors including terms of employment, assets or sales or combination of these factors. Since the term ''medium'' enterprise in India is a recent one, hence, the data available is only for SSI units. Details regarding the key contributions of SSI towards Indian economy are presented in Table 1. An important thing to note is the decline in the gross number of SSIs since 1998–1999; this is due to the exclusion of tiny units from the category of SSI (for more details on SSIs in India, see Datt & Sundharam, 2005). The data in table show that in the last 15 years the total output contributed by SSIs has gone up from Rs. 1787 billion in 1991–1992 to Rs. 4187 billion in 2004–2005. It also shows that the total employment in them has gone up from 13 million in 1991–1992 to Rs. 28.3 million in 2004–2005. This data is just about the SSIs; information on the medium-scale industry is not officially documented separately due to problems of clear identification of the concept of medium enterprise. As revealed by the findings of the last National Sample Survey Organization (NSSO) in India (61st round conducted in November 2006), the employment in the organized sector (i.e. the sector covered by key labor laws) stood at 25.4 million in the year 2004–2005. Most SSIs are able to keep themselves out of this sector even as some of them might be covered otherwise. They do so through legal or extra-legal means—something too well known in Indian context. Thus, the total employment in SSIs in India is higher than that in the organized sector. Further, the total exports' contribution by them is shown in Table 1 to have grown from Rs. 138 billion in 1991–1992 to Rs. 976 billion in 2003–2004. This shows how much importance one needs to attribute to this sector in view of the peculiar socio-economic realities in India. Before Independence in 1947, SSIs in India were denoted as the village and the urban cottage industries.

The Industrial Policy Resolution of 1948 and the document of the First 5 Year Plan defined an SSI on the basis of the number of persons employed. It stated that the small-scale industry included all those units which employed less than 10 workers when used power or employed less than 20 workers if did not use power. Later on the criteria was changed to that of an ''investment limit''. Interestingly, now units with investment up to Rs. 2.5 million are not part of SSI units and are categorized separately as ''micro enterprises.''

TABLE 1: OVERALL PERFORMANCE OF INDIAN SMALL-SCALE INDUSTRY (SSI) SECTOR

Financial year	No. of units (million)	Output at current prices (Rs. million)	Employment (nos. million)	Export (at current prices Rs. million)
1991–1992	2.08 (6.9)	1,786,990 (15.0)	12.98 (3.6)	138,830 (43.7)
1992–1993	2.24 (7.9)	2,093,000 (17.1)	13.41 (3.3)	177,850 (28.1)
1993–1994	2.38 (6.0)	2,416,480 (15.5)	13.94 (4.0)	253,070 (42.3)
1994–1995	2.57 (8.0)	2,939,900 (21.7)	14.66 (5.2)	290,680 (14.9)
1996–1997	2.86 (4.9)	4,126,360 (15.8)	16.0 (4.8)	392,420 (7.6)
1997–1998	3.01 (5.5)	4,651,710 (12.7)	16.72 (4.5)	439,460 (12.0)
1998–1999	1.2	2,129,010 (12.5)	22.06 (3.5)	489,790 (10.2)
1999–2000	1.23	2,342,550 (10.0)	22.91 (3.9)	542,000 (10.7)
2000–2001	1.31	2,612,890 (11.5)	23.9 (4.4)	697,970 (28.8)
2001–2002	1.38	2,822,700 (8.0)	24.9 (4.2)	712,440 (2.1)
2002–2003	1.47	3,119,930 (10.5)	26.01 (4.4)	860,130 (20.7)
2003–2004	1.56	3,577,330 (14.7)	27.14 (4.3)	976,440 (13.5)
2004–2005	1.66	4,182,630 (16.9)	28.3 (4.3)	1,04,320 (14.1)

(1) Figures in parenthesis in columns 2–4 indicate growth as compared to previous year. (2) Figures in parenthesis in column 5 denote SSI share of exports to total exports by Indian exporters. Source: Computed from Annual Economic Surveys, Government of India, different years.

NEED OF THE RESEARCH

When big organizations go on a rampage, small ones have to think smart. This is the wisdom for India's small and medium enterprises (SMEs) that fail to keep pace with the growth juggernaut. Amidst lot of competition within SMEs, it becomes very important for the SMEs to benchmark various processes in order to remain competitive within the marketplace and ensure they can benefit from what their competitors are doing to stay one step ahead of the game.

HUMAN RESOURCES ARE ONE OF THE MOST ESSENTIAL GROWTH INDICATORS FOR THESE ORGANIZATIONS. GROWTH-HUNGRY LARGE COMPANIES ARE SCOURING THE MARKET FOR HUMAN RESOURCES (HR), LEAVING ONLY CRUMBS FOR SMES WHO CAN NEVER OUTPAY THE BIG ONES WHEN IT COMES TO SALARIES.

Moreover, typical about micro firms is the predominantly horizontal structure that one wants to preserve. The employees that surround the entrepreneur are mostly a tight group that communicates informally. That is why the challenge an entrepreneur is faced with in this phase is directly linked to maintaining the climate of participation unique in a micro firm. When the organization grows, it becomes more difficult to involve all employees equally in operational decisions. Moreover, with an ever growing team it becomes extremely difficult for the entrepreneur to keep the close partnership with every employee. The creative, intuitive approach that was fruitful in the start-up phase appears to become an obstacle for a number of employees. There is a lack of formalization, structure and clarity when thinking of performance, training or reward management. More specifically, employees report a need for a transparent training and compensation policy and a standardized introduction procedure for new employees. Employees miss a uniform strategy and functional organizational structure.

The lack of "in place and streamlined" HR functions in these organizations come as a weakness when all the efforts invested in building a team become fruitless because of high attrition rates. There can be several reasons to this such as dissatisfaction with pay, HR policies and practices, lack of hygiene factors, employee loyalty issues, and the like. Some HR Issues in SMEs are discussed below in the present research paper.

RESEARCH METHODOLOGY

Both quantitative and qualitative methods were adopted. Primary research amongst Indian SMEs is not easy — there are problems due to recession (for example, managers are reluctant to divulge information). Preliminary research indicated that the most effective method would be to questionnaire survey — and 50 small and medium size enterprise managers spreading in region of Central Gujarat- Vadodara were selected and surveyed.

The questionnaire was designed with the combination of open ended and close ended questions asking the manager about size of the firm, No of employees they are having, HRM practices like HR Planning, Recruitment, Selection, Training & Development and retention.

KEY RESEARCH QUESTIONS

It has been discussed, in theory (e.g. Beer, Spector, Lawrence, Mills & Walton 1984; Fombrun, Tichy & Devanna 1984; Guest 1987; 1997; Schuler 1988; 1997), that the practice of HRM might lead to better HRM outcomes that can enhance firm performance. The empirical studies on the linkage between HRM and performance result in two different arguments.

One supports the view that the underlying practices of HRM enhance firm performance (Delaney & Huselid 1996; Huselid 1995; Huselid, Jackson & Schuler 1997; Youndt et al. 1996; Stroh & Caligiuri 1998).

The other argues that there is a weak link between HRM and performance (Lee & Chee 1996; MacDuffie 1995; Purchell 1995; Dunphy & Stace 1992; Wong et al. 1997).

Key research Questions are,

1) Have Human Resource Management (HRM) practices in Indian SMEs been changed?

2) What are HRM approaches that are best suited for Indian enterprises? &

3) Is there an interrelationship between HRM and SME performance in India?

As a result, firms are more able to create sustainable competitive advantage. In the context of Indian economy, what are the key elements of HRM practices that may contribute to better behavioral outcomes, and thus lead to better enterprise performance? More importantly, is there a linkage between HRM and performance also in Indian SMEs? These are the basic research questions the paper aims to answer.

HYPOTHESIS

The basic hypothesis is that better HRM activities will generally be associated with better performance (Beer et al. 1984; Fombrun et al. 1984). Better HR management (see discussions from Child 1994; Ding et al. 1997; Goodall & Warner 1997; Laaksonen 1988; Lin & Yao 1999; Thomas 1993; Tsang 1994; Zhao 1994; Zhu 1997; 1999) in Indian SMEs is characterized by firms practicing the following seven elements of HRM:

1. HR Planning (HRP)
2. Recruitment (R)
3. Selection (S)
4. Promotion (P)
5. Compensation Plan (CP)
6. Training & Development (T&D)
7. Retention Policy (RP)

It is also hypothesized that practices of the above-mentioned elements of human resource management will lead to better HRM outcomes, which is characterized by four outcome Indicators (Beer et al. 1984):

- A low level of staff turnover suggests that the organization will achieve cost effectiveness via less staff turnover (Clayton 1994; Huselid 1995). Annual staff turnover rate less than 10 percent is regarded as achieving one of the better HR outcomes as a result of HRM practices (Arthur 1994; Beer et al. 1984);
- Staff commitment means that staff is willing to sacrifice individual self-interest to achieve organizational objectives (Benkhoff 1997; Guest 1987; 1997; Mowday, Porter & Steers 1982).
- Staff congruence means that staff personal career goals are consistently linked with organizational goals, and staff is generally enthusiastic about likely advancing personal career within the environment of current organizational setting (Guest 1987; Benkhoff 1997).
- Competent staff is generally well educated and trained. They are also constantly developed in their skills and knowledge to meet new market demands and achieve organizational objectives (Beer et al. 1984; Zhu 1999).
- Better HR management and HRM outcomes should lead to better firm performance.
- Better firm performance is generally measured by increasing sales and productions, market competitiveness and growth potential (e.g. Lähteenmäki, Storey & Vanhala 1998; Ngo et al. 1998), which are characterized by:
  - Firms' increasing sales and productions for a consecutive period of three years;
  - Market competitiveness of firms in terms of their market position and market shares; and
  - Firms having expansion plan to display their developmental 'blueprints' for the future in terms of staffing, production, and sales and profits attainments.

RESEARCH OBJECTIVE

The Primary objective of the study is,

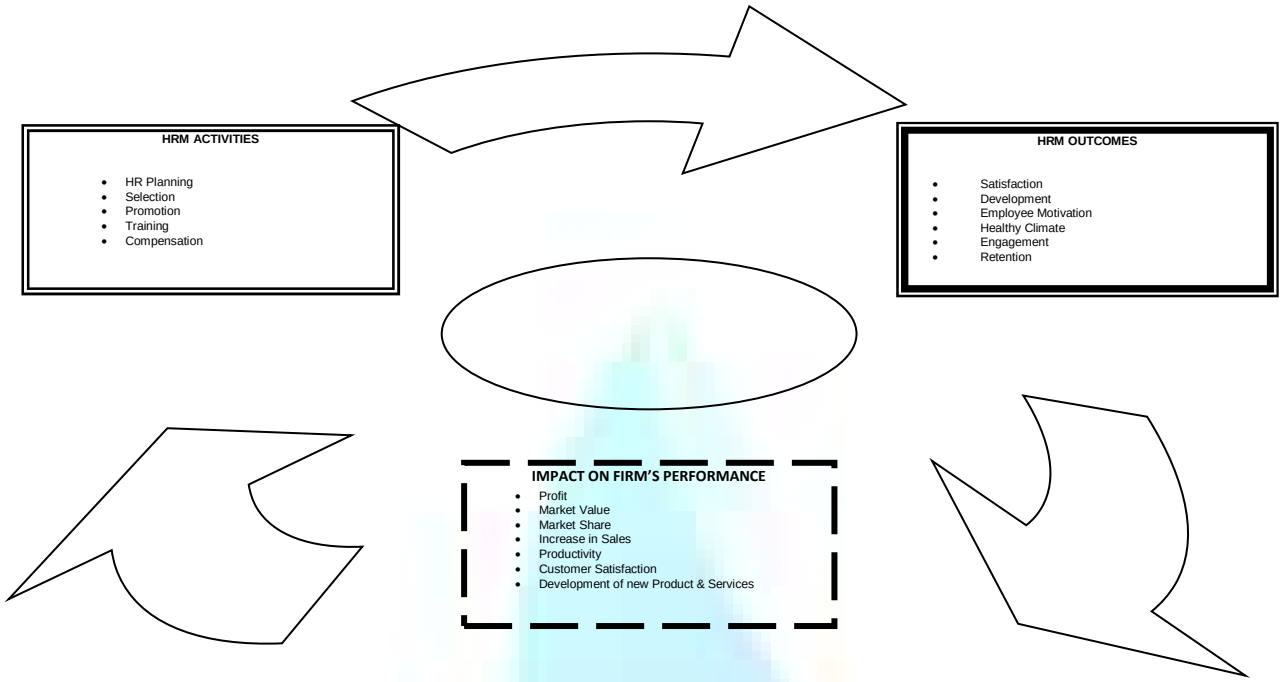
- To understand the nature of SMEs in Indian Context
- To understand the HRM practices in SMEs.
- To determine Recruitment & Selection practices
- To understand the manpower acquisition & development strategy in SMEs
- To explore inter linkage of HRM practices and its impact on firm's performance.
- To find ways to increase sustainable development for SMEs in India, via the chain of better HRM practices, better HRM outcomes, to better firm performance, and then to better and more sustainable economic performance in the national economy.

The Secondary objective of the study is,

- To propose the HRM model establishing the HRM activities linkages to HRM outcomes and further to Firm's performance.
- To validate the data using statistical tool and prove the model proposed in the research.

Because of the complex nature of Indian systems and culture, it is unlikely that there would be a simple linear correlation between the variables. Therefore, there is a need to look at the patterns of association between variables through clustering approach.

PROPOSED MODEL FOR CHECKING THE RELATIONSHIP BETWEEN HRM PRACTICES AND ITS IMPACT ON FIRM'S PERFORMANCE



SURVEY DESIGN

Based on theories, concepts, and frameworks discussed in the literature review, the author designed a survey as the primary means of data collection for the study. The instrument included 7 Sections. The first section includes basic information about company, year of establishment, its size, no of employees & skill mix. The second section covers HR practices on Planning & Recruitment, The third section covers Selection, The fourth is3 about promotion practices while Fifth is on Training practices, the sixth is on Development practices and the Seventh on retention strategy adopt by the SMEs.

SAMPLE

The target population of Sample is Small and Medium size Enterprise in the Vicinity of Vadodara and members of VCCI- Vadodara Chambers of Commerce and Industries. The sample size is 50. Sampling is of convenience sample.

ANALYSIS

After studying 50 companies in the area of Micro, Small & Medium Enterprises, we have made the following analysis:

- Majority of Companies (66%) are not following manpower planning which is very much helpful in keeping company lean and thin in today's recession like situation.
- 72% of companies follow casual & temporary recruitment which can be avoided through proper job analysis and man power planning which in turn will improve the productivity of the company.
- 60 % companies do not advertise for their Recruitment which results into less competitive or unskilled pool of candidates.
- Only 44% companies opted skill test as part of selection procedure.
- Only 32 % companies offer both on the Job training & Off the job training which is very much required for technical jobs
- 74% of companies are not having development program which gives employees an opportunity for developing knowledge, skills and attitude for the job as well as for company.

FUTURE STUDIES ON LINKING HRM PRACTICES WITH FIRM'S PERFORMANCE

HRM practices used in pilot study suggest that, effective HRM practices like, HR planning, Recruitment, Selection & Compensation will lead to positive HRM outcomes like, Satisfaction, Development, Employee Motivation, Healthy Climate, Employee Engagement & Retention of Employees hence Various hypothesis in this areas will be tested and parameters which depicts firm's performance like Profit, Market Value, Market Share, Increase in Sales, Productivity, Customer Satisfaction, Development of new Product & Services can be linked with firms HRM practices. New research questionnaire covering all the above aspects is being construct which will be sent to larger sample of SMEs to establish core interrelationship between HRM practices and its impact on firm's performance.

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ANNEXURE

ANNEXURE: 01 QUESTIONNAIRE

NAME:
DESIGNATION:
CONTACT NO:
COMPANY DETAIL

1. NAME OF COMPANY
2. YEAR OF ESTABLISHMENT
3. INDUSTRY TYPE
4. COMPANY SIZE: MICRO:[ ] SMALL: [ ] MEDIUM:[ ]
5. HOW MANY EMPLOYEES ARE WORKING IN YOUR COMPANY?
6. WHAT IS YOUR EMOLOYEE MIX?
7. (A) Skilled (B) Semi skilled (C) Unskilled

HR PLANNING

1. DO YOU FOLLOW HR PLANNING? YES ( ) OR NO( )
2. IF YES HOW FREQUENTLY?
   QUARTERLY [ ] SIX MONTHLY [ ] YEARLY [ ]
3. WHICH TYPES OF RECRUITMENT DO YOU FOLLOW?
   CASUAL [ ] REGULAR [ ] TEMPORARILY/CONTRACT [ ]
4. ARE YOU GIVING ADVERTISEMENT FOR THE RECRUITMENT?
   YES [ ] NO [ ]
5. IF YES, WHICH MEDIA/SOURCES DO YOU USED?
6. IF NO, HOW DO YOU RECRUIT?

SELECTION

1. WHAT IS YOUR SELECTION PROCESS?
   SKILL TEST [ ] GD [ ] PI [ ] HR INTERVIEW [ ]
2. WHAT IS YOUR SELECTION CRITERIA?(Rank)
   a. TEST (WRITTEN)
   b. EXPERIENCE (SKILLED)
   c. INTERVIEW
   d. G.D PI

PROMOTION

1. WHAT IS YOUR PROMOTION POLICY?
2. IS IT EXPERIENCE BASED OR PEFORMANCE BASED?
3. WHAT IS YOUR SALARY STRUCTURE?
   ENTRY LEVEL [ ] MIDDLE LEVEL SALARY [ ] TOP LEVEL [ ]
4. GIVE OVERVIEW REGARDING YOUR COMPANY'S COMPENSATION PLAN?
   D.A [ ]
   H.R. ALLOWANCE [ ]
   MEDCAL ALLOWANCE [ ]
   TRANSPORTATION ALLOWANCE [ ]
   EDUCATION ALLOWANCE [ ]

TRAINING

1. WHAT IS YOUR TRAINING POLICY?
2. WHICH TYPE OF TRAINING DO YOU OFFER?
   i. ON THE JOB [ ]
   ii. OFF THE JOB[ ]
   iii. BOTH[ ]
3. HOW MANY TRAINING DAYS IN THE YEAR?

DEVELOPMENT

1. DO YOU OFFER ANY DEVELOPMENT PROGRAMME?
   YES [ ] NO [ ]

IF YES THEN HOW FREQUENTLY?
(A) 3 MONTHS [ ]

(B) 6 MONTHS [ ]
(C) YEARLY [ ]

RETENTION

1. DO YOU HAVE ANY RETENTION POLICY?
   YES [ ] NO [ ]
2. WHAT DO YOU DO TO RETAIN YOUR TALENTED EMPLOYEE?
   - **YOUR SUGGESTIONS PLEASE**

THANK YOU

ANNEXURE-02 TABULAR ANALYSIS

1.Company Classification

Engineering	10
General Service	8
Textile Industry	5
Dimond Industry	6
Food Industry	11
Entertainment Industry	10

2.Company size

Micro	16
Small	21
Medium	13

3.Employee Mix

Skilled	19
Semi Skilled	23
Unskilled	8
	50

4.HR Planning

4.1 Do you Follow HR planning

YES	12
NO	38

4.2 How Frequently

Quarterly	4
Six Monthly	2
Yearly	6

4.3 Type Of Recruitment

Casual		20
Regular		14
Temporarily/contract	Contract	16

4.4. Advertisement for Recruitment

YES	20
NO	30

4.4.1 If yes, Media/sources used

News Paper	11
Local media	3
People to People	2
Contacts	2
Web Site	2

5.0 Selection Process

	Number of companies
Skill Test	22
GD	3
PI	12
Technical Interview	13

6.0 Promotion Policy

Experience based		28
Performance based		22

7.0 Salary Structure

1 Entry Level	22
2 Middle Level Salary	16
3 Top Level	12

8.0 Compensation Plan

D.A	5
H.R. Allowance	3
Medcal Allowance	7
Transportation Allowance	8

9.0 Training

On The Job	8
Off The Job	26
Both	16

9.1 Offer any development programm

Yes	13
No	37

9.2Development Programme period

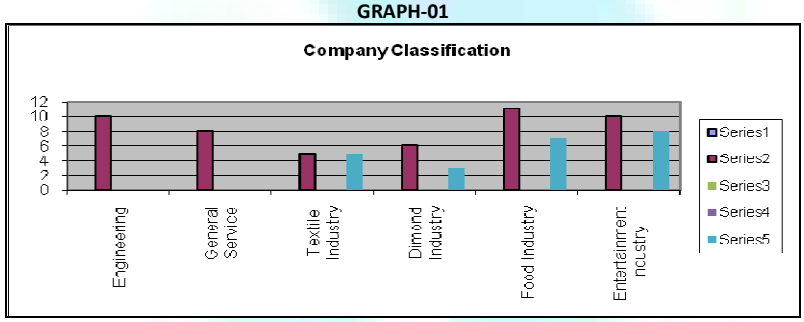
3 months	3
6 months	3
yearly	7

10.0 Retention policy

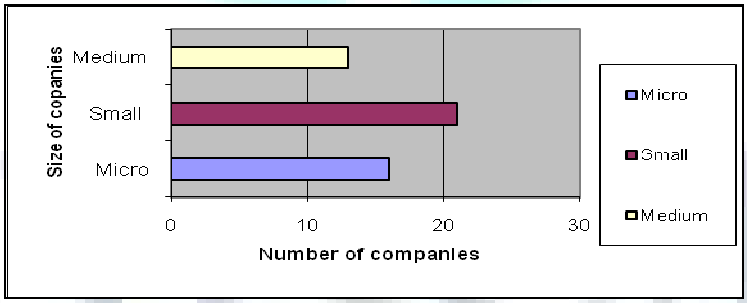
Yes	17
No	33

ANNEXURE-03 GRAPHICAL ANALYSIS

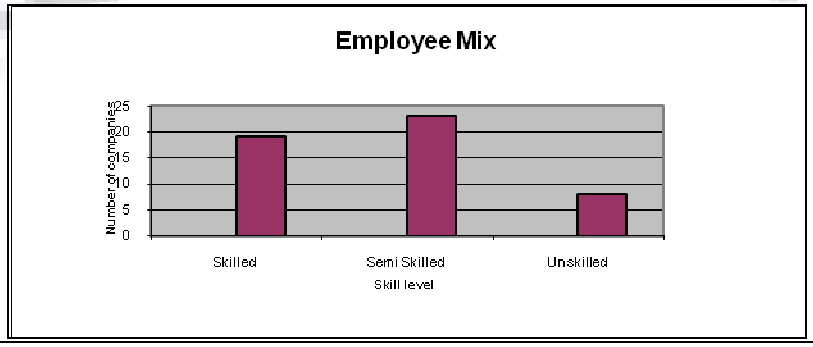
GRAPH-01



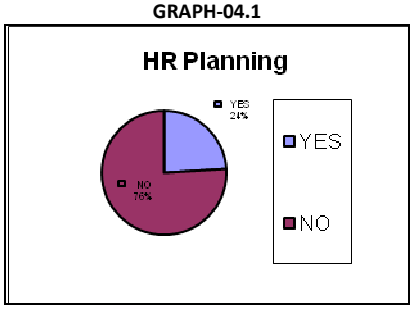
GRAPH-02



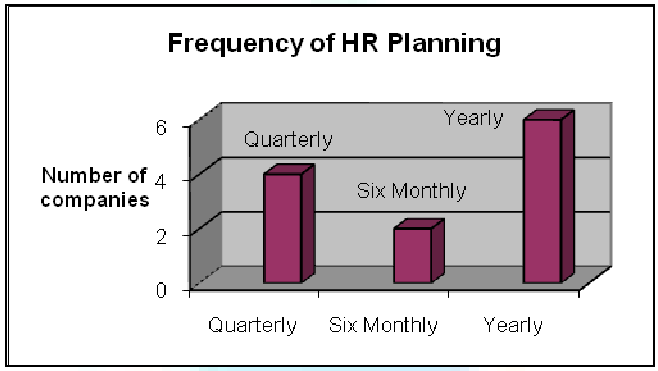
GRAPH-03



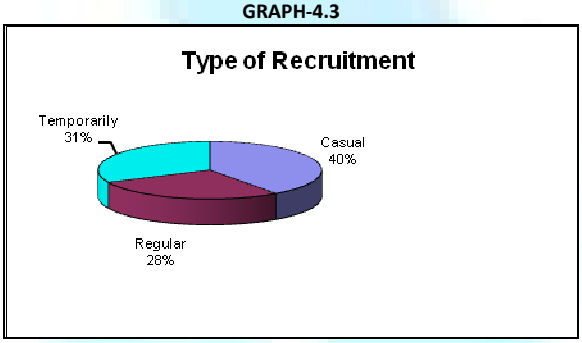
GRAPH-04.1



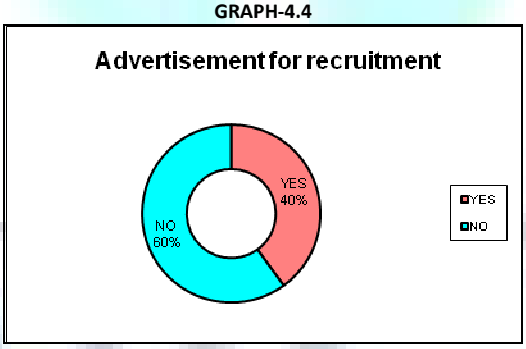
GRAPH-4.2



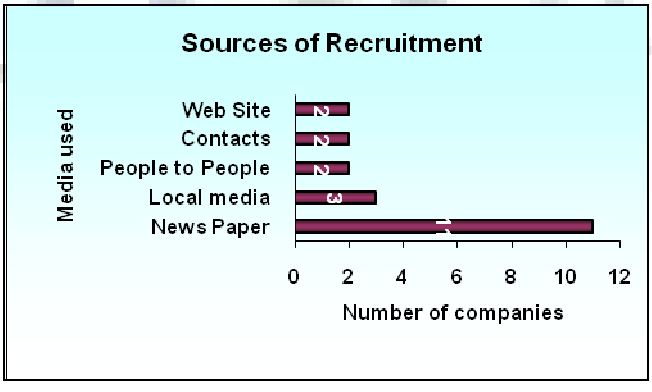
GRAPH-4.3



GRAPH-4.4



GRAPH-4.4.1



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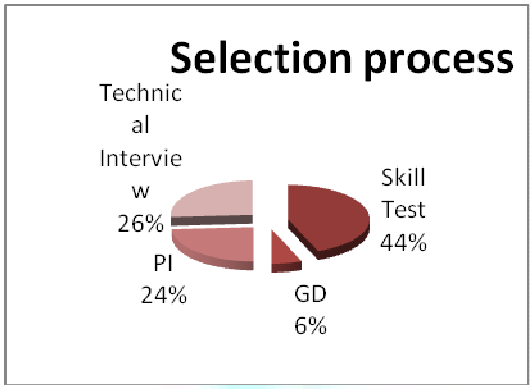

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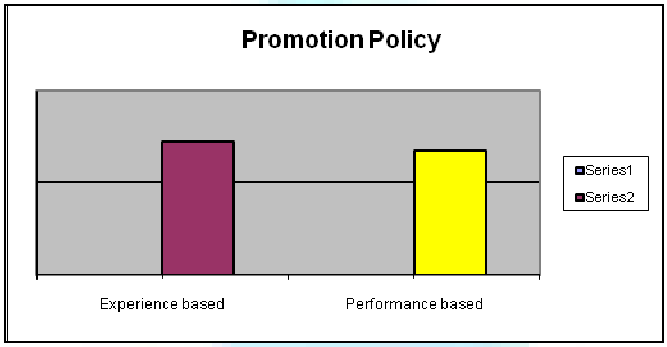

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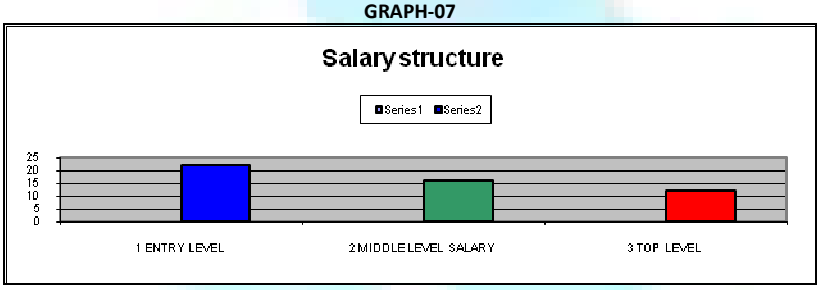
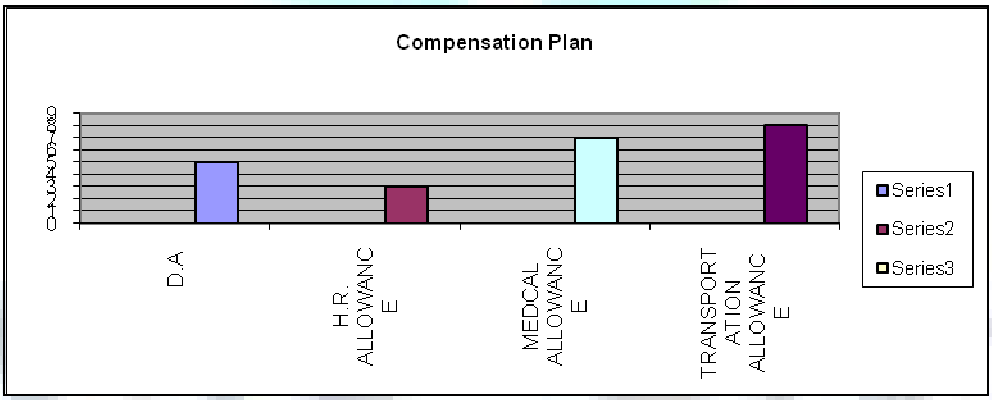


GRAPH-8



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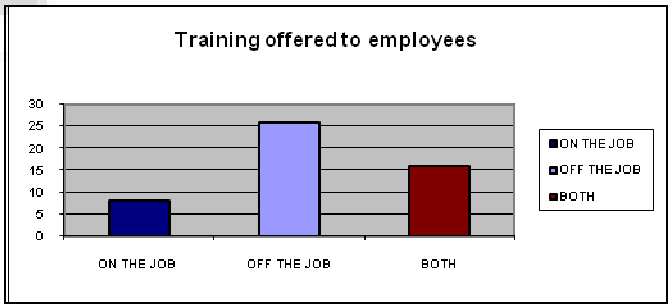
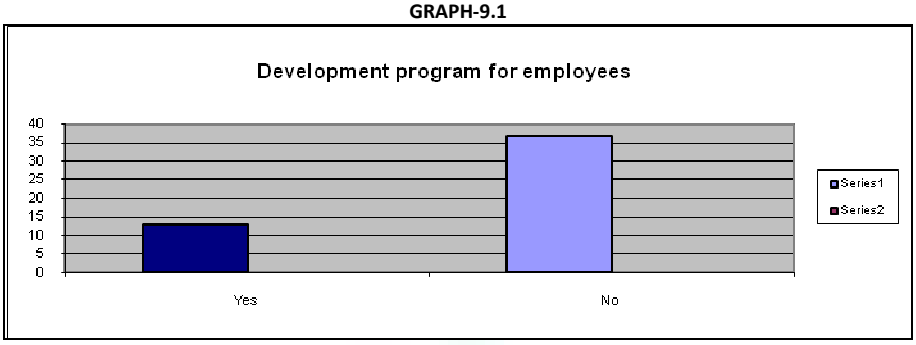
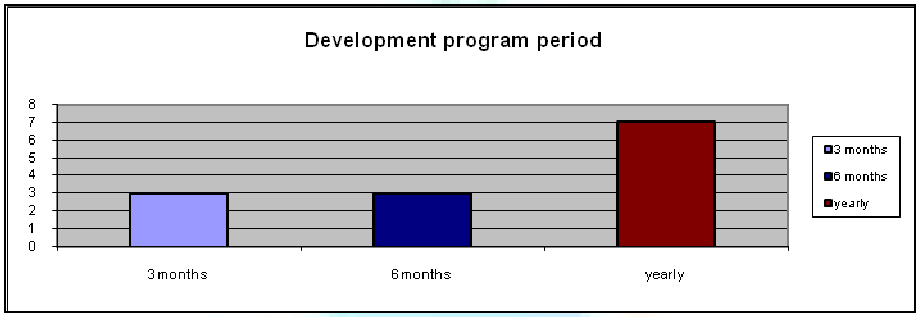


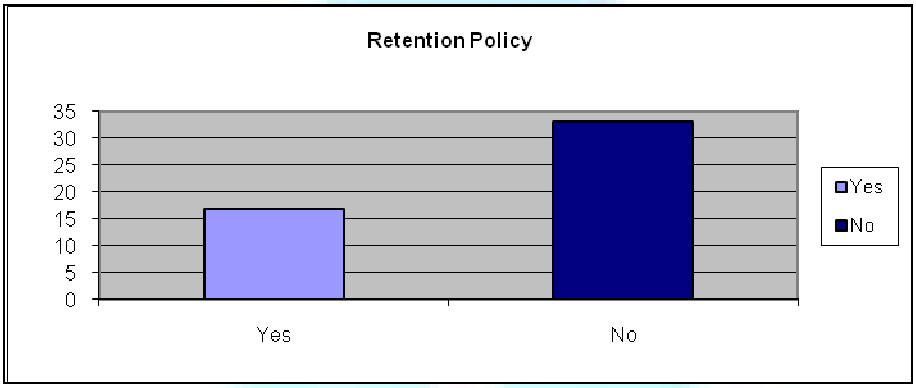
GRAPH-9.1



GRAPH-9.2



GRAPH-10



ELECTRICITY EXCHANGE IN INDIA: A STUDY OF INDIAN ENERGY EXCHANGE

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ABSTRACT

Electricity Exchange is newly introduced concept in India and also the new term in the trading market. In India electricity sector reforms are in the primary stage as far as electricity trading is concerned. India is currently undertaking the reforms of its electricity sector. Electricity sector restructuring is expected to absorb private investment, increase efficiency, promote technical growth and improve customer satisfaction as different parties compete with each other to win their market share and remain in business under Electricity Exchanges. Indian Energy Exchange (IEX) is the first Electricity Exchange in India which was established on 27th June 2008. In this paper an attempt has been made to explore the role of Indian Energy Exchange, Functions and performance of Indian Energy Exchange in Indian scenario.

KEYWORDS
Electricity Exchange, Indian Energy Exchange.

INTRODUCTION

India's electricity sector is currently undergoing reform to introduce competition to the market. The reform process began in 1990 but the progress in the subsequent years has been slow. New legislation Electricity Act, 2003 was passed and the government intends to accelerate the process of reform. Although there are many agenda for the intended reform, one of the priorities is to facilitate nationwide electricity trading at the wholesale level. Such trading activity is expected to develop an efficient wholesale electricity market in India, which is key to the success of the sector's reform. An open, transparent marketplace would reveal the inefficiencies of the current system and encourage competition among generators to improve the sector's economic efficiency. In India electricity sector reforms are in the primary stage as far as electricity trading is concerned. India is currently undertaking the reform of its electricity sector. Of course, the ultimate aim of the reform is to remove inefficiencies in various functions of the sector. However, India's electricity industry has been dominated by the public sector, and State Electricity Board is responsible for electricity supply at the state level. There are many electricity exchanges in India like Indian Energy Exchange, Power Exchange India Limited, NTPC.

In India the Indian Energy Exchange is the first exchange of electricity trading and that too automated and online. In a common talk the term power exchange is not clearly understood and of course, it is a new term in India. Here, the word exchange refers to a platform where the buyers and seller come to gather for trade. However, the exchange is not the market but it is the host to a market. Energy exchange refers to trade of energy i.e. to sold and bought.

Indian Energy Exchange is purported to be India's demutualised, first-ever national, automated and online electricity trading platform. There is a clear in-built ring-fencing between promoters, management and participants, efficient financial clearing; besides market surveillance to check collusion, unfair practices and gaming. IEX provides its participants, a day ahead, standard hourly contracts and block contracts. Hourly contracts provide considerable flexibility by allowing operators to fine-tune their needs over the delivery day.

On 6th February 2007, the CERC issued guidelines for grant of permission to set up power exchanges in India. Financial Technologies (India) Ltd responded by proposing then tentatively named 'Indian Power Exchange Ltd' and applied for permission to set it up and operate it within the parameters defined by CERC and other relevant authorities. Based on the oral hearing on July 10, the CERC accorded its approval vide its order dated 31st August, 2007. IEX thus moved from the conceptual level to firmer grounds. On 9th June 2008 CERC accorded approval to IEX to commence its operations and 27th June 2008 marked its presence in the history of Indian Power Sector as IEX.

FEATURES OF INDIAN ENERGY EXCHANGE

- Nationwide, Online and Electronic platform
- Voluntary participation.
- Neutral, Unbiased and Transparent
- Offer Day-Ahead Market(DAM)
- Exchange time-line consistent with time-line of Load Dispatch Centres
- The activities of the Exchange are carried out in accordance with the "Central Electricity Regulatory Commission (Open Access in inter-State Transmission) Regulations, 2008", dated 25.01.2008, as revised from time to time and Procedure for scheduling of collective transaction issued by the Central Transmission Utility (PGCIL) and the Bye-Laws, Rules and Business Rules of the Exchange.

VISION OF INDIAN ENERGY EXCHANGE

They envision an India where the quality of life of the common citizen, rural or urban, is not compromise as a result of power shortage. They indeed envision a power-surplus India and a committing healthy competition in the electricity market for the ultimate benefit of the consumer, domestic and industrial. They envision the arrival and consolidation of such an era through investment from all sources and use of sophisticated market mechanisms.

MISSION OF INDIAN ENERGY EXCHANGE

To accomplish their vision by providing the nation with-and enhancing the utility of-their robust, scalable and customizable electronic trading, clearing, risk management, surveillance and counter –party trade guarantee. They shall not swerve from their commitment to enable an efficient, neutral and transparent price discovery mechanism for the benefit of all stakeholders in the system including generators, distributing licensees, traders and consumers.

BENEFITS OF INDIAN ENERGY EXCHANGE

IEX provides a platform for the buyer & sellers to purchase the electricity on actual demand and supply of energy. The participants can bid for buy and sell electricity for 24 hour during the trading hours .i.e. 10.00 am-12.00 pm. The buyers & sellers can be any individual but has to trade through the member. The member of IEX can be Generators, Distribution Licensees, Independent Power Producer (IPPs), Captive Power Producers (CPPs), Merchant Power Plants (MPPs), traders and others eligible to be a member. The minimum net worth for the purpose of membership eligibility is Rs. 150 lakhs.The following are the eye catching benefits of IEX:

- **Transparency:** IEX offers a transparent, national-level platform for trading electricity in India leading to a vibrant power market.
- **Access a diversified portfolio:** IEX offers a broader choice to generators and distribution licensees at the national-level so that they can trade in smaller quantities and smaller number of hours without additional overheads.
- **Payment security:** IEX stand in as the counter-party for all trades; so participants need not be concerned about the risk-profile of the other party.
- **Minimal transaction overheads/charges:** All charges are displayed on the IEX trading terminals; so there is no room for negotiation. The cost of transactions through IEX is much less than any other mode of transaction.
- **Efficient portfolio management:** IEX enables participants to precisely adjust their portfolio as a function of consumption or generation. Participants, especially distribution licensees, are enabled to precisely manage their consumption and generation pattern.
- **Hedging UI risks:** IEX provides a tool to hedge against adverse movements in electricity prices. Thus, price risks are minimized.
- **Market development:** IEX has plans to launch a range of products to facilitate development of power markets in India in such a way that investment in capacity enhancement is encouraged.

PROMOTERS OF INDIAN ENERGY EXCHANGE

IEX is promoted by Financial Technologies (India) Ltd, and PTC India Ltd. Following is the brief descriptions of the promoters.

- **Financial Technologies India ltd:**IEX has been promoted by Financial Technologies (India) Ltd and PTC India Ltd, and its other shareholders are Reliance Energy, Tata Power Company, Lanco Infratech, Adani Enterprises, REC, and Infrastructure Development Finance Company (IDFC). Financial Technologies has a 90% share of the electronic exchange and online brokerage solutions market in India. The company's solutions power six exchanges and 750 out of the 800-odd brokerage houses operating over 1, 40,000 trading terminals on a daily basis. IEX will be the seventh exchange to be powered by Financial Technologies.
- **Power Trading Corporation Ltd:** PTC India Financial Services Limited (PFS) is an investment special purpose vehicle (SPV) of PTC India Limited (PTC) established with the mandate to provide financial services in the energy value chain. The company was incorporated during September 2006 and commenced its business from May 2007.

STAKEHOLDERS OF INDIAN ENERGY EXCHANGE

1. Adani Enterprises
2. Infrastructure Development Finance Company
3. Jindal Power Limited
4. Lanco Infratech
5. Reliance Energy
6. Rural Electrification Corporation (REC)
7. Tata Power Company

MEMBERSHIPS OF ASSOCIATIONS OF INDIAN ENERGY EXCHANGE

1. Council of Power Utilities
2. Association Power Exchanges

WHO CAN BE A MEMBER OF INDIAN ENERGY EXCHANGE?

Entities that fall within one of the following categories are eligible to apply for membership-

- Inter-State Generating Stations (ISGSs)
- Distribution Licensees
- State Generating Stations
- IPPs
- CPPs & IPPs with consent from SLDC.
- Open Access Consumers with consent from SLDC.
- Electricity traders
- Brokers / Marketers

MEMBERSHIP FEES

Member will pay admission fees at the time of registration which will be non-refundable. He is required to pay annual subscription every year before beginning of the financial year. The membership fees are:

- Admission Fee
- Initial Security Deposit
- Annual Registration Fee
- Processing Fee

PERFORMANCE OF INDIAN ENERGY EXCHANGE

IEX is purported to be India's demutualised, first-ever national, automated and online electricity trading platform. There is a clear in-built ring-fencing between promoters, management and participants, efficient financial clearing; besides market surveillance to check collusion, unfair practices and gaming. IEX provides its participants, a day ahead, standard hourly contracts and block contracts. Hourly contracts provide considerable flexibility by allowing operators to fine-tune their needs over the delivery day.

Currently 90% of electricity is sold through long-term, bilateral power purchase agreements between buyers and producers. Yet distributors rely on traders for short-term needs. The deals negotiated over telephone and other means often tend to be non-transparent and counterparty's are never sure whether they have got the best right price in the deal. IEX is a spot exchange where actual demand/supply of energy takes place and price of electricity determined on the basis of bids and offers during the transaction period. IEX is a spot exchange where actual demand/supply of energy takes place and price of electricity determined on the basis of bids and offers during the transaction period.

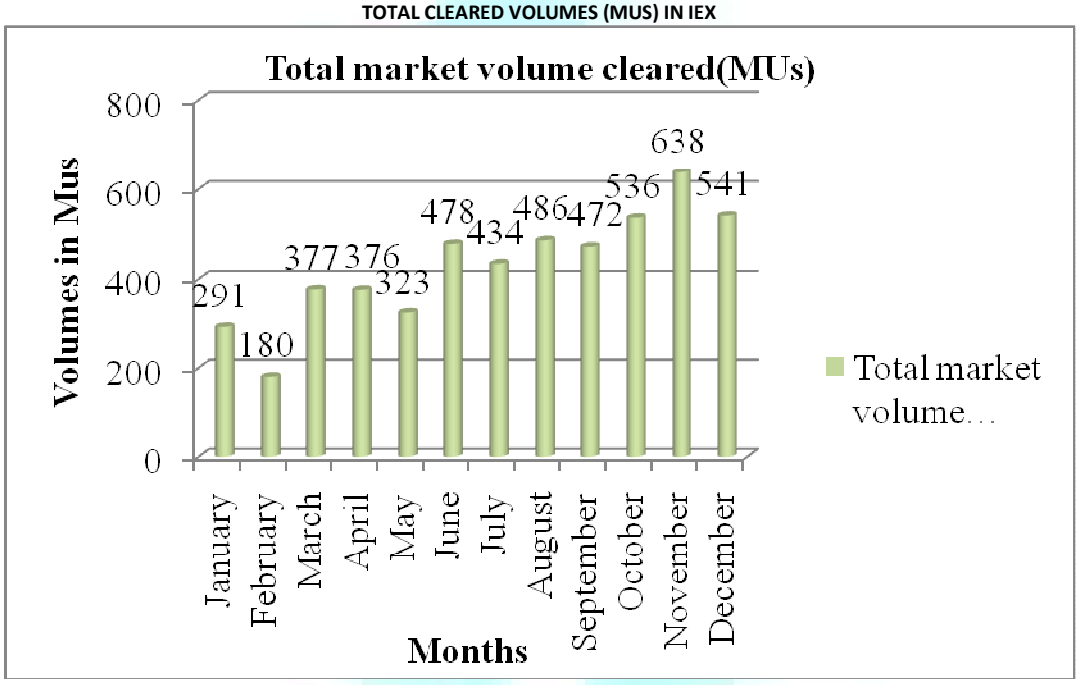
Here in this study the performance is taken into account for the year 2009.

ELECTRICITY TRANSACTED DURING THE YEAR 2009 (VOLUME WISE)

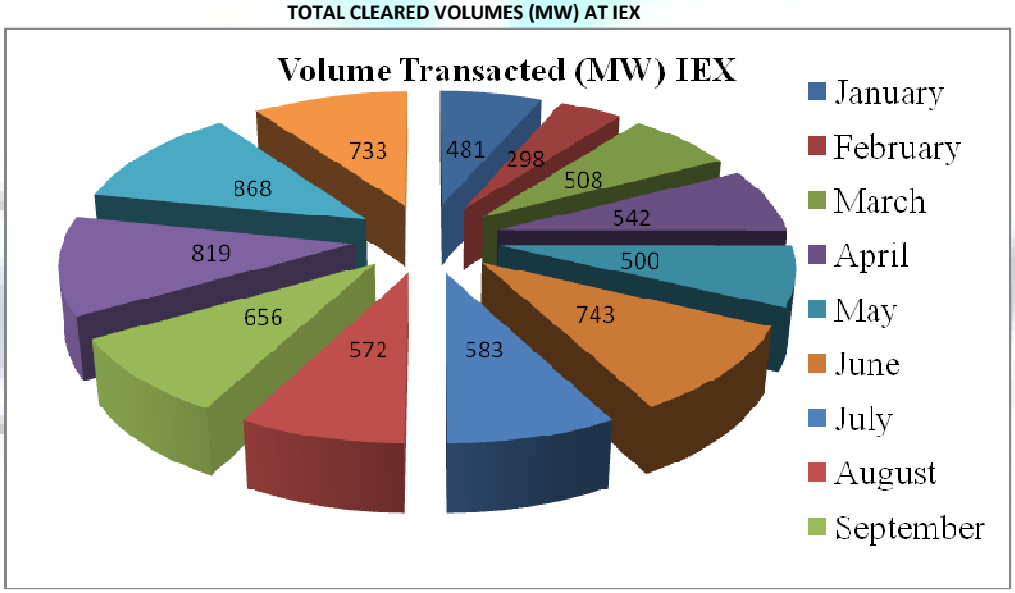
ELECTRICITY TRANSACTED DURING THE YEAR 2009

Months	Total market volume cleared(MUs)	Total Market Volume (MW)
January	291	481
February	180	298
March	377	508
April	376	542
May	323	500
June	478	743
July	434	583
August	486	572
September	472	656
October	536	819
November	638	868
December	541	733
Total	**5132**	**7303**
Average	**427.67**	**608.58**

TOTAL CLEARED VOLUMES (MUS) IN IEX



TOTAL CLEARED VOLUMES (MW) AT IEX



The given table depicts volume of electricity traded by IEX for the period of January 2009 to December 2009 in terms of MUs and MW. During the first five months of the year the fewer MUs were transacted. However, in the latter period it reached to 638 MUs in the month of November and in the same period total volume cleared in terms of MW were 868 MW. Average market volume transacted for the year 2009 was 427.67 and 608.58 in terms of MUs and MW respectively.

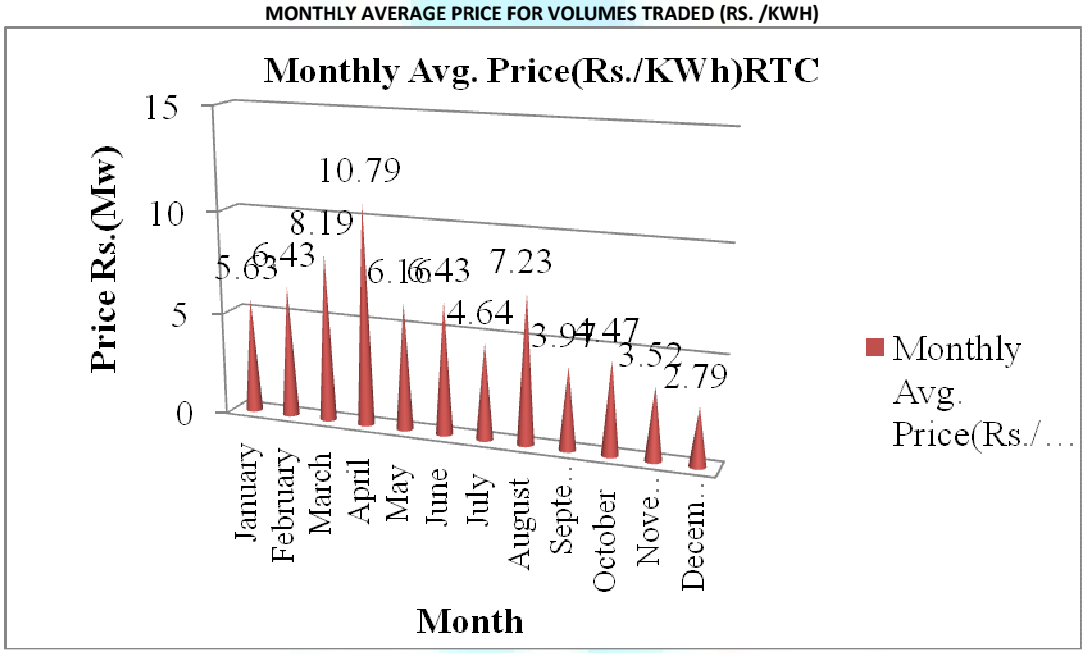
The above column chart represents the electricity traded during the year of 2009 through this exchange. The highest volume traded was in the month of November (683MUs), and the lowest was in the month of February that is 180 MUs. Overall the trading was above 400MUs except in the month of January and February. From the drawn chart 5.2 of market volume cleared (Mw), it depicts that the trading was averagely remained nearly 500Mws in 2009.However, it was the highest in the month of November with highest trade of 868Mws, followed by the month with second highest in the month of October. February has the lowest cleared volume with only 298Mws.

MONTHLY AVERAGE PRICE FOR VOLUMES TRADED (RS. /KWH)-2009

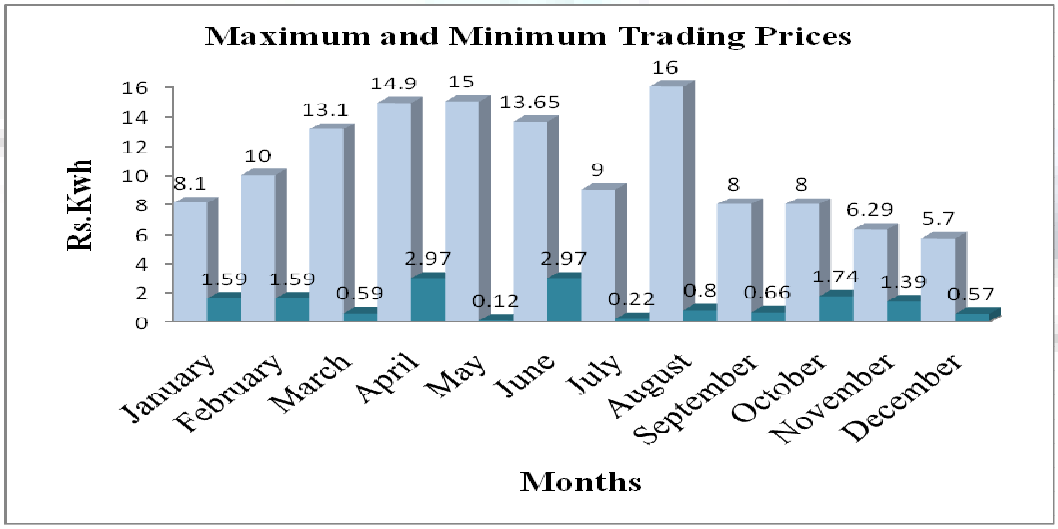
MONTHLY AVERAGE PRICE FOR VOLUMES TRADED (RS. /KWH)

Month	Monthly Avg. Price (Rs./KWh)RTC	Maximum Price (Rs./KWh)	Minimum Price (Rs./KWh)
January	5.63	8.10	1.59
February	6.43	10.00	1.59
March	8.19	13.10	0.59
April	10.79	14.9	2.97
May	6.16	15.00	0.12
June	6.43	13.65	2.97
July	4.64	9.00	0.22
August	7.23	16.00	0.80
September	3.97	8.00	0.66
October	4.47	8.00	1.74
November	3.52	6.29	1.39
December	2.79	5.7	0.57

MONTHLY AVERAGE PRICE FOR VOLUMES TRADED (RS. /KWH)



MAXIMUM AND MINIMUM TRADING PRICES AT IEX -



The table represents monthly total average price along with Maximum and Minimum price in Rs. /KWh for the selected period. From the average monthly price point of view, the month of April is having the top price. In the other months it varies from Rs.3 to Rs.8.It can be seen that April is the month where it is the peak price i.e. Rs.10.79.On the other hand the lowest price dropped up to Rs.2.79 in the month of December. The price for electricity traded fluctuates from time to

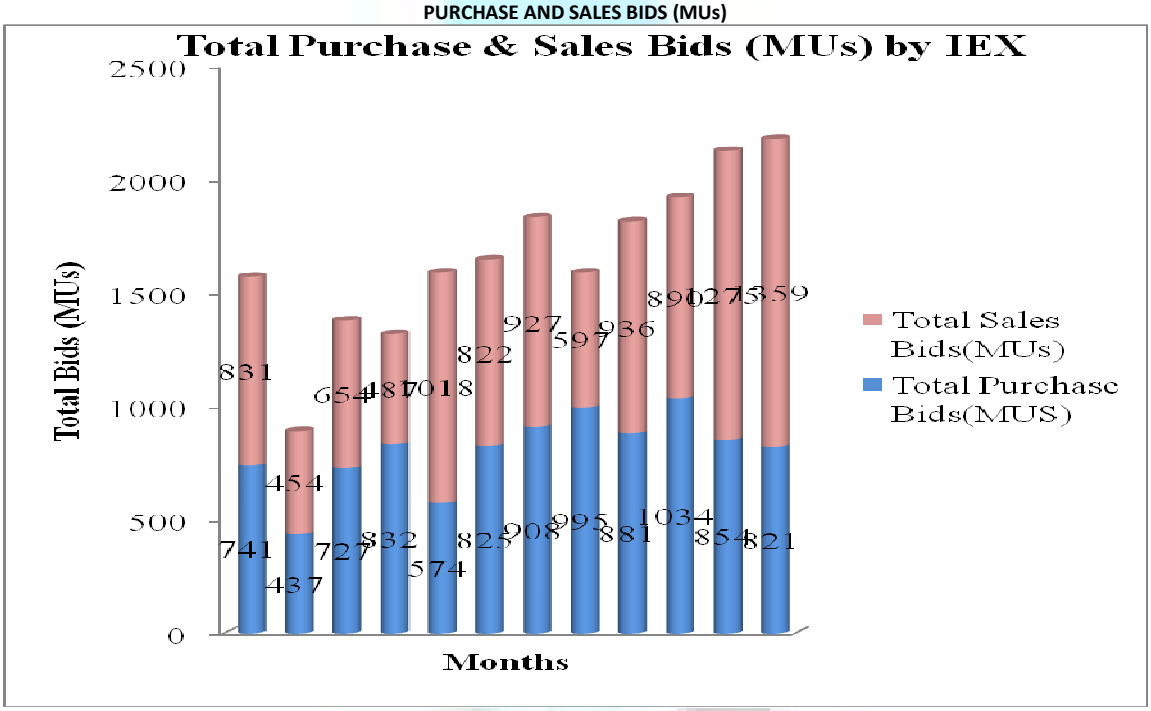
time. Generally it happens to peak price and low price of the day, month and yearly. During the year 2009 the lowest minimum price was Rs.0.57 in the month of December 2009.The maximum price reached to Rs.16.00 in the month of August. There is wide gap between the both prices since, it reaches to below rupees. Moreover, maximum is above Rs. 8 except in the month of November and December 2009.The both the information given in the table is also shown in the form of chart. Chart 5.3 is about monthly average price for volumes traded (Rs. /kWh) and chart 5.4 is for maximum and minimum trading prices at IEX -2009.

PURCHASE AND SALES BIDS (MUS)

PURCHASE AND SALES BIDS (MUs)

Months	Total Purchase Bids (MUs)	Total Sales Bids(MUs)
January	741	831
February	437	454
March	727	654
April	832	487
May	574	1018
June	825	822
July	908	927
August	995	597
September	881	936
October	1034	890
November	854	1275
December	821	1359
Total	**9629**	**10250**
Average	**802.41**	**854.16**

PURCHASE AND SALES BIDS (MUs)



The table shows the data of purchase and sales bids at IEX in MUs during the selected period i.e.12 months of the year 2009.It is the October 2009 where the purchase bids were higher than other months with 1034 MUs and on the other hand in the month of December 2009 sales bids were on the top with 1359 MUs. The sales bids were higher than purchase bids except March, April and June. Furthermore sales bids reached above 1000 for three times whereas purchase bids only for once and i.e. during the month of October 2009 which is also the highest one whole through the year. Averagely the purchase and sales bids were almost nearer to each other i.e. 802.41 and 854.16 respectively.

CONCLUSION

After approval of Central Electricity Regulatory Commission accorded approval to Indian Energy Exchange to commence its operations, it came into existence as a trading centre for electricity. Currently, Indian Energy Exchange is purported to be India's demutualised, first-ever national, automated and online electricity trading platform. There is a clear in-built ring-fencing between promoters, management and participants, efficient financial clearing; besides market surveillance to check collusion, unfair practices and gaming. Indian Energy Exchange provides its participants, a day ahead, standard hourly contracts and block contracts. Hourly contracts provide considerable flexibility by allowing operators to fine-tune their needs over the delivery day. Indian Energy Exchange provides a platform for the buyer & sellers to purchase the electricity on actual demand and supply of energy. The types of market under Indian Energy Exchange are Day Ahead Market and Term Ahead Market, again under Term Ahead Market there are Intraday Contracts, Day Ahead Contingency Contracts, Daily Contracts and Term Ahead Contracts, i.e. other than daily and weekly base.

The volume of transaction and no. of transaction in IEX is going high and high, indicate sheer success of this market. Surly this exchange will provide platform to investor to get fair value of its product with transparent policy for transaction. In long run this will help India in situation where Electricity is at short supply.

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SMALL SCALE INDUSTRIAL UNITS: PAST AND PRESENT PROBLEMS AND PROSPECTS

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ABSTRACT

This paper, after briefly presenting the current industrial situation in India and Tamil Nadu, analyses the growth and structural changes experienced and the problems faced by the selected small scale units (SSUs) in Tiruchirapalli taluk, one of the industrially prosperous taluks in Tamil Nadu state. It is found that the overall policy and physical environment has been utilized by the entrepreneurs to maximize the benefits. However, it is noticed that due to various reasons some units could flourish while others could not. Hence, it is ultimately concluded from the analysis that, in spite of all the external factors, the individual factors do play more important role in the expansion of the industrial activities.

KEYWORDS
Small Scale Industries, Tiruchirapalli.

INTRODUCTION

The small scale industrial sector has played a very important role in the socio-economic development of the country during the past 50 years. It has significantly contributed to the overall growth in terms of the Gross National Product (GDP), employment generation and exports. The performance of the SSI sector, therefore, has a direct impact on the growth overall economy. Small Scale Units (SSUs) generate production at low capital cost, mostly use indigenous raw materials, utilize local skills, widen the entrepreneurial base, facilitate balanced regional growth and prevent the migration of labour to the metropolitan areas (**Vetrivel and Iyyampillai, 2009**).

DEFINITION OF SSUs

As per Government of India Notification 1999, an industrial undertaking in which the investment in fixed assets in plant and machinery whether held on ownership terms on lease or on hire purchase does not exceed Rs. 10 million (**Uma Kapila, 2002**).
There was a drastic change in the definition of SSI in 2006. A comprehensive Act was enacted during the year 2006 named as Micro, Small, and Medium Enterprises Development Act, 2006 which brings these three segments under a single comprehensive legislation. An industrial undertaking in which the investment in plant and machinery, whether held on ownership terms or on lease or hire purchase basis does not exceed Rs. five crores for manufacturing enterprises and Rs. Two crores for service enterprises is regarded as small scale industrial undertaking (**The Micro, Small and Medium Enterprises Development Act, 2006**).

REVIEW OF LITERATURE

Vetrivel and Iyyampillai (2009) have observed that the development of Small Scale Sector occupies a powerful position in Tamil Nadu state. The study found out that there would be a rapid growth of SSI units, employment generation and value of output during the period 1991-2008, due to the support of government policies and financial assistant. **Mensah (2002)** has studied the promotional institutions and business performance of small scale industries in central region of Ghana. **Gohil (2006)** has observed the growth and development of SSI in Gujarat state. He has indicated the development of small scale units during the last decade. **Murali Krishna (2006)** has observed that the engineering industry in Visakhapatnam has a place of prominence in the process of industrial development of Visakhapatnam. **Rajendra Prasad (2004)** has observed that Bangalore has achieved a remarkable success in establishing large number of SSI units as it is equipped with required infrastructure and assistance which attracts the entrepreneurs to establish the small scale units.
Schumpeter was one of the very first economists to give a place for technological change in his analysis. The neo-classical and the classical economists with the exception of Marx were mainly concerned with price and competition; and ignored the role of technological change and more or less by-passed the problems relating to industrial structure.
The Schumpeter's (1934) concept of innovation covers the following five cases: 1. the introduction of a new good or a new quality of good; 2. the introduction of a new method of production that is not yet tested by experience; 3. the opening of a new market; 4. the conquest of a new source of supply of raw materials and 5. The carrying out of new organization of an industry, like the creation of a monopoly position or the breaking up of a monopoly position. **Thangamuthu (1973)** has analysed the structure of industries from 1951 to 1965. The pattern of the structural change in the industrial sector and the factors responsible for such structural change have been analysed in the study. The change in the industrial structure has been found to be mainly determined by the change in the pattern of capital structure in different industries. **Bhavani (2002)** has examined the ongoing changes in the business environment and the possible ways of improving competitive strength and commercial viability of Indian small-scale units in changing scenario.

GROWTH

The range in the size and growth rates of all living organisms is limited by natural forces. All of them cannot grow endlessly as they like; and, all of them die one day or the other. However, it is not true for economic structures, organizations and entities; many of them grow infinitely and endlessly, without any natural end. Over the years, some industrial units have been growing in all directions through their own growth, acquisitions, amalgamations and mergers. Many industrial units, mostly tiny and small, appear and disappear; while some reappear.

SIZE

In India, so long as the native people were poor during the British rule, the industrial units were also smaller. However, after the Independence, gradually some people could grow rich. Then, in order to multiply and magnify their asset positions, the economically powerful persons started giving pressure to the governments to change the economic policies, with a view to (a) starting large business units; and, (b) buying up the successful Public Sector Units (PSUs). With this background, liberalization and privatization measures were implemented in India.

POLICY CHANGES

It is the SSUs that generate more employment for the weaker sections, whom the government has to protect. However, the government policies of the recent years favour Large Scale Units (LSUs), which are becoming more and more capital intensive.

First, since the market is now more liberal, supportive policies for the SSUs are being withdrawn, the poor and small investors are forced to compete with the larger ones, which is disadvantageous to the SSUs.

Secondly, continuous rise in the limit of fixed capital for defining SSUs (vide Tables 1, 1a and 2), brings medium and LSUs under the umbrella of SSUs, forcing the actual SSUs to compete with the neo-SSUs (which are relatively larger) and finally it is the actual SSUs which fail.

In recent years, the government organizations have been directed the public sector units to make purchases only from the firms who can satisfy the rules and regulations of the government and of the government officials. Naturally, the LSUs could easily do this. Whereas, the poor SSUs can hardly do it; hence, the SSUs are bound to lose.

The LSUs, through their economic and political clout, easily influence the policy makers and get many tax concessions and other facilities. In this respect too, the SSUs are bound to lose.

The recent government policies permit the LSUs to expand to any extent by buying up the SSUs. Hence, the efforts made by the SSUs for innovating new product, service, market etc. are ultimately bought and utilized by the LSUs. The market economics may not find fault with this kind of forced purchase by LSUs or distress sale by SSUs, because a price has been paid. But, the LSUs are capable of distorting the market forces in favour of them and of buying forcibly the SSUs, which is ethically unfair.

These changes in policy environment have led to many structural changes in the industries, Hence this study.

GROWTH AND STRUCTURAL CHANGES OF SSUS IN INDIA AND TAMIL NADU

The following are the inferences drawn from the data available from the secondary sources for India and Tamil Nadu.

1. In India and in Tamil Nadu, the number of SSUs has increased over the period [Table 3 & 5]. This has happened in two ways: (a) addition of new small units and (b) inclusion of medium units by enhancing investment limits for defining the SSUs. Though the value of production per worker at current prices has gone up over the period, the number of workers engaged per SSU has come down [Table 4 & 5], indicating the introduction of labour saving technologies. This is true both in India and Tamil Nadu.
2. In Tamil Nadu (a) the investment per unit as well as per worker has gone up [Table 5 & 6], corroborating the replacement of labour by the capital; (b) a small change has occurred in the relative positions of different categories of SSUs between 1987-88 and 2000-01 [Table 7: Spearman Rank Correlation Coefficient between the number of SSUs in the year 1987-88 and 2000-01 is 0.816]. (c) District-wise distribution of SSUs is highly skewed showing very high concentration of SSUs in Chennai district [Table 9].

SSUs IN TIRUCHIRAPALLI DISTRICT

Tiruchirapalli district is one of the industrially prosperous districts of Tamil Nadu [vide Table 8 & 9]. Thanks to Bharath Heavy Electicals Limited, Railway workshop, Heavy Alloy Penetration Project and Small Arms Factory, hundreds of ancillary units have come up, besides the traditional industries such as wood and food processing, printing presses, automobile servicing centres etc.. The secondary data available suggest the following: (a) Number of SSUs, volume of investment and size of employment in the SSUs in the district have all gone up substantially [Table 10]. (b) Value of investment on the date of interview per unit as well as per worker has gone up [Table 11]. (c) Number of workers engaged in the SSUs, which is smaller compared to Tamil Nadu and all India averages, has increased and then it has been declining since the year 1998-99 [Table 11]. This fall may be due to the labour-saving measures adopted by the SSUs. (d) The relative positions of the industries between 1991 and 2001 have changed significantly. This is shown by a very small Spearman Rank Correlation (0.244) between the ranks scored by the industries during the years 1991 and 2001 [Table 12]. Metal and food manufacturing units have lost their relative positions while the hosiery units have gained their relative position over the period between 1991 and 2001.

SSUs IN TIRUCHIRAPPALLI TALUK

Tiruchirapalli taluk is the most prosperous one in terms of industrial activities in Tiruchirapalli district [Table 13]. In order to understand the problems faced and structural changes experienced by the SSUs, a study was made in **Tiruchirapalli taluk**[1] during 2009. For this purpose, it was proposed to collect information on the SSUs which were established during or before 1981, i.e., ten years before the economic reform measures were declared by the Government of India. There were 115 such units in the list maintained by the Inspector of Factories of Tiruchirapalli district. However, during the field work, it was found out that 25 of them had already been closed (this is indicative of mortality rate for the SSUs). Required quantity and quality of information were collected through various sources for the remaining 90 SSUs. The information available for 50 SSUs in a study conducted in the year 1981 by Thangamuthu and Iyyampillai (1982) were also utilized for understanding the earlier positions of those SSUs. In spite of the efforts made, the response of 40 units was not satisfactory. Finally, the primary data have been collected from the fifty SSI units through the well structured interview schedule. This study is completely based on census sampling method. Hence, the response for the remaining 50 units has been used for the analysis.

STRUCTURAL CHANGES IN THE SSUS OF TIRUCHIRAPALLI TALUK

Since 1981, the SSUs in the study taluk have undergone many significant changes; hence, the present day situations are substantially different from those in earlier days in several aspects. The following are the most significant differences observed in the study units:

1. PROFILE OF THE ENTREPRENEURS

Since, Tiruchirapalli taluk is populated with greater per cent of the people identified with the Hindu religion, a majority of the entrepreneurs (86 per cent) are from the Hindu religion, while eight per cent are Christians and six per cent are Muslims. By caste, a majority of them (88 per cent) belong to backward castes; 10 per cent upper castes, two per cent most backward castes and on one is from scheduled caste or scheduled tribe. Since the units are run by the entrepreneurs and in case of death of the entrepreneurs their family members, no significant difference is observed in the social profile of the entrepreneurs. In the case of length of experience, some differences are observed. Earlier when the first generation entrepreneurs entered into the business, they had longer working experience. But, many of the present entrepreneurs had entered without such a long experience, but with some formal and informal training.

2. COMPOSITION THE UNITS

In the study taluk, there were only six SSUs before 1950; one textile unit had been established in the year 1939. There were also some saw mills, rice mills and printing presses, which are now more than 70 years old. More industrial units came into existence in the taluk only during 1971-1980, particularly in the field of metal fabrication and manufacturing. The establishment of Bharath Heavy Electricals Limited (BHEL) stimulated industrial activities in this region. As a result, many ancillary units came around BHEL; many industrial estates were built; engineering colleges and industrial training institutes were started. Subsidies provided by the central and state governments too have caused the emergence of industrial units in this region. Thus over the period, there came in structural

changes and diversification in the small scale industrial sector in the study taluk (vide table 14); now the fabrication units dominate the industrial activity in this taluk.

3. OWNERSHIP

During the study period, substantial changes have taken place in the case of ownership, indicating the difficulty of running the SSUs for longer period. Change of ownership has taken place mostly among the family members after the death of the first entrepreneurs and in a few cases among the relatives. Out of the 50 units considered for the study, there was change of ownership in as many as 34 units. There is a rise in the number of units run by partners, particularly family members as partners. In case of 21 units, sons of the proprietors have taken up the units; and in two cases, due to the demise of the proprietors, the wives of the first entrepreneurs are running the business now (both are engineering units). In four units, new partners have entered after the death of some partners. In the other fourteen units, old partners have gone out and new ones have entered into the business. In case of three rice mills, after the death of the entrepreneurs, the members of their families could not run the business and hence they have leased-out the units to the entrepreneurs of their own castes. Excepting 12 per cent, a majority of the entrepreneurs have reported that they do not like their children to continue in their business, for they feel there are other better ventures than the present ones. However, the children continue their parents' business in large proportion of cases. On the whole the partnership among the family members has gone up while partnership among the friends has declined, indicating the loss of trust among the people.

4. FUNCTIONS

Since the taluk is surrounded by paddy fields, thanks to the river Kaveri, rice milling activity forms as one of the major industrial activities. There are many rice mills in this region. Out of the 50 units of the study, as many as eight units were earlier involved in milling and also sales of rice. But, now only six units continue to do both the services. In case of the other two units, a huge over-bridge constructed in the year 1997, obstructed the free flow of transport. Hence, these two units have stopped milling and restricted their business with the rice-sales alone. Other units are continuing their business. As many as eleven units have made attempts to expand and diversify their business. Seven units have expanded their business by establishing similar units and four units have diversified their business. The new business lines are manufacturing consumer items, oxygen gas cylinders and supply of cool drinks and water for industrial uses, sales of tiles and running of chit funds.

5. LOCATION

As on the date of collection of data, 32 units function in their own buildings; 13 units in rented buildings; four units in leased-in locations; and, one unit in a public building for which neither rent nor lease amount is paid. Over the period, nine units have shifted the location for various reasons. One unit has been shifted to the location where the rent is lower; one to a larger area; and, one to busier area. Three units were forced to shift their location due to the construction of an over-bridge which obstructed their business. More shifts have taken place after the year 1990. Excepting one crusher unit located in outside urban limit, all the other 49 units are located in urban limit.

6. TECHNOLOGY

This is the field where substantial changes have taken place. Particularly after 1990, almost all the units have gone for labour-saving and productivity-raising modernization process – though degree varies. Till 1990 the changes were not so significant – only four units (three saw mills and one tailoring unit) had changed the technology. Chemical industry is the one which has gone for frequent changes. The units (mostly printing presses) which are unable to go for the costly modern technology out-source the job orders coming to their units to the units with modern production processes. One leather unit has leased-in a modern machine.

Another significant change is the use of imported machines. With the modern machines, frequent changes in the designs and faster supply of finished products have become easier.

7. FINANCE

As many as 28 entrepreneurs had used solely their own funds for establishing their units; while others had depended on other sources too. But, now the trend is different. Thanks to the liberalized lending schemes introduced by the governments, the dependence on nationalized banks has increased. Introduction of newer machines and technologies has become a necessity and it has forced the entrepreneurs for going for larger investments and for different sources of funding. However, the entrepreneurs have also ploughed back the profits raised from the units for investment. The size of own funds used was Rs.33.61 lakhs per unit for the terminal year (2006-07) of the reference period. Larger proportion of this sum has gone for the purchase of machines, transports and construction of buildings. The borrowings by the saw mills and engineering units are larger compared to the printing presses and garments manufacturing units. The outstanding loan amount for a food-product unit is as much as Rs.10 lakhs.

In the fixed capital items, the land value tops the list and among the industries, the fixed capital per unit is highest among the saw mills. The Analysis of Variance shows that value of fixed capital items is significantly different; but it is not so among the SSUs (Table 15). Among the fixed capital items, land is the predominant one with Rs.18.94 lakhs per unit; next comes shed/building, plant/machineries and transport in that order.

The information on size of working capital used up for one month period before the date of collection of data was gathered (Table 16). It is found that a huge sum of money is stocked in the form of finished and semi-finished goods. This is very large in the case of engineering units, rice mills and saw mills. Next comes raw materials which work out to be Rs.5.69 lakhs per unit. This is much larger for chemical unit (Rs.23.0 lakhs) followed by saw mills (Rs.7.78 lakhs). In order to see whether there is any difference across the industries and across different working capital items, 'F' ratios have been worked out. The calculated value of 'F' ratio for the industries is 1.67 and for the working capital items is 3.22. The tabulated 'F' ratios are 2.24 and 1.94 respectively at five per cent level of significance. Hence, it is concluded that the difference in the working capital per unit among the industries is not statistically significant; while for the working capital items the difference is statistically significant.

8. WORKERS

At macro level, the number of workers employed per SSU has come down. This has also happened in some of the study units namely, printing presses, metal manufacturing units, automobile servicing units, in one saw mill and in one leather unit . However, this has increased for the remaining study units from 16.14 in the year 1990-91 to 24.0 in the year 2007. This increase is much higher in engineering units from 20.71 to 45.86 followed by food products. This has become possible, in spite of introduction of labour-saving techniques, because of the increase in orders not only from the traditional sources (BHEL in the case of engineering units) but also from new sources (demand from wind-mills in the case of fabrication units). The composition of workers has also changed over the study period. More of drivers, accountants and electricians have been recruited recently. Another significant change is in the proportion of skilled workers, which has substantially increased. Change in methods of production and introduction of modern technology have contributed to this difference. Sex-wise, the proportion of workers has changed in favour of women, that too, skilled women with formal education. Rice mills followed by tailoring units, ready-made garments unit and crushers employ more women. Metal units, saw mills and chemical units did not have women workers earlier; but now women are found in these units as clerks and accountants. Earlier there were only men managers and supervisors; but today these categories are also occupied by women.

Nativity composition of workers has also undergone noticeable changes over the study period. Workers from Kerala in metal industry and workers from Gujarat in saw mills were many earlier; but they are few now. Thanks to **transport** facilities and increase in educational levels, the workers from villages and neighbouring districts like Pudukottai, Ramanathapuram and Thanjavur have captured the jobs in the study units. Government policy is also found to have been a cause for this change. For instance, Pudukottai district was formed in the year 1974 and was announced as industrially backward district with some subsidy packages for the entrepreneurs. As a result, many SSUs were established by the entrepreneurs of Tiruchirapalli taluk in the border of Pudukottai district attracting the workers from Pudukottai district.

9. **REINVESTMENT AND ASSET FORMATION**

Ploughing back the profit within the units as well as investing the profit earned from one unit or other units and purchasing of assets are also possible and happening (Table 21). Earlier as many as seventeen units did not reinvest at all. This number has gone upto 33 units now. Majority of these units have already in the 1990s purchased new machines and technologies hence, instead of reinvesting in the units, they have purchased new assets-both movable and immovable

assets, for their personal/business use. For instance, only 34 entrepreneurs' had two wheelers, but now 45 entrepreneurs. The number of car owning entrepreneurs has also increased. Earlier this number was only two, but now 29 entrepreneurs' own cars. Some own more than one car; only one engineering unit does not have car at all. The land ownership has also increased. Earlier 12 entrepreneurs had lands (other than the unit), but now 17 entrepreneurs have got their own lands and / or plots for the construction of house. Similarly improvement is also found in the house ownership, which increased from 43 in the early 1990s to 46 in 2009. The current value of personal assets per unit appears to be higher for engineering units, printing presses, readymade garment unit.

10. ESTABLISHMENT OF OTHER UNITS

The details on establishment of other industrial units could be considered for understanding the performance and prospects of the units. Totally 11 units have established other enterprises. Of them seven in the related line (same product-three) of production and four are diversified (Table 22). One engineering unit has established another unit as back as 1975. Another engineering unit has started two units - one in 1985, for manufacturing consumer items; another in 1998 for manufacturing oxygen gas cylinders. In another case, an entrepreneur has founded a similar unit, which is now looked upon by the entrepreneur's son. One entrepreneur from engineering field has started another enterprise in a nearby district namely Thanjavur. One rice mill entrepreneur has started the business of supplying water (Thirumalai Modern Rice Mill and Thirumalai Water Service in Ariyamangalam area of Tiruchirappalli taluk). Another entrepreneur who has taken a rice mill on lease is also doing farm business. He now owns around 10 acres with a recent addition of five acres. One entrepreneur who is running a printing press also owns a chit fund which was started in the year 1990. One saw mill (Mariya saw mill), started in the year 1964, has also added another enterprises for selling the tiles used in house construction. These units are likely to attract more customers under one roof for two different products. One tailoring unit, established in 1975 by the father of the present entrepreneur, owns a larger building in main business area, where many small business units have been housed on rental basis. The rent runs in lakhs per month. A bakery (Vincent bakery) which was established in the year 1978 also owns a cool drinks manufacturing unit. The details presented above clearly indicate the extent of dynamism of the study units.

11. VIEWS ABOUT THE INDUSTRIAL PROMOTIONAL AGENCIES (IPAS)

A majority of the units have stated the service of the industrial promotional agencies as good. Recently a metal unit has got sales tax concession, while an engineering unit has got a sum of subsidy of Rs. 75,000. A printing press and an automobile unit are getting job works from state governments. In spite of these facts, as many as 18 units are not happy with the assistance provided by the IPAs (Table 23). Though District Industries Centre (DIC) is liberal in recommending the units for loans, in many cases, banks decline to give loans for various (both genuine and bogus) reasons. However, in 1991 one unit has managed to get a loan of Rs.3 lakhs through DIC and a subsidy of Rs. 50,000.

12. CLOSED UNITS

Out of 115 units looked for collection of data totally 25 units were found to have been closed and five units had changed the hands. Among them 13 are engineering units (Table 24). The reasons for closures of the units were obtained from either the entrepreneurs themselves or from their family members. The single major reason for the closure is inability to find sufficient market. The other reasons are listed in the Table 24.

CONCLUSION

All the relevant details regarding the history, functioning and future growth of the study units have been analyzed in this study to understand and explain the actual situation of industrial and entrepreneurial development in Tiruchirappalli taluk. It is found that the overall policy and physical environment has been utilized by the entrepreneurs to maximize the benefits. However, it is noticed that due to various reasons some units could flourish while others could not. Hence, it is ultimately concluded from the analysis that, in spite of all the external factors, the individual factors do play more important role in the expansion of the industrial activities. Hence, the IPAs should design, besides the existing policies, innovative programmes to boost the individual psychic capacities and capabilities and play a facilitating role rather than being a provider of benefits.

NOTE

Tiruchirapalli taluk consists of more than 65 per cent of the SSUs of Tiruchirapalli district, which comprises 4.32 per cent of the SSUs of the State namely (vide Table 1), Tamil Nadu where there are 29 districts at the time of the study. Tiruchirapalli district is formed by eight taluks.

TABLES

TABLE 1: INVESTMENT LIMITS FOR SSUs

Year	Investment Limits	Additional condition
1950	Up to Rs. 0.5 million in fixed assets	Less than 50 (100) persons with (without) power
1960	Up to Rs. 0.5 million in fixed assets	No Condition
1966	Up to Rs. 0.75 million in plant and machinery	No Condition
1975	Up to Rs. 1 million in plant and machinery	No Condition
1980	Up to Rs. 2 million in plant and machinery	No Condition
1985	Up to Rs. 3.5 million in plant and machinery	No Condition
1991	Up to Rs. 6 million in plant and machinery	No Condition
1997	Up to Rs. 30 million in plant and machinery	No Condition
1999	Up to Rs. 10 million in plant and machinery	No Condition

Source: Compiled from various sources

TABLE 1a: MSM ENTERPRISES ON THE BASIS OF INVESTMENT

Investment in Plant and Machinery Excluding Land and Buildings		
	Manufacturing Enterprises	**Service Enterprises**
Micro	Upto Rs. 25 lakhs	Upto Rs. ten lakhs
Small	More than Rs. 25 lakhs and upto Rs. five crores	More than Rs. ten lakhs and upto Rs. two crores
Medium	More than Rs. five crores and upto Rs. ten crores	More than Rs. two crores and upto Rs. five crores

Source: The Micro, Small and Medium Enterprises Development Act, 2006.

TABLE 2: INVESTMENT CEILING FOR SSUs

Type of Small Scale Industry	Investment Limit	Remarks
Small Scale Industry	Rs. 10 million	Historical cost or plant and machinery
Ancillary	Rs. 10 million	At least 50 per cent of its output should go to other industrial undertakings
Export Oriented	Rs. 2.5 million	Obligation to export 30 per cent of production
Tiny Enterprise	Rs. 0.5 million	No location limits
Service and business enterprise	Rs. 10 million	No location limits
Women Enterprise	Rs. 10 million	51 per cent equity holding by women

Source: Uma Kapila (2002), "Understanding the Problems of Indian Economy ", Academic Foundation, New Delhi, p. 376.

TABLE 3: GROWTH OF SSUs IN INDIA

Year	Total SSI Units (lakh numbers)	Fixed investment (Rs.crore)	Production (Rs. crore)		Employment (lakh persons)	Exports (Rs. crore)
			Current prices (1993-94)	Constant prices		
1990-91	67.87	93555	78802	84728	158.34	9664
1991-92	70.63 (4.07)	100351 (7.26)	80615 (2.30)	87355 (3.10)	165.99 (4.83)	13883 (43.66)
1992-93	73.51 (4.07)	109623 (9.24)	84413 (4.71)	92246 (5.60)	174.84 (5.33)	17784 (9.64)
1993-94	76.49 (4.07)	115795 (5.63)	98796 (17.04)	98796 (7.10)	182.64 (4.46)	25307 (28.10)
1994-95	79.60 (4.07)	123790 (6.90)	122154 (23.64)	108774 (10.10)	191.40 (4.79)	29068 (14.86)
1995-96	82.84 (4.07)	125750 (1.58)	147712 (20.92)	121175 (11.40)	197.93 (3.42)	36470 (25.46)
1996-97	86.21 (4.07)	130560 (3.82)	167805 (13.60)	134892 (11.32)	205.86 (4.00)	39248 (7.46)
1997-98	89.71 (4.07)	133242 (2.05)	187217 (11.57)	146262.90 (8.43)	213.16 (3.55)	44442 (13.23)
1998-99	93.36 (4.07)	135482 (1.68)	210454 (12.41)	157525.10 (7.70)	220.55 (3.46)	48979 (10.21)
1999-00	97.15 (4.07)	139982 (3.32)	233760 (11.07)	170379.20 (8.16)	229.10 (3.88)	54200 (10.66)
2000-01	101.10 (4.07)	146845 (4.90)	261297 (11.78)	184401.40 (8.23)	238.73 (4.21)	69797 (28.78)
2001-02	105.21 (4.07)	154349 (5.11)	282270 (8.03)	195613 (6.06)	249.33 (4.44)	71244 (2.07)
2002-03	109.49 (4.07)	162317 (5.16)	314850 (11.54)	306771 (8.68)	260.21 (4.36)	86013 (20.73)
2003-04	113.95 (4.07)	170219 (4.87)	364547 (15.78)	336344 (9.64)	271.42 (4.31)	97644 (13.52)
2004-05	118.59 (4.07)	178699 (4.98)	429796 (17.90)	372938 (10.88)	282.57 (4.11)	124417 (27.42)
2005-06	123.42 (4.07)	188113 (5.27)	497842 (15.83)	418884 (12.32)	294.91 (4.37)	150242 (20.76)
2006-2007	128.44 (4.07)	213219 (8.68)	585112 (17.53)	471663 (12.60)	312.52 (4.23)	177600 (24.54)
2007-2008	133.68 (4.08)	NA	695126 (18.80)	532979 (13.00)	322.28 (3.12)	NA

Source: SIDCO Annual Reports (2008-09), Ministry of SSIs, Government of India, New Delhi.

Note: NA denotes Not Available of data.

TABLE 4: NUMBER OF WORKERS AND PRODUCTION IN SSUs IN INDIA

Year	Number of workers per unit	Production per unit (Rs. in thousand at current prices)	Production per worker (Rs. in thousand at current prices)
1990-91	2.33	1161.07	497.68
1991-92	2.35	1141.37	485.66
1992-93	2.37	1148.32	482.80
1993-94	2.38	1291.62	540.93
1994-95	2.41	1534.60	638.21
1995-96	2.39	1783.10	746.28
1996-97	2.39	1946.47	815.14
1997-98	2.38	2086.91	878.29
1998-99	2.36	2254.22	954.22
1999-00	2.36	2406.18	1020.34
2000-01	2.36	2584.54	1094.53
2001-02	2.37	2682.92	1132.11
2002-03	2.38	2875.61	1209.98
2003-04	2.38	3198.97	1343.11
2004-05	2.38	3624.21	1521.03
2005-06	2.39	4033.72	1688.12
2006-07	2.43	4555.53	1872.24
2007-08	2.41	5199.93	2156.90

Source: Compiled from the sources given in Table 3.

TABLE 5: GROWTH OF SSUs IN TAMIL NADU

Year	No of Registered Units	Investment (Rs. in Crores at current prices)	Production (Rs. in Crores at current prices)	Employment (in Nos)
1991-92	1,38,404	3,210	16,747.00	11,76,700
1992-93	1,57,892	3,757	20,219.00	13,10,500
1993-94	1,78,114	4,332	24,048.00	14,25,300
1994-95	2,07,357	5,184	29,436.00	16,38,200
1995-96	2,34,409	5,977	35,161.00	18,28,600
1996-97	2,63,845	6,912	41,687.00	20,33,000
1997-98	2,95,004	7,966	48,675.00	22,50,900
1998-99	3,24,627	9,350	58,432.00	24,51,000
1999-2000	3,54,939	10,623	70,987.00	26,67,200
2000-2001	3,87,597	11,567	78,261.66	29,02,122
2006-2007	5,30,552	-	1,05,979.51	37,03,408
2007-2008	5,57,761	-	1,14,719.96	39,46,263

Source: Compiled data from various sources.

TABLE 6: NUMBER OF WORKERS, INVESTMENT AND PRODUCTION IN SSUs IN TAMIL NADU

Year	Number of Workers per unit	Investment per unit (at current prices)	Production per unit (at current prices)	Production per worker (at current prices)	Investment per worker (at current prices)
1991-92	8.50	232.62	1,213.55	142.29	27.27
1992-93	8.30	237.82	1,279.68	154.23	28.66
1993-94	8.00	243.37	1,351.01	168.76	30.40
1994-95	7.90	250.44	1,422.03	179.71	31.65
1995-96	7.80	255.43	1,502.61	192.24	32.68
1996-97	7.71	261.82	1,579.05	205.05	34.00
1997-98	7.63	270.03	1,650.00	216.24	35.39
1998-99	7.55	287.69	1,797.91	238.40	38.15
1999-2000	7.52	299.23	1,999.63	266.17	39.83
2000-2001	7.49	298.12	2,017.04	269.68	39.86
2006-2007	6.98	-	1997.53	286.16	-
2007-2008	7.08	-	2056.79	290.71	-

Source: Compiled from the sources given in Table 5.

TABLE 7: STRUCTURE OF SSIs IN TAMIL NADU AS ON 31.3.2001

Product Code No	Industrial Group	No of Units			
		1987-88	%	2000-01	%
20,21	Manufactures of food products	12,289	13.45	37,152	9.59
22	Manufactures of beverages, tobacco & tobacco products	988	1.08	2,750	0.71
23	Manufactures of cotton textiles	6,130	6.71	24,453	6.31
24	Manufactures of wool, silk, synthetic fibre textiles,	1,259	1.38	2,700	0.70
25	Jute hemp mesta textiles	120	0.13	325	0.08
26	Hosiery & garments	5,648	6.18	89,464	23.08
27	Manufactures of wood & wood products	3,176	3.48	18,221	4.70
28	Manufactures of paper & Paper products, printing	7,284	7.97	21,719	5.60
29	Manufactures of leather & leather products	1,874	2.05	10,522	2.72
30	Manufactures of rubber & plastic products	4,737	5.19	14,073	3.63
31	Manufactures of chemical & chemical products	10,340	11.32	17,453	4.50
32	Manufactures of non metallic mineral products	5,196	5.69	12,776	3.30
33	Manufactures of basic metal products	2,500	2.74	5,357	1.38
34	Manufactures of metal products and parts	10,407	11.39	21,740	5.61
35	Manufactures of machinery products (except electrical)	10,371	11.35	27,554	7.11
36	Manufactures of electrical machinery & parts	2,715	2.97	11,627	3.00
37	Manufactures of transport equipment	2,157	2.36	10,934	2.82
38	Others manufactures industries	4,156	4.55	58,777	15.17
	Total	**91,347**	**100**	**3,87,597**	**100**

Source: Industries Commissioner and Director of Industries and Commerce, Chennai.

Note: Spearman Rank Correlation Coefficient between the number of units in the year 1987-88 and 2000-01 = **0.816**

TABLE 8: RANKING OF DISTRICTS AS PER DETAILS OF SSUs IN TAMIL NADU-2003

Sl. No	District Name	Total SSI units	Unregistered SSI units	Total working SSIs	No. of closed SSI units	Employment	Gross output	Export
1	Chennai	1	1	2	1	2	2	1
2	Coimbatore	2	3	1	2	1	1	2
3	Cuddalore	14	14	18	20	15	25	21
4	Dharmpuri	9	10	9	17	11	16	6
5	Dindigul	19	17	19	7	20	17	24
6	Erode	10	12	8	5	7	8	10
7	Kancheepuram	3	2	5	9	5	5	11
8	Kanyakumari	25	25	23	13	19	9	5
9	Karur	26	26	20	11	24	11	4
10	Madurai	12	13	10	4	12	13	9
11	Nagapattinam	23	21	26	26	25	27	27
12	Namakkal	18	20	11	14	17	15	22
13	Perambalur	29	29	29	29	29	29	20
14	Puddukottai	21	22	12	12	22	22	26
15	Ramanathapurm	27	27	22	28	28	28	25
16	Salem	4	5	3	15	6	10	16
17	Sivaganga	24	24	24	19	26	24	15
18	Thanjavur	13	11	21	24	14	18	17
19	The Nilgiris	28	28	27	25	27	20	29
20	Theni	11	9	25	16	18	19	23
21	Thirunelveli	16	16	13	21	13	12	12
22	Thiruvallur	6	7	4	6	3	3	7
23	Thiruvannamalai	15	15	17	22	21	23	18
24	Thiruvarur	22	19	28	27	23	26	28
25	Thoothukudi	8	6	14	10	10	7	13
26	**Tiruchirappalli**	**5**	**4**	**15**	**18**	**9**	**14**	**8**
27	Vellore	7	8	7	8	8	6	14
28	Vilupuram	20	18	16	23	16	21	19
29	Viruthunagar	17	23	6	3	4	4	3

Source: Third All India Census of SSIs (2003), Development Commissioner (SSI), Ministry of SSIs, Government of India, New Delhi-11.

TABLE 9: DISTRICT-WISE DENSITY OF SSUs IN TAMIL NADU

Sl. No	District	No. of units	Area (in hectares)	Density of SSUs (%)
1	Vellore	17,470	5,92,018	2.95
2	Cuddalore	12,445	3,67,781	3.38
3	Dindigal	9,835	6,26,664	1.57
4	Kanchipuram	28,502	4,43,210	6.43
5	Coimbatore	39,595	7,47,079	5.30
6	Dharmapuri	10,907	9,64,103	1.13
7	Virdhunagar	18,860	4,24,323	4.45
8	Kanniya kumari	9,318	1,67,184	5.57
9	Chennai	36,682	17,098	214.54
10	Madurai	19,616	3,74,173	5.24
11	Udagamandalem	3,378	2,54,485	1.32
12	Sivagangai	5,935	4,18,900	1.42
13	Erode	21,012	8,16,191	2.57
14	Pudukkottai	8,522	4,66,379	1.83
15	Ramanathapuram	4,441	4,08,957	1.09
16	Salem	33,769	5,20,530	6.49
17	Thanjavur	8,513	3,39,657	2.51
18	Tiruchirappalli	15,354	4,40,383	3.49
19	Thirunel veli	10,612	6,82,308	1.56
20	Thoothukudi	10,386	4,59,054	2.26
21	Thiruvannamalai	4,651	6,31,205	0.74
22	Nagapattinam	5,480	2,71,583	2.01
23	Villupuram	3,605	7,22,203	0.50
24	Karur	2,949	2,89,557	1.02
25	Perambalur	988	3,69,137	0.27
26	Theni	2,204	2,88,923	0.76
27	Namakkal	3,068	3,36,335	0.91
28	Thiruvallur	6,196	3,42,243	1.81
29	Thiruvarur	1,076	2,09,709	0.51

Source: Compiled data.

$$\textbf{Density of SSI units} = \frac{\text{No. of SSI units}}{\text{Geographical area in hectare}} \times 100$$

TABLE 10: GROWTH OF SSUs IN TIRUCHIRAPPALLI DISTRICT

Year	No of units registered	Investment in current prices (Rs. in lakhs)	Employment (in thousands number)
1991-92	7,098 (14.50)	2,057.48 (53.65)	12.51 (46.32)
1992-93	8,307 (17.03)	3,876.64 (88.42)	17.57 (40.45)
1993-94	9,622 (15.83)	5,561.45 (43.46)	22.96 (30.68)
1994-95	10,987 (13.98)	8,280.75 (48.90)	29.27 (27.48)
1995-96	12,271 (11.69)	11,218.43 (35.48)	35.45 (21.11)
1996-97	13,129 (6.99)	13,647.09 (21.65)	39.43 (11.23)
1997-98	13,859 (5.56)	15,570.91 (14.10)	42.09 (6.75)
1998-99	14,627 (5.54)	17,553.41 (12.73)	43.67 (3.75)
1999-2000	15,354 (4.97)	18,841.88 (7.34)	45.48 (4.15)
2000-2001	16,155 (5.22)	20,018.45 (6.24)	47.94 (5.41)
2001-2002	16,957 (4.96)	26,268.24 (31.22)	49.76 (3.80)
2002-2003	17,985 (4.29)	37592.31 (43.11)	51.35 (3.20)
2003-2004	18,409 (4.09)	64037.11 (70.35)	52.69 (2.61)
2004-2005	19,014 (3.29)	75625.81 (18.10)	53.78 (2.07)
2005-2006	19,842 (4.36)	103732.18 (37.17)	55.01 (2.29)
2006-2007	20,576 (3.70)	170789.04 (64.64)	58.00 (5.44)
2007-2008	21,338 (3.70)	202618.20 (18.64)	66.82 (15.21)

Source: District Industries Centre, Truchirappalli-1.

Note: Figures in brackets give percentage increase over previous year.

TABLE 11: WORKERS AND INVESTMENTS IN SSUs IN TIRUCHIRAPPALLI DISTRICT

Year	Number of workers per unit	Investment per unit (Rs. in thousands at current prices)	Investment per worker (Rs. in thousands at current prices)
1991-92	1.76	28,986.76	16.45
1992-93	2.12	46,667.15	22.06
1993-94	2.39	57,799.31	24.23
1994-95	2.66	75,368.62	28.29
1995-96	2.89	91,422.30	34.61
1996-97	3.00	1,03,946.15	31.65
1997-98	3.04	1,12,352.33	37.00
1998-99	2.99	1,20,006.91	40.20
1999-00	2.96	1,22,716.43	41.43
2000-01	2.97	1,23,914.89	41.76
2001-02	2.94	1,54,910.89	52.79
2002-03	2.90	2,12,566.07	73.21
2003-04	2.86	3,47,857.62	121.53
2004-05	2.83	3,97,737.51	140.62
2005-06	2.77	5,22,790.95	188.26
2006-07	2.82	8,30,040.05	294.46
2007-08	3.13	9,49,565.10	303.23

Source: Compiled from the sources given in Table 10.

TABLE 12: INDUSTRY-WISE DISTRIBUTION OF SSUs IN TIRUCHIRAPPALLI DISTRICT IN 1991 AND 2001

Sl No	Product Code No	Industrial Group	No of Units			
			1991	%	2001	%
1	20,21	Manufactures of food products	1,052	16.94	1,881	11.64
2	22	Manufactures of beverages, tobacco & tobacco products	94	1.52	142	0.88
3	23	Manufactures of cotton textiles	561	9.05	827	5.12
4	24,25	Manufactures of wool, silk, synthetic fibre textiles, jute hemp mesta textiles	14	0.23	22	0.14
5	26	Hosiery & garments	357	5.76	3,812	23.60
6	27	Manufactures of wood products	323	5.21	707	4.38
7	28	Manufactures of paper & paper products, printing	540	8.71	900	5.57
8	29	Manufactures of leather & leather products	11	0.18	577	3.57
9	30	Manufactures of rubber & plastic products	399	6.44	873	5.40
10	31	Manufactures of chemical & chemical products	369	5.95	579	3.58
11	32	Manufactures of non metallic mineral products	516	8.32	1,091	6.75
12	33	Manufactures of basic metal products	41	0.66	107	0.66
13	34	Manufactures of metal products	692	11.16	895	5.54
14	35	Manufactures of machinery products (except electrical)	568	9.16	1,220	7.55
15	36	Manufactures of electrical machinery & parts	114	1.84	263	1.63
16	37	Manufactures of transport equipment	147	2.37	262	1.62
17	38	Manufactures of miscellaneous and manufactures industries	80	1.29	134	0.83
18	50	Drilling well industries	11	0.18	18	0.11
19	82	Real estate business	-	-	48	0.30
20	93	Manufactures of medical health service	-	-	4	0.03
21	95	Recreational and cultural services	-	-	14	0.09
22	74,96	Personal services	52	0.84	209	1.29
23	97	Repairing & services	252	4.07	1,549	9.59
24	99	Service not else where classified	6	0.10	21	0.13
		Total	**6,199**	**100**	**16,155**	**100**

Source: District Industries Centre, Truchirappalli-1.

Note: Spearman Rank Correlation Coefficient between the number of SSUs in the year 1991 and 2001 = 0.244

TABLE 13: TALUK-WISE DISTRIBUTION OF SSUs AS ON 31.12.2009 AS PER THE DETAILS AVAILABLE IN INSPECTOR OF FACTORIES

Si.No	Name of the Taluk	2 m(i)*	2 m(ii)**	85 (i)***	Total	Percentage
1.	Tiruchirappalli	292	2	-	294	51.04
2.	Manapparai	27	-	-	27	4.69
3.	Thottiam	12	-	-	12	2.08
4.	Musiri	53	-	-	53	9.20
5.	Srirangam	44	-	-	44	7.64
6.	Lalgudi	28	-	1	29	5.03
7.	Thuraiyur	31	-	-	31	5.38
8.	Manachanallur	86	-	-	86	14.93
	Total	**573**	**2**	**1**	**576**	**100**

Source: Inspector of Factories, Tiruchirappalli-23.

Note: *2 m (i) - With power using 10 persons
**2 m (ii) - Without power using 20 persons
***85 (i) - Match Industries.

TABLE 14: YEAR-WISE ESTABLISHMENT OF SSUs BY ACTIVITY IN TIRUCHIRAPPALLI TALUK

Si. No	Types of SSU	Before 1950	1951-1960	1961-1970	1971-1980	During 1981	Total	Percentage
1	Engineering Units	-	-	-	8	6	**14**	28
2	Rice Mills	2	-	-	2	4	**8**	16
3	Printing Press	2	2	1	1	-	**6**	12
4	Metal Fabrication Units	1	-	1	4	-	**6**	12
5	Saw Mills	-	1	1	1	-	**3**	6
6	Automobile Repairing Centres	-	-	1	1	1	**3**	6
7	Food Product Units	-	-	1	2	-	**3**	6
8	Tailoring Units	-	-	-	2	-	**2**	4
9	Crusher Units	-	-	-	-	2	**2**	4
10	Readymade Garment Unit	1	-	-	-	-	**1**	2
11	Chemical Industry	-	-	-	1	-	**1**	2
12	Leather Industry	-	-	-	-	1	**1**	2
	Total	**6**	**3**	**5**	**22**	**14**	**50**	
	Percentage	12	6	10	44	28		100

Source: Primary data

TABLE 15: FIXED CAPITAL PER UNIT AT 2007 PRICES (RS. IN LAKHS)

Industries	Land	Shed/ Building	Plant/ Machinery	Transport
1. Engineering units	16.07	17.29	28.21	9.20
2. Rice mills	23.75	17.50	8.25	3.00
3. Printing press	29.00	17.25	6.90	0.01
4. Metal fabrication	4.90	5.20	5.35	0.00
5. Saw mills	80.00	20.00	7.00	0.00
6. Repairing centres	1.65	1.10	1.47	1.25
7. Food product units	35.00	35.00	13.33	2.25
8. Tailoring units	50.00	50.00	1.25	0.00
9. Stone Crushers	5.00	2.50	7.50	8.00
10. Garments manufacturing	0.00	1.00	2.50	0.00
11. Chemical unit	10.00	20.00	27.00	0.00
Total	**18.94**	**15.01**	**13.83**	**5.71**

Source: Compiled from the primary data.

Note:
(i) Leather units have leased-in the fixed capital items; hence do not appear in the table above.
(ii) The calculated "F" ratios for rows and columns are 1.74 and 4.62 respectively, while the tabulated "F" ratios are 2.16 and 2.92 for rows and columns respectively. Hence, the difference between the volumes of fixed capital used up by SSUs is not statistically significant, while the same between the types of fixed capital item is statistically significant.

TABLE 16: WORKING CAPITAL PER UNIT AT 2007 PRICES (IN RS. LAKHS)

Industries	Raw material	Semi finished product	Stock of finished product	Power & Fuel charges	Wages	Rent	Telephone charges
Engineering Units	9.63	64.74	5.56	1.25	2.76	-	0.049
Rice Mills	7.57	14.75	4.31	1.46	0.94	0.06	0.006
Printing Presses	0.10	-	-	0.04	0.12	0.02	0.006
Metal Units	2.07	5.76	1.46	0.14	0.16	-	0.122
Saw Mills	7.78	10.56	8.78	0.10	0.17	0.08	0.007
Automobile Repairing Centres	-	-	-	0.02	0.30	0.03	0.007
Food Product Units	1.30	2.07	0.37	0.20	0.31	0.10	0.003
Tailoring Units	0.25	-	-	0.03	0.28	-	0.005
Crusher Units	0.46	0.98	0.18	0.15	0.23	-	0.015
Readymade Garment Unit	2.00	3.00	-	0.07	0.72	0.15	0.01
Chemical Unit	23.00	6.00	-	0.40	0.57	-	0.01
Leather Unit	5.17	8.33	-	0.30	0.27	-	0.01
Total	**5.69**	**14.75**	**3.32**	**0.65**	**1.08**	**0.06**	**0.0324**

Source: Primary data.

TABLE 17: OWN CAPITAL PER UNIT AS ON DATE OF COLLECTION OF DATA (in Rs lakhs)

Industries	Own capital	Own capital per unit	Rank
Engineering Units	713.50	50.96	2
Rice Mills	168.50	21.06	8
Printing Presses	118.80	19.80	10
Metal Units	72.25	12.04	11
Saw Mills	205.00	68.33	1
Automobile Repairing Centres	9.30	3.10	12
Food Product Units	118.00	39.33	4
Tailoring Units	108.00	54.00	3
Crusher Units	47.00	23.50	7
Readymade Garment Unit	30.00	30.00	6
Chemical Unit	70.00	70.00	5
Leather Unit	20.00	20.00	9
Total	**1680.35**	**33.61**	

Source: Primary data.

Note: These data relate to all the units in each category.

TABLE 18: DETAILS OF PARTNERSHIP

Industries	Starting stage No of partners	Partners per unit (starting stage)	Present stage No of partners	Partners per unit (at present stage)
Engineering Units	17 (7)	2.43	18 (8)	2.25
Metal Units	1 (1)	1.00	0	0
Crusher Units	1(1)	1.00	2 (1)	2.00
Rice Mills	21 (4)	5.25	21 (4)	5.25
Printing Presses	0	0	4 (1)	4.00
Saw Mills	2 (1)	2.00	4 (1)	4.00
Readymade Garments Units	0	0	2 (1)	2.00
Total	**42 (14)**	**3.00**	**51 (16)**	**3.19**

Source: Primary data.

Note: The figures in brackets denote the actual number of units in respective categories.

TABLE 19: TOTAL NUMBER OF WORKERS IN THE STUDY UNITS (STARTING STAGE)

Si. No	Type of Industries / Type of workers		Engineering Units	Rice Mills	Printing Presses	Metal Units	Saw Mills	Auto Mobile Repairing Centres	Food Product Units	Tailoring Units	Crusher Units	Readymade Garment Unit	Chemical Unit	Leather Unit	Total	
															Male	Female
1	Skilled workers	Male	129	38	29	49	18	20	17	4	4	2	5	10	325	
		Female														
2	Unskilled workers	Male	123	21	23	27	13	22	15	3	6		4	20	277	
		Female		78	7				2	10	22	8		15		142
3	Supervisor	Male	10	5		1				1				2	19	
		Female														
4	Managers	Male	6	3		1				1	2	1	1	1	16	
		Female														
5	Clerk	Male	5	1											6	
		Female														
6	Store keeper	Male	17												17	
		Female														
7	Unpaid workers	Male		2		3									5	
		Female														
	Total	**Male**	**290**	**70**	**52**	**81**	**31**	**42**	**32**	**9**	**12**	**3**	**10**	**33**	**665**	
		Female		**78**	**7**				**2**	**10**	**22**	**8**		**15**		**142**

Source: Primary data.

Note: The blank cells denote zero

TABLE 20: TOTAL NUMBER OF WORKERS IN THE STUDY UNITS (AS ON THE DATE OF COLLECTION OF DATA)

Si. No	Type of Industries / Type of workers		Engineering Units	Rice Mills	Printing Presses	Metal Units	Saw Mills	Auto Mobile Repairing Centres centres	Food Product Units	Tailoring Units	Crusher Units	Readymade Garment Unit	Chemical Unit	Leather Unit	Total	
															Male	Female
1	Skilled workers	Male	208	37	19	27	9	13	22	7	3	2	4	2	353	
		Female								15		5	1			21
2	Unskilled workers	Male	204	14	10	14	7	7	9	5	3	4	16	10	303	
		Female		76	6		1		19	10	13	20		7		152
3	Supervisor	Male	67	5		2		1				1	2	2	80	
		Female			1	1										2
4	Managers	Male	28	3		1				1	2	1	1		37	
		Female							1							1
5	Clerk	Male	23	1								2			26	
		Female	2				2									4
6	Driver	Male	5	1											6	
		Female														
7	Accountant	Male	4												4	
		Female							1							1
8	Store keeper	Male	36												36	
		Female														
9	Semi killed workers	Male	55												55	
		Female														
10	Electricians	Male	5												5	
		Female														
11	Unpaid workers	Male	5	3		5		2	1						16	
		Female							1				1			2
	Total	**Male**	**640**	**64**	**29**	**49**	**16**	**23**	**32**	**13**	**8**	**10**	**23**	**14**	**921**	
		Female	**2**	**76**	**7**	**1**	**3**		**22**	**25**	**13**	**25**	**2**	**7**		**183**

Sources: Primary data.

Note: The blank cells denote zero

TABLE 21: DISTRIBUTION OF SSUS BY LAND, VEHICLE AND HOUSE OWNERSHIP

Type of Industries / Assets details	Period	Engineering Units	Rice Mills	Printing Presses	Metal Units	Saw Mills	Auto Mobile Repairing Centres	Food Product Units	Tailoring Units	Crusher Units	Readymade Garment Unit	Chemical Unit	Leather Unit	Total Then	Total Now
Car	**Then**	2	-	-	-	-	-	-	-	-	-	-	-	**2**	
	Now	13	1	2	1	3	1	3		2	1	1	1		**29**
Two wheeler	**Then**	13	4	2	4	3	1	3		2	-	1	-	**34**	
	Now	14	7	6	6	3	2	3	1	1	1	1	1		**45**
Land / Plot	**Then**	2	4	1	4	-	-	1	-	-	-	-	-	**12**	
	Now	4	5	-	3	1	-	2	-	1	1	-	-		**17**
House	**Then**	14	6	5	4	3	2	3	1	2	1	1	1	**43**	
	Now	14	7	5	5	3	3	3	1	2	1	1	1		**46**

Source: Primary data.

TABLE 22: DETAILS OF OTHER ENTERPRISES / BUSINESS ACTIVITIES ESTABLISHED BY THE RESPONDENT ENTREPRENEURS

Details	Engineering Units	Rice Mills	Printing Presses	Saw Mills	Food Product Units	Tailoring Units	Total
Product line							
Related product	3	1	-	1	2	-	7
Not related product	1	1	1	-	-	1	4
Total	**4**	**2**	**1**	**1**	**2**	**1**	**11**
Area							
Same place	3	-	-	1	2	1	7
Within the district	-	2	1	-	-	-	3
Within the state	1	-	-	-	-	-	1
Total	**4**	**2**	**1**	**1**	**2**	**1**	**11**
Year of starting							
1971-1980	1	-	-	-	2	1	4
1981-1990	1	1	1	1	-	-	4
1991-2000	1	-	-	-	-	-	1
2001-2004	1	1	-	-	-	-	2
Total	**4**	**2**	**1**	**1**	**2**	**1**	**11**

Source: Primary data.

TABLE 23: OPINION OF THE ENTREPRENEURS ABOUT THE SERVICES OF INDUSTRIAL PROMOTIONAL AGENCIES (IPAs)

Type industries	Not good	Good	Excellent	No idea	Total
Engineering Units	3	10	1	-	14
Rice Mills	3	4	-	1	8
Printing Presses	4	2	-	-	6
Metal Units	2	2	1	1	6
Saw Mills	2	1	-	-	3
Automobile Repairing Centres	2	-	-	1	3
Food Product Units	-	3	-	-	3
Tailoring Units	-	1	1	-	2
Crusher Units	-	2	-	-	2
Readymade Garment Unit	-	1	-	-	1
Chemical Unit	1	-	-	-	1
Leather Unit	1	-	-	-	1
Total	**18**	**26**	**3**	**3**	**50**
Percentage	**36**	**52**	**6**	**6**	**100**

Source: Primary data.

TABLE 24: CLOSURE OF SSUS BY INDUSTRY AND REASON IN THE SAMPLE

Type of Industries / Factors	Engineering units	Rice mills	Saw mills	Auto mobile Repairing centres	Dhal mills	Oil mills	Tobbacco units	Parcel units	Clinical laboratory units	Other industrial units	Total	%
Marketing problem	5	1	-	-	1	1	-	1	1	-	**10**	**40**
Finance problem	1	-	-	1	-	-	-	-	-	-	**2**	**8**
Partnership problem	2	-	-	-	-	-	-	-	-	-	**2**	**8**
Owner dead	1	-	-	-	-	-	-	-	-	1	**2**	**8**
Debt problem	-	-	1	-	-	-	-	-	-	-	**1**	**4**
Over bridge construction problem	2	-	-	-	-	-	-	-	-	-	**2**	**8**
Technical problem	-	-	-	-	-	-		-	-	1	**1**	**4**
Power problem	1	-	-	-	-	-	-	-	-	-	**1**	**4**
Price problem	1	-	-	-	-	-	-	-	-	-	**1**	**4**
Over loss	-	1	-	-	-	-	-	-	-	-	**1**	**4**
Competition problem	-	-	-	1	-	-	-	-	-	-	**1**	**4**
Government policies problem	-	-	-	-	-	-	1	-	-	-	**1**	**4**
Total	**13**	**2**	**1**	**2**	**1**	**1**	**1**	**1**	**1**	**2**	**25**	
%	**52**	**8**	**8**	**4**	**4**	**4**	**4**	**4**	**4**	**8**		**100**

Source: Primary data.

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'MEDICAL TOURISM' – THE NEW TREND OF REVENUE GENERATION: IMPACTS ON INDIAN ECONOMY AND THE GLOBAL MARKET RESPONSE

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ABSTRACT

Medical Tourism in the global context is at the rising trend in the third world because of affordability, cost, facility and expertise of some countries from the first world and also from the third world countries too. Third world countries like Cuba, Argentine, Mexico, Hungary, South Africa, Thailand, Singapore and India are the major players in the world. Developed world look for cost savings for treatment outside the country, developing countries are looking for expertise and the cost factors for considering a neighbouring country. Health tourism, in the Indian context is at par with other industry in the domestic sector. Medical tourism has many implications and impacts on the national economy, professional ethics, and medical practices and on the local economy. Non availability of the regulations in this sector in India leads to many rackets, scams and news making events. With adequate regulatory measures this sector has ample tourism business to contribute to the national economy and regional employment in direct and indirect terms. India can grow as the Asian tiger in medical treatment with the available support and the resources with expertise. Only in this decade the concept has taken corporate medical business, catering to Africa, Middle East, Europe, Asian neighbours and America. Out of many rising tourism concepts this has shown the power punch in the business trend, by making India a favoured treatment destination. Impacts, problems, issues, and opportunities of the medical tourism are examined in this article.

KEY WORDS

Incredible India, Health Sector, Corporate Hospitals, Public Healthcare, Foreign Patients.

TOURISM & RISING TREND OF MEDICAL TOURISM- INDIA

Tourism can indeed be one of the most powerful engines for economic growth, income redistribution, employment generation and social integration. Tourism can alleviate poverty and underdevelopment and generate employment in backward, isolated and remote areas. Incredible India campaign has lived up to its promises of engaging and catching the imagination of domestic and inbound tourists. The number of foreign tourists arrival has gone up from 2.38 million in the year to 5.58 million in 2010, while number of domestic tourists has gone up from 269.60 million in 2002 to 650.04 million in 2009. The incredible India campaign is largely responsible for this increase along with the growing economic trends of India in macro and micro level. India has tremendous potential to host the maximum number of visitors in the world. (TNN, 2011) The country has excellent tourist products and now there are efforts to make them world class facilities. Focus is on development of state-of-art infrastructure, accompanied by world class services. Of late there has been a very positive change in the attitude of service providers and they have become customer friendly. For the country to offer world class tourist products technology and innovations are key drivers. The major challenges are lack of proper transport and accommodation in and around several lesser known places but popular destinations. These are destinations which have the potential of drawing a large number of domestic as well as foreign tourists. Tour operators and destination management companies are developing strong partnership with counterparts abroad for increasing inbound tourism to India. Government is also taking steps to position India as 'value for money' destinations among domestic tourists. With the cultural shift taking place in the Indian tourism landscape, families are are opting for shorter but more frequent holidays both within and outside the country. This shift is taking place worldwide and people are opting for shorter and more frequent holidays.

Tourism of India has potentialities which needs innovative destination design and strategies to incorporate in to the tourist map. Out several options available for the nation, a potentiality of 'Religion Tourism' of Buddhism needs strong exploration to cater to the rich Buddhist countries especially Asia-Pacific Region that

includes Japan, South Korea, China, Thailand, Sri Lanka, and other Asian countries. As compared to Saudi Arabia which generates every year to a tune of US $ 29 billion, India comparatively with appropriate facilities can generate to a tune of 44 billion US $ every year with selected Buddhist sites of high religious importance. Secondly, the North-East part of India has the world's finest potentiality of nature and mountain tourism endowed with several extra ordinary advantages of the Himalayan nature. Insurgency and lawless public practices in this region are acting as the biggest hurdle for tourism development of the North-East. Perhaps the argument of many Indians are to be taken for granted, with adequate infrastructure and facilities this part of India can replace the Scotland and Switzerland like nature tourism sites due to its pristine beauty and nature. This part will attract the European and other international tourists with the advantage of more value for money i.e. economy in tourists spending. Smaller but contributing tourism to national economy are Education tourism, Medical Tourism, Rural Tourism, Island Tourism etc. Many such new tourism concepts are springing up with business validations for the new destinations and horizons in India. Every tourism concepts are related to economic upliftments and new product developments. Micro ideas are taking up full fledge shape of business through conventional tourism and unconventional tourism. Medical Tourism's glorified version started ten years before as a private initiative and today is a part of the India's macro tourism facet.

Rampant and deep-rooted underdevelopment of the many (persistently large number) admist the presence of plenty of a few (though substantial and growing of late). Unequal access to (and often absence of) health care is familiar variant, yet nonetheless more tragic because of it, of the iniquitous dualism that even after six decades of 'development' still characterizes social and economic structures in India. (Nair. 2009) The more novel phenomenon of the citizens of the 'First World', rich and developed nations, choosing to undergo medical procedures or treatment in a 'Third World Country' such as India, albeit in multi specialty hospitals. These well equipped hospitals with state of the art equipment, often staffed with doctors and nurses with substantial work experience acquired from working from hospitals abroad, boast and deliver medical care comparable or superior to what is available in most of the developed country hospitals at a fraction of the cost. These hospitals advertise and offer 'medical package tour' that not only include medical operations and procedures but also travel to and from the hospital, stay and recuperation at 'five star facilities' to attract the attention and custom of the first world patients as well as well-heeled domestic ones. This phenomenon is commonly termed health or medical tourism. (Nair, 2009) As an aside on terminology, for our current purposes we shall treat health and medical tourism as similar though in its proper sense they may differ in the domain of activities that each encompasses. For instance medical tourism may sometimes be narrowly defined as involving only a subset of those activities limited to the medical procedural-pharmaceutical complex while health tourism may sometimes be more broadly understood to involve activities that include 'alternative' medical treatments, therapies, lifestyle and health resorts etc. The distinction is sometimes useful as and when we focus on issues related to 'medical insurance' and the 'health care industry' and at other times less useful when we try to discern the larger social and economic impact of health or medical tourism. In one sense medical tourism is hardly a new phenomenon. For long, people have traveled to other places in search of better medical treatment. The presence of reputable medical services has often acted as a spur to local economic activity either directly or as a spin off. Look at the hive of small business bustling around the location of any medium large hospital to realize the truth of this statement. You not only find pharmaceutical laboratories and medical supply stores but also number of eateries, hotels, lodges, hotels, banks, general stores and transportation hubs. India has also for many decades now served as a destination for those seeking better medical treatment or facilities within the SAARC and West Asia region. In general, most Indians themselves are likely to be medical tourists at some level determined primarily by their disposable income. Depending on their economic circumstances Indians are no less likely to travel long distances, even abroad, seeking better medical treatment as the experiences of many politicians and film stars can duly attest. Having established that medical tourism itself is not a new thing, even in India, it is still important to point out what is new about the latest manifestation. In a nutshell what differentiates the Indian medical tourist is the focus on not 'better' treatment but on 'cheaper' treatment. What prompts the global medical tourist, for example the American patient, to fly half way around the globe to a hospital in India is better but the costs of standardized medical and surgical procedures in India is far less.

India's record compares poorly with that of Japan, China and United States which have TFRs (Total Fertility Rate) of 1.3, 1.7, and 2.1, respectively. As per population projections, the population of India in the year 2025 will be 143.1 crore as compared to 145.3 crore of China.

TABLE 1: HEALTH INDICATOR OF SELECT COUNTRIES

Country	GDP per capita PPP US $	Infant Mortality Rate (IMR) (Per 1,000 Live Births	Life Expectancy at Birth M/f (in years) 2009	Maternal Mortality Ratio (MMR) (per 1,000 live births 2005	TFR (Total fertility rate) 2007
india*	2753	53	62.6/64.2	254	2.6
China	5383	19	71.6/75.1	45	1.7
japan	33632	3	79.4/86.5	6	1.3
USA	45592	7	77.1/81.6	11	2.1
indonesia	3712	25	69.2/73.2	420	2.2
vietnam	2600	13	72.6/76.6	150	2.2
bangaladesh	1241	47	65.5/67.7	570	2.9
pakistan	2496	73	66.5/76.2	320	3.5
sri lanka	4243	17	70.6/78.1	58	1.9

Source : * India- Registrar General of India, Govt. of India (GOI) (SRS 2008) and abridged life tables 2002-06 (2008); - 'State of World Population' (2009) and 'State of the World Children' (2009). GDP per capita – HDR, 2009.

The table above clearly indicates the national medical and health care facilities and India's health care economic indicator. This clearly justifies the health care industry in its new proposition of medical tourism to the world market of services.

MEDICAL TOURISM & GOVERNMENT POLICIES

India has emerged as a significant destination for treatment and tourism is not a new story. The country offers great value for money in terms of medical treatment for both visitors from developed countries as well as developing countries. India offers treatment at between half and one-third the cost of similar treatments in neighbouring medical tourism hotspots such as Singapore and Thailand. And that is why some intrepid patients started flocking to India almost a decade ago in search of treatment and cure. India has an edge over South-East Asian countries. Singapore is two to three times more expensive than India; Thailand is 50-80 percent more expensive, while Malaysia is not a strong player right now. As an industry, medical tourism in India has always suffered from official apathy- and it continues to do so. (Tondon, 2011) The problem is that it falls between three ministries – all of which look the business with a degree of suspicion. The tourism ministry in India hasn't really figured out any plan for this niche. The foreign ministry issues visas to medical travelers but wants to have nothing to do with the sector otherwise. And the health ministry has enough domestic issues to sort out without getting in to the complexities of attracting medical tourists. To a large extent, therefore, travelers in search of treatment in India came only because they had spent a considerable amount of time researching the destination and its facilities on their own and shown a degree of initiative. In contrast, in countries such as Thailand and Singapore, the government went out of their way to attract medical travelers after realizing the revenue potential. Visas are becoming a nuisance; if our basics are not in place, how can we talk of beating Thailand and Singapore, which give visa on arrival? The complexity of the medical visa, given once the patient gets in touch with the hospital and his case reviewed. Another shortcoming is that you cannot re-enter the country 60 days after you exit post operation or cure. This hinders the post operative care or reconciliation. Over the past few years, the medical tourism story has changed dramatically in India. Not because the government has figured out the solution. But purely because of private enterprise – with a few corporate hospitals, chemists, freelance agents all working in tandem to build a thriving ecosystem that educates, facilitates and ferries medical tourists from across the world. Last year, this ecosystem was responsible for about 600, 000 patients

travelling to India and spending INR 4,500 crore in getting treated here as per the industry statistics. Corporate hospitals such as Apollo, Fortis hospital and Max as well as business associations estimate that the business is growing by 40 percent year-on-year. In the process it is not only providing good revenues and profits to hospitals, but also giving rise to employment opportunities for a host of people connected peripherally with the business.

CORPORATE HOSPITAL PLAYERS – FORTIS, MAX AND APOLLO & THE FACET OF GLOBALISATION OF MEDICAL TOURISM

Fortis chain (29 hospitals in 11 cities) armed with high powered marketing professionals. Executives of Fortis by travelling to the far ends of Africa and Middle East, and turned it into a thriving business growing at a scorching pace. Fortis decided to take the business seriously. A team was recruited and they funded out to the major cities of the geographies with most potential – Africa and Middle East – to tie up with local doctors, set up facilitation centers, and drum up business. From a turnover of INR 9 crore in 2008, it has a possibility of closing INR 100 crore in 2011, which will be 10 percent of the entire business of Fortis. Africa is the most fertile market for the group given the decrepit medical facilities in the continent. In Europe the medical costs are sky-high and the waiting list is very long for African patients. The trouble turn spots of Afghanistan and Iraq are also great places for making a sales pitch as the top executives of the Fortis hospital executives believe and argue. (Tondon, 2011)

Max has seen a 500 percent growth in medical tourist arrivals over the past three years, in 2008 it received close to 600-700 international patients, the number touched 4,000-4,500 in 2011 (in-patients only, out patients would be close to 20,000). The international cell accounts for 20 percent of the business for the hospital. For Max the bulk of the patient inflow is from South Asia, Middle East and Africa. The developed world – North America and Europe – accounts for barely 5 percent of the Max's international patients.

After treating 60,000 patients (both in-patient and out-patients) overseas patients in 2010, the Apollo group claims to have the biggest share of the medical tourism pie in the country. The group generated the revenue of INR 350 crores last year. Apollo hospitals in different cities have loyal clientele from different geographies. Apollo Chennai attracts patients from Sri Lanka and Canada, and some from Bangladesh as well. Apollo in Ahmadabad gets a lot of traffic from U.K. The Delhi Apollo gets most of its patients from Africa and Middle East, while Kolkata gets the bulk of the Bangaladeshi patients. Not a day goes by without a flight from Sri Lanka to Chennai carrying one patient from Sri Lanka, same for Apollo Kolkata with a Bangladesh patient. Special initiatives at Apollo Hospitals with the Apollo Munich Health Insurance services are expected to enhance the business to new heights. Another estimation of the industry justifies the large potential market from Commonwealth of Independent States (CIS) the former Soviet Union.

Compared to the countries like UK or the US, procedure like heart bypass surgery or angioplasty comes at a fraction of the cost in India, even though the quality of doctors and medical equipment is comparable to the best in the world. A heart bypass surgery in India costs USD 6,500, while in the US it costs between USD 30,000 and USD 80,000. The great emphasis placed on keeping costs down makes medical tourism part and parcel of the process of globalization. Once we recognize that health care is a service industry just like the 'call centers' in India that fulfills the needs of the various customers in the United States and other first world countries much of the radicalism of medical tourism seems very ordinary and common place. It is not different from business process outsourcing (BPO) model that underpins the rapidly growing information technology (IT) sector in India. The same cost cutting impulses that led multinational corporations to off-shore and outsource business process and production to other countries, also compels private and national health insurers to encourage their customers to consider undertaking certain medical procedures in India. According to the non-profit Kaiser Family Foundation, a leading health policy foundation in the US – expenditure in the US health care surpassed $ 2 trillion in 2006 and accounted for 16 percent of the nation's Gross Domestic Product (GDP). Total health care expenditures grew at an annual rate of 6.7 in 2006, a slower rate than recent years, yet still outpacing inflation and growth in national income.(SWP-2009,UNFPA) It is therefore no wonder that health care providers actively exploring facilities in India to reduce costs. Other adjacent countries have opened the doorsteps for the Americans are Mexico and Cuba. South Africa is a very large player in receiving medical tourists from US and UK. Medical costs have been a national concern for US as was observed from the speeches of American president Mr. Obama in 2011.

Te years ago, medical tourism was hardly large enough to be noticed in India. Today more than 250, 000 patients per year visit Singapore alone – nearly half of them from the Middle East. This year approximately half a million foreign patients will travel to India for medical care, where as in 2002 it was only 150,000. In monetary terms experts estimates that medical tourism could bring India as much as $ 2.2 billion per year by 2012. Argentina, Costa Rica, Cuba, Jamaica, South Africa, Jordan, Malaysia, Hungary, Latvia and Estonia all have broken in to the lucrative market as well, or are trying to do so, and more countries to join this list every year. Medical tourism will be particularly attractive in US, where an estimated 43 million people are without health insurance and 120 million without dental coverage- these numbers that are both likely to grow. Patients in Britain, Canada and other countries with long waiting lists for major surgery will be just as eager to take advantage of foreign health care options. India is relatively newer to medical tourism but quickly catching up with Thailand, by the recent estimates the number of foreign patients is growing 30 percent each year. India has top-notch centers for heart surgery, hip and knee replacement, cosmetic surgery, dentistry, bone marrow transplants and cancer therapy, and virtually all of India's clinics are equipped with the latest electronic and medical diagnostic equipment.

For North America patients, Costa Rica is the chosen destination for inexpensive high quality medical care without trans- Pacific flight, and it is a particular mecca for westerners seeking plastic surgery. South Africa also draws many cosmetic surgery patients, especially from Europe. South Africa offers post-operative care in luxury hotels and safaris or other vacation incentives. Because the South African rand has such long standing low rate on the foreign exchange market, medical tourism packages there tend to be perpetual bargains as well. Additionally, Argentine ranks high for plastic surgery, and Hungary draws large numbers of patients from Western Europe and the US for high quality cosmetic and dental procedures that cost half of what they would cost in Germany or US.

More than 40 years, Cuba, the largest island of West Indies group has been a popular medical tourism destination for thousands of patients travelling particularly from Latin America and Europe. Cuba's USP (Unique Selling Proposition) are the remarkable reputation of the medical practitioners, affordable prices and the beautiful beach resorts where the patients can recuperate. Statistical figures reveal that in 2006, Cuba attracted nearly 20,000 health tourists. Cuba offers a wide range of affordable medical treatments which include joint replacement, cancer treatment, eye surgery, cosmetic surgery, neurological disorder such as multiple sclerosis' Parkinson's disease, orthopedics, addictions rehabilitation. Such treatments are cheaper in Cuba by about 60 to 80 percent than in the United States. Reports say that medical tourism in Cuba generates more than UD $ 40 million a year. This success in health care is nothing new to Cuba. History reveals that Cuba has made significant contributions to the world health since the 19th century. (HDR -2010, UNDP) It also boasts of a high caliber and high number of medical personnel. To reach Cuba residents of UK, Canada and other countries just need a tourist visa. USA resident case is different due to the US trade policy towards Cuba. Americans travelling to Cuba can obtain US government approval. Or they can travel to Cuba from the Bahamas, Jamaica, Dominican Republic, Canada or Mexico.

The medical tourism is on the rise in Mexico. US residents especially those residing near Mexican border find it easier to travel to Mexico for medical treatments. Many US employees especially those near Mexico have acquired insurance plans that send their works to Mexico for routine care or for regular. Most common treatments being availed in Mexico are dentistry, plastic surgery and bariatric surgery. Tijuana is the largest city of the Mexican state of Baja California and is situated on the US Mexican border. The US Mexico border is considered as one of the busiest medical tourism destinations. Mexico boasts of its medical experts and staff, majority of who have completed training in the US.

FOREIGN MARKETING PRESENCE OF HOSPITAL SERVICES OF INDIA

If the trickle of the medical tourists a decade ago has turned in to flood today in India, much of it has to do with the facilitation centers, the bases, and the tie ups that these hospitals have developed in potential markets. All the big hospital chains have crafted focused strategies to attract patients from target countries. To take the example of Apollo Hospital, this opened first international center in Oman in 2008. It now has three. By the middle of this year, it will have three more clinics in the African countries of Kenya, Tanzania and Ethiopia. It has tie-ups with local hospitals, government agencies and doctors in African countries. It has also plan to open a hospital in Nigeria soon. All these – the facilitation centers, clinics, and local hospital tie-ups – help in publicizing and making things easier for the patient looking to go to abroad for treatment. There basic tests are conducted at these clinics and detailed advice given to them. Other staff helps work

out costs, apply for visas, etc. The centers are used by patients to refer reports to doctors back in India and get approval for medical travel. Fortis and Max have also been working on broadly similar initiatives. The sales efforts in these countries are focused on building brand familiarization and educating the potential patients about the facilities in the hospitals. Hospitals organize regular outreach programmes in target countries. 'Health Camps' are the most popular – that is, taking doctors from India to these areas on a regular basis and treating patients. The local clinics and facilitation centers are run by the locals of the particular city on a franchise basis but training and backend support is provided by Indian hospitals. Tie ups with non government organizations (NGOs) or government organizations play a significant role, for example Afghan Red Crescent Society sends 20-30 patients a month to the Max facility. A host of medical travel companies that have sprung up around the world also work with hospitals in India. Max centers are already present in Bangladesh, Nigeria, Afghanistan and Nepal, where the chain is a well known brand. By the year 2012, Max will add five more regional centers in Ethiopia, Zambia, Oman, Kenya and UAE. (Tondon, 2011) Fortis has gone a step further in brand building by engaging with medical colleges in Africa. They provide for students to be trained under surgeons in India. Every year, batches of students come from Congo, Kenya, and spend between 45 and 60 days working under a specialist from Fortis. Fortis will 11 more centers – five in Iraq, two in Russia, with another two in Nigeria and one each in Ethiopia and Tanzania. These are the growth markets for Indian health care industry. Fortis have five dedicated facilities for international patients across India with Delhi seeing almost 85 percent of the patient inflow, while it's other centers treat the rest. Individual doctors and fertility centers do not have such an organized approach. Many of them get a fair amount of traffic through either word of mouth publicity or their internet presence. Gujarati patients of East Africa and South Africa are very good medical tourist traffic to Ahmadabad. The city hospitals get 25 to 30 percent of international patients' inflow growth every year.

INTERMEDIARIES AND AGENTS ROLE IN MEDICAL SERVICE – FOREIGN PATIENTS

If the bases abroad of Indian hospitals build brands, there is a thriving population of service providers of every kind that has cropped up to help patients negotiate India and Indian health care system. For Afghan patients Max New Delhi has full time translators for the last three years. There are plenty of translators floating around, doubling as facilitation agents. A random Google search for medical travel assistants will throw up plenty of suggestions. A bulk of clients for treatment in New Delhi comes through referrals, which account at large from Iran, Iraq and other Middle East countries. Freelance agents make good money in Delhi which count to a tune of 10% of the surgery costs in the local private hospitals. Translator services for Afghan patients are large in Delhi due to the 40,000 strong refugee populations from Afghanistan. Delhi caters to Nigerians and other African nations, while still others are hangouts for people from the CIS countries. Of course, as all these are unregulated, there is plenty of scope of for unscrupulous touts to thrive as well. They often prey on the numerous unsuspecting patients who have now come through a hospital facilitation center in their country, and whisk them to private hospitals and nursing homes for bigger commission. Big hospitals such as Apollo and Fortis are aware of these people but helpless to do anything about them. (TNN, 2011)

AN ECOSYSTEM OF MEDICAL TOURISM IN INDIA

Many Indian hospitals have set up facilitation centers abroad to highlight the advanced medical facilities available in India at cheap rates. These facility centers act as the first line contact of the patients for treatment in Indian hospitals. An international patient takes about 30-40 interactions with the Indian hospitals before travelling to India. After assessing the medical reports, Indian doctors recommend what treatment is best for the patient. Unlike a regular travel visa, medical visas are issued on a priority basis. Medical visa is open to residents of all countries including Pakistan, Bangladesh, China, and Sri Lanka, with a validity of one year. This is extendable under certain conditions, subject to approval by the home ministry. There are usually guest houses that thrive around hospitals. Almost 80 percent of the clientele comprise people traveling with patient. Locals also rent out smaller rooms, at almost double the rentals. Translators earn anything between INR 500 and INR 1000 a day. In Delhi most of the translators comprise students and refugee living in the city. International patient centers are a part of hospitals. Patients are often seen with translators. Some hospitals even have in-house doctors from West Asian countries. Medical travelers usually buy medication for longer durations – sometimes one to one and half years. It is a common sight for medical shops around hospitals to spot sign boards in Arabic language. (Tondon, 2011) To cater international medical travelers there are region – specific restaurants and food stores. Most of these are operated by refugees or students studying in India. Bupa and Allianz provide international insurance packages that cover treatment in different countries. These are the part of the large ecosystem of New Delhi in India for medical tourism.

ECONOMICS OF MEDICAL TOURISM

International medical travelers are good for corporate hospitals because these people often spend more than the same procedure than Indian patients. That is because medical procedures are often sold as packages, which include consultation in home country, facilities within Indian hospitals (mobile phone, accommodation etc.) and could therefore be anywhere between 20 percent and 30 percent higher than the cost that an Indian patient would bear. Down in the south patients arrive in large numbers from Bangladesh, Sri Lanka at Manipal Hospital in Bangalore. There isn't lack of patients within India and some of the hospitals are 100 percent occupied. But international patients often occupy high-end beds and are therefore a clear revenue generator for the hospitals. A US $ 2,000 procedure for Indians on a single room basis would cost an international traveler about US $ 3,000 ($1,000 extra) as part of the package or 20-30 percent hike in costs. The whole economy of this system will only be successful if it helps hospitals get higher revenues for the same bed and procedure. That can help upgrade the facilities of the general ward. International patients are different as they come mostly from Bangladesh and Sri Lanka and do not pay significantly more than what Indian patients do. Though the Indian medical treatment costs are reasonable by developed world standards, they are often a burden for the international people who do come for treatment. Apollo is a household name in Nigeria. The bigger chains take great care to sort out problems faced with the medical travelers. But it is still a work in progress – and the industry will take some time to settle down. (Tondon, 2011) almost all Indian hospitals serving medical tourists are accredited either by Joint Commission International (JIC) or National Board for Accreditation of Hospitals and Health Care and follow international safety standards. That's why India remains a safe and preferred medical tourism destination. Indian hospitals are generally much less expensive than those in Singapore or other medical tourism destination Thailand or Philippines. For instance, a hip replacement that costs $ 43,000 in the US could cost $ 12,000 in Singapore and costs $ 9,000 in India. India is market for price sensitive customers and Singapore is for higher- end customers aiming for more luxury, out of the first world price sensitive customers. In the macro tourism statistics of foreign tourist arrivals in India, medical tourism has a significant contribution for tourists from Bangladesh and Sri Lanka. Medical tourists from developed first world of Germany, France and Japan are negligible, which constitutes the top ten tourists arrival in the national tourist statistics. Language and national income are barriers to opt for India as a preferred destination. Evaluating the large senior populations of these countries a very high potential target market lies in these countries and can be tapped through suitable positioning. Many corporate hospitals are gearing up for these niche markets. Medical tourism cannot be considered as major force of changing India's position in the global market of international tourism, but the contribution to national economy in pockets are significant.

TABLE 2: TOP 10 SOURCE COUNTRIES FOR FOREIGN TOURIST ARRIVALS (FTAS) IN INDIA IN 2009

S. No.	Source Countries	FTAs *(In Millions)	Percentage(%) Share
1	USA	0.803	15.72
2	UK	0.749	14.66
3	Bangladesh	0.458	8.97
4	Sri Lanka	0.241	4.72
5	Canada	0.221	4.33
6	France	0.195	3.82
7	Germany	0.194	3.80
8	Australia	0.149	2.92
9	Malaysia	0.134	2.62
10	Japan	0.124	2.43
Total Top Ten Countries		***3.268***	***63.98***
Others		***1.840***	***36.02***
All Countries		***5.108***	***100.00***

Provisional

Source:- Bureau of Immigration, Government of India.

ADVERSE IMPACT OF MEDICAL COMMERCIALISATION

India is a developing country with very low per capita income by any method of economic calculation in the world. National concerns of BPL (Below poverty Line) population and their benefits is in any manner is the biggest challenge for the policy planners and implementers. Medical services for the masses are provided by the national government through government hospitals at nominal costs to make the masses to afford the service. As a general proposition, much of the performance under the critical indicators of Life Expectancy, IMR, MMR, TFR etc. correlates with economic wealth and levels of poverty. The reasons for such adverse health indicators may relate to high level of malnutrition and anemia, and lack of access to essential health services. Not surprisingly, the states which are weakest in terms of life expectancy, maternal and infant mortality and total fertility areas are also lowest in terms of economic wealth and highest in terms of poverty levels and total health expenditures.

TABLE 3: KEY DEMOGRAPHIC HEALTH INDICATORS AND RELATIONSHIP TO POVERTY AND WEALTH

High Focus EAG States	Life Expectancy at Birth (2002-06)	IMR (2008)	MMR (2004-06)	TFR (2008)	Poverty Level (2004-05)	Per Capita NSDP (2008-09) in INR	Per Capita Health Expenditure (NHA – 04-05)
Bihar	61.6	56	312	3.9	41.4	10206	513
Chhatisgarh	-	57	-	3.0	40.9	19521	772
Jharkhand	-	46	-	3.2	40.3	16294	500
Madhya Pradesh	58.0	70	335	3.3	38.3	13299*	789
Odisha	59.6	69	303	2.4	46.4	18212	902
Rajasthan	62.0	63	388	3.3	22.1	19708	761
Uttar Pradesh	60.0	67	440	3.8	32.8	12481	974
Uttarakhand	-	44	-	-	39.6	25114	818
High Focus NE States							
Arunachal Pradesh	-	32	-	-	17.6	22475	1454
Assam	-	64	480	2.6	19.7	16272	774
Manipur	-	14	-	-	17.3	16508	673
Meghalaya	-	58	-	-	18.5	23069	894
Mizoram	-	37	-	-	12.6	20483	1133
Nagaland	-	26	-	-	19.0	17129*	819
Sikkim	-	33	-	-	20.1	30652	1507
Tripura	-	34	-	-	18.9	12481	1486
General Category States							
Himachal Pradesh	67.0	44	-	1.9	10.0	32343	1511
Jammu & Kashmir	-	49	-	2.2	5.4	17590*	1001
Andhra Pradesh	64.4	52	154	1.8	15.8	27362	1061
Goa	-	10	-	-	13.8	60232*	2298
Gujarat	64.1	50	160	2.5	16.8	31780*	953
Haryana	66.2	54	186	2.5	14.0	41896	1078
Karnataka	65.3	45	213	2.0	25.0	27385	830
Kerala	74.0	12	95	1.7	15.0	35457	2950
Maharashtra	67.2	33	130	2.0	30.7	33302*	1212
Punjab	69.4	41	192	1.9	8.4	33198	1359
Tamil Nadu	66.2	31	111	1.7	22.5	30652	1256
West Bengal	64.9	35	141	1.9	24.7	24720	1259
INDIA	**63.5**	**53**	**254**	**2.6**	**27.5**	**25494**	**1201**

Note: IMR: Infant Mortality Rate, MMR: Maternal Mortality Ratio, TFR: Total Fertility Rate, NSDP: Net State Domestic Product (Per Capita Income) at constant (1999-2000) Prices

*:2007-08

Source: (col. 2) to Col. (4): Registrar General of India; Planning Commission; for col. (6), NHA 2004-05, for Col.8 table 1.3, Col. 7 - CSO

India for the last five decades has invested in the medical and health care sector by the national control of education. The issues of national significance were 'Brain Drain' of doctors to foreign countries in search of higher earnings. Since 1991 liberalisation Indian education has also gone through privatization and the corporate investments in this industry has gone up. Higher salaries and job shifting trend has attracted Indian doctors to come back to the country for lucrative jobs as specialist physicians. At the same time pharmaceutical sector at domestic front and foreign investment in the industry is a mega attraction.

Commercialization has resulted in artificial and unethical hike in the prices of lifesaving drugs. Higher profit margins and has cost the patients to pay very high prices in return making the common masses unaffordable to pay for the medication. Insufficient monitoring agencies of the government and the profit motive of the medical care and the pharmaceutical industry has made life of the common masses tough for the medical care. High levels of profit orientation motives of the industry has resulted in the medication price rise by four times in the last six years as the experts of the profession view. To counter such practices the regulatory authorities are proposing the rate control measures in various forms for the medical industry. Active participation of the government in opening up of outlets of medicine "Jan Ausadhi" at several places in the country is a beginning attempt. Government pharmaceutical companies in these outlets are selling generic and therapeutic medicines at a price of 10% of those available in the commercial market. Domestic medical care and practitioners motives are moving towards commercialization by tasking the common masses. The generic medicine market in India is INR 68,000 crore by the end of 2008. Jan Ausadhi campaign may bring a hope of reduction and controlled prices of the medicines of common diseases of the national population. Medical tourism has also provided the government hospitals to provide upper cost medical care for the patients of those segments who can afford such services. Today medical tourism is controlled by the corporate hospitals in India. Government medical colleges and hospitals are competent and equipped enough to boast the medical tourism through government's direct participation in this drive rather than the industry.

AYURVEDA (INDIAN MEDICARE) – AND AYUSH ADVANTAGES (AYURVEDA, YOGA & NATUROPATHY, UNANI, SIDDHA & HOMEOPATHY)

The aim and goals of AYUSH department are the promotion and propagation of traditional systems of medicine especially in the background of increasing chronic disorders due to modern day lifestyles. In order to meet this commitment the department of AYUSH has taken up steps for mainstreaming of AYUSH at all levels in the health care system, improving access to and quality of public health delivery, and promoting health and the prevention of diseases. Under mainstreaming of AYUSH over 2,368 doctors and 2,184 para-medics have been achieved in 93 hospitals upgraded and essential drugs supplied to 6,074 dispensaries. For taking AYUSH to the people a number of public health campaigns have been started like 'Homeopathy for Mother and Child Care', 'Unani for Skin Disorders', 'Yoga for Health', 'Ayurveda for control of Anaemia' and 'National Campaign on Amla'. AROGYA fairs have been organized in all the North-Eastern states for the first time in addition to Srinagar, Patna, Bhatinda etc. Ensuring quality assurance in the AYUSH sector has continued to be a priority area for which the department in collaboration with the Quality Council of India (QCI) has developed a scheme for voluntary certification for AYUSH products and also for accreditation of laboratories, colleges and hospitals to provide quality services to the people. Regarding AYUSH education a number of reforms have been initiated including modernization of institutes, revision of syllabi and introduction of new courses. Over 15,000 doctors have been trained under Re-orientation of Training Programme (RoTP). Collaborative Research projects on prevention and treatment of cancer, Diabetes, Kala Azar, Chickungunia etc. with top level institutions within and outside the country have been taken up. A Center for Research in Indian Systems of Medicine (CRISM) has been set up at the University of Mississippi (USA) to facilitate scientific validation and dissemination of information on Ayurveda, Siddha and Unani Medicine through collaborative research and advocacy. (NRHM -2005-10) The Traditional Knowledge Digital Library (TDKL) was set up by the department in collaboration with Council for Scientific and Industrial Research (CSIR). So far a total of 218000 formulations from classical texts have been transcribed in to patent compatible format. Agreements have been signed with European Patent Office (EPO) and US Patent & Trademark Office (USPTO) enabling them to gain access to this database in order to prevent bio-piracy. This is an important milestone in the protection of Traditional Knowledge globally.

Further, it has been decided by the government to establish AYUSH hospitals in all the states of the North East. Setting up of new AYUSH integrated universities / institutions are also envisaged in the new future. AYUSH industry clusters will be expanded and efforts for propagation of AYUSH systems both within and outside the country will be stepped up. There must be further efforts for integration of various systems medicine, with emphasis on developing synergy between modern and AYUSH systems of medicine and offering choice of systems of treatment to patients. There is a need to institutionalize courses in various medical systems for practitioners belonging to other systems, e.g., government to courses for training in basic allopathic care for AYUSH practitioners who desire to acquire these skills.

Ayurveda is the 5,000 year old Indian medicine. The young, educated urban Indian is waking up to the possibilities of Ayurveda (ayur: life; veda: knowledge), with growing research in this area and the many therapeutic benefits that it is offering, ayurveda have come to mean much more than wellness massages, herbal shampoos, sweet-smelling moisturizers and grandma's remedies. Given that chronic ailments are striking earlier than ever before, they are taking ayurveda seriously for therapeutic and pharmacological management and prevention of conditions raising from cancer, heart disease and diabetes to toothache. Apart from vaccines, they feel mainstream medicine does not have a strong enough preventive approach. Though Ayurveda works at its own pace when compared to mainstream medicine, the perception of fewer side effects perhaps works to its advantage. If ayurveda has to re-emerge as a powerful therapeutic option with global appeal, in scientific merit needs to be validated through a series of well designed clinical trials.(Thomas, 2011)

INDIA – THE PREFERRED ONE FOR MEDICAL TOURISM

Advantages that India offers as a destination for medical tourism are similar to those that make it an attractive option for IT off shoring. Much like the legion of engineers that dominates the IT sectors, Indian doctors are educated in English under a medical curriculum that was closely modeled on the British system. After independence the Indian government expanded medical education starting a number of new medical colleges at the state level and also financing medical centers of excellence such as AIIMS (All India Institute of Medical Sciences). In the last decade or so there has been growing private investment in medical education as well, with a number of private medical colleges being started. The cost of medical education has been relatively cheaper in India with a bulk of the expense being subsidized by the government. A peculiar feature of medical education in India is that the numbers have been skewed disproportionately in favour of graduating doctors rather than nurses compared to other countries. Consequently India has exported doctors to other developed countries, such as United States, the United Kingdom and those in West Asia, atypical example of brain drain and the subsidizing of first world health by the tax resources of an improvised third world country. No doubt these physicians have been able to acquire greater skill by working with the state of the art technology and being exposed to the latest developments and best procedures in medical science. Indeed major selling point of medical tourism is precisely its ability to attract these Indian doctors to return from abroad to work (either full time or part time) in these multi specialty hospitals where they would not lack for the latest and the best in equipment and technology. Newly returned Non Resident Indian (NRI) physicians have served not only as poster boys (and girls) of medical tourism in India but in some cases have been prime movers in setting up such hospitals incorporating the latest medical technology and medical practices, and often bringing with them their entire support staff in order to replicate in minute detail the environment of a first world facility.

This reverse brain drain of NRI physicians could not have taken place without certain enabling factors. These relate to the process of opening up of the Indian economy itself, involving the ability to undertake larger quantum of private investment (including foreign investment) in health sector (multi specialty hospitals require heavy capital investment upfront), more permissive rules on importing medical technology and improvements in transportation and communications infrastructure. The potential to establish backward and forward linkages with a maturing Indian pharmaceutical industry and growing sophistication of indigenous medical equipment manufacturers may well be another reason that makes India an attractive destination. The attraction of foreign tourists are not the only USP of the corporate hospitals, domestic medical tourists are the largest chunk of the patients inflow due to the availability of health insurance services and open policy of the government in allowing foreign insurance companies to operate in the wider areas of services. (HRH, JLI, WHO 2006-15) Many corporate hospitals have their largest revenue from the insurance companies insured patients and also from some government insurance agencies. Metro cities corporate hospitals see their future with the expanded business of the insurance companies. That's the reason no hospitals want to be blacklisted by the insurance companies, ultimately that may lead to the closure of the sophisticated business. In an interesting correlation, hotel industry sees the right future through a lowest risk by investing in the city center tower hotels, as the trend in many metro cities that, corporate hospitals find the business tower hotels as the finest property for the future hospitals. Medical tourism has reduced the risk of the investment in the metro city business hotels as some experts of the industry argue. Examples are evident in Hyderabad.

MEDICAL TOURISM – AN ADVANTAGEOUS REVENUE RESOURCE MODEL AND SOME DARK SPOTS OF THE BUSINESS TREND

There certainly large sums being bandied about the full potential of medical tourism in India. A much cited CII-McKinsey study estimates that medical tourism can contribute INR 5,000 – 10, 000 crore additional revenue for up market tertiary hospitals by 2012. Leaving aside these astounding figures for the moment, a few preliminary remarks may be in order here regarding the larger effects of medical tourism for Indian economy and society. There is legitimate concern that medical tourism, much like economic liberalization, will further exacerbate the divisions between the haves and the have-nots which now will include those with access to the medical facilities and those whose lives will be tragically cut short because of the continuing lack of access to basic preventable health care. Thus far medical tourism has benefited from the being neglect of the government which has saved it from being smothered in its infancy by overregulation. However it is inevitable that in the coming years due to the sheer potential size of this service sector the government will have to shake off its habit of indifference. There exist classes of medical tourist who see India as an easier source to obtain transplant organs such as kidneys for which they have to wait for years in their own countries. Going by the frequent reports in the medical about organ and kidney rackets there is cause to believe that this kind of predatory medical tourism is a serious problem. Given the enormous social and economic inequality and deprivation prevalent in India the possibly of exploiting weaker off sections in this medical organ trade is only too real. It is also not inconceivable that despite protestations to the contrary, even the most reputed of hospitals may play a passive facilitating role in this organ trade. It is imperative that the government should take a more active regulatory role in order to prevent medical tourism from descending in to an extension of the illegal organ trade. There is a strong case to be made for greater government regulation and vigilance in order to protect medical tourism from its own worst excesses. Skeptics may well point out that providing low cost health options to foreigners does little to improve health overall for Indians. Be an excuse for continued government neglect of public health or retreating further from this arena pleading financial and budgetary constraints. (Nair, 2009) If medical tourism is indeed a net revenue generator for the government it would do well to increase its allocation for public health. The more durable gains of medical tourism may be more imperceptible gains that are difficult to precisely quantify. One of the immediate benefits may be that of reversing the brain drain, with more trained personnel opting to stay back in India as opportunities for employment and professional advancement increase. To attract a reliable stream of clients, Indian hospitals catering to medical tourism have willingly adopted (and have had to maintain) very high standards of practice. This may spur greater efforts towards effective self regulation among these hospitals as they realize the importance of protecting 'market brand' where the short-sighted practices of few renegade members can cause industry wide damage and loss of confidence which may be impossible to regain. Hopefully along with medical technology, better medical practices; it is more than likely that Indian consumers will demand better quality in their own care.

Economy in costs being the bedrock of medical tourism, this capital intensive service industry cannot sustain itself on temporary cost advantages. In order to ensure that costs remain lower, the industry will have to encourage, directly or indirectly, investment in medical education and research. This may take the form of lobbying the government or the accreditation bodies such as Indian Council of Medical Research (ICMR) to periodically raise the quality of medical and nursing graduates and the standard of the medical curriculum. It may take the direct form of setting up new medical colleges with updated educational curricula and facilities, increased focus on research and developments of various kinds, or more plausibly greater avenues for apprenticeships and training of medical personnel so that skills are continually updated. The question of sustainability allows one to consider another possibility that will have a more direct bearing on health care for the Indian masses. In a globalizing world of cut-throat competitions this new medical industry may soon discover that its most valuable asset is its pool of domestic customer. This trend is evident in the city of Hyderabad as the experts of the industry agree with evidences. The Indian state instituted some form of comprehensive health coverage for its population as part of its social safety nets, similarly state of Karnataka do offer comprehensive coverage to its population. It is possible to contemplate a future when this may well dovetail with a government that takes its own rhetoric of economic and social justice seriously. (AR, MHFW, 2005-10) With certain kind of central government employees already being allowed to avail themselves of treatment at these private multi-specialty hospitals, it may prove politically and morally untenable for the government not to offer some kind of coverage for the rest of the population. It is not an impossible dream that the migrant workers which is briefly referred in the beginning and the medical tourists from the first world who today seem to belong to two different universes, may ultimately both manage to live in the same one.

A NATIONAL MACRO PERSPECTIVE OF HEALTH CARE IN INDIA- THE FACTS

a. Health workforce of India

Is India is having adequate number of health workers? One international norm is a minimum of about 25 skilled health workers per 10, 000 population (doctors, nurses, and midwives) in order to achieve a minimum of 80 percent coverage rate for deliveries by skilled birth attendants or for measles immunization as seen in cross country analysis (JLI, WHO, 2006) standards. Workforce estimates based on the census 2001 suggests that there are around 2.2 million health workers in India but these are based on self-reported occupation which is susceptible to unqualified providers being counted as qualified ones. Adjusting for this, the density of health workers falls a little over 8 per 10, 000 population of which allopathic physicians are 3.8 and of nurses and midwives are 2.4 per 10, 000 population. Allopathic doctors comprising of 31 percent of the workforce, followed by nurses and midwives (30 percent), pharmacists (11 percent), AYUSH practitioners (9 percent) and others. The workforce estimates do not include the substantial number of community health volunteers and workers introduced under the NRHM after 2005. The nurse-doctor ratio in India is heavily skewed in favour of doctors. According to a computation from census there are approximately 1.2 nurses and midwives per allopathic physician. In comparison, developed countries such as USA and UK have nurse-physician ratios of 3 and 5 respectively. (NRHM-2005-10) Almost 60 percent health workers reside in urban areas. This mal-distribution is substantially exacerbated when adjusted for the larger share of the population residing in rural areas. The majority (70 percent) of health workers are employed in the private sector. The density of health workers per 10, 000 population in urban areas (42) is nearly four times that of the rural (11.8) areas. The majority of the health workers are employed in the private sector. Indian states with the greatest human resource needs also have the lowest capacity of producing the health workers. The distribution of medical and nursing colleges across the country is highly skewed. The five south-western states of Andhra Pradesh, Maharashtra, Karnataka, Kerala and Tamil Nadu (with 31 percent of the country's population) account for 58 percent medical colleges in India, both public and private, and 63 percent of the GNM nursing colleges in the country, 95 percent of which are private. States with poor health records like Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh have nurse densities lower than the national average, and account for only 9 percent of the nursing schools in the country.

Better economic and professional opportunities and better working and living conditions make for an urban preference. Specializations make government employment and rural services even less attractive. Public sector efforts to recruit and retain health workers to rural posts are also compromised by a number of workforce management issues. However these problems, including central problem of getting skilled professionals to work in rural areas, are amenable to solution, and the achievements of the last few years show the general directions needed. The launch of the National Rural Health Mission (NRHM) in 2005 marked a turning point in human resource for health. This led to the appointment of almost 1,06,949 more skilled service providers in the public health system by March 2010, of which 2,460 were specialists, 8,624 were doctors, 7,692 were AYUSH doctors, 26,993 were nurses, 46,990 were ANMs and 14,990 were paramedical. This was one of the largest increments to the public health workforce in recent times. Unfortunately needed it most was unable to make use the opportunity afforded by NRHM simply because there were not enough ANMs or nurses or doctors available for recruitment. NRHM funds have also enabled the revitalizing of the community health workers programme in India, and the over 7,00,000 ASHAs signifies a massive increase in health workers in the country.

b. Expansion of Medical and Nursing

The last one year has seen major advances in expansion of medical and nursing education. These include Medical Council of India (MCI) regulations have been amended to revise norms for setting up of medical colleges and increasing Post Graduate seats. Over 4,000 PG seats have been increased during this period consequent to revision teacher- student ratio. Central scheme of an amount of INR 1,350 crores has been approved for funding state government medical colleges to start/ increase PG medical seats. The scheme for setting up 132 ANM and 137 GNM schools at a cost of INR 660 crores and INR 1,370 crores, respectively has been approved. Schemes for upgrading about 25 nursing schools attached to medical colleges in to nursing colleges have been announced. State nursing councils and state nursing cells have been provided with INR 1 crore each to improve their capacities and faculty development programmes to train 300 faculty members for expanding schools in difficult states has been put in place. A paramedical and physiotherapy central council bill and a scheme to

set up a National Institute of Paramedical Sciences and eifht regional institutes are under active consideration. There is a need to produce a large number of trained health workers across all categories of health work force. (AR, MHFW, 2005-10) A national health human resource policy which maps the current deficits, and also projects the need for 2020, will help define the number and location of new institutions needed for training doctors, nurses, dentists, paramedics and other health workers. Appropriate monetary and non monetary incentives are critical to encourage qualified health workers to serve and remain in remote rural areas. These could involve providing health workers with packages of monetary and non monetary incentives to attract them to serve in underserved areas. The expansion of professional education and the improvement in quality professionals require systems of continuing education, accreditation and regulation. This calls for improved governance and reform of current regulatory bodies and professional councils.

c. Private Health Sector vs. NRHM

Over the years the share of private sector in the provision of health care has at about 80 percent of all outpatient care and about 60 percent of all in-patient care. The private sector in India has a dominant presence in all the sub-markets – medical education and training, medical technology and diagnostics, pharmaceutical manufacture and sale, hospital construction and ancillary services and, finally, the provisioning of medical care. Over 75 percent of the medical human resources and advanced medical technology, 68 percent of an estimated 15,097 hospitals and 37 percent of 623,819 total beds in the country are in the private sector. Of these most are located in urban areas. The private sector's predominance in the health sector has led to inequities in access to health care.

In government the upgrading facilities at all levels in all states has been a major achievement. In infrastructure alone, this period has seen new buildings for 9,144 sub-centers, 1,009 PHCs, 435 CHC and 57 district hospitals. Another 8,997 sub-centers, 2,081 PHCs, 1,255 CHCs and 357 district hospitals have had their infrastructure renovated or upgraded. Every public health facility now receives an annual untied fund as grant for local initiatives to upgrade it. With addition of new human resources and skills over8,324 PHCs have reached 24x7 functionality status and 2,463 are being upgraded in to FRUs. (NRHM, 2005-10) This reflected in the increasing figures of out-patient attendance and institutional deliveries across all states. Programmes and facility management has been strengthened by the addition of management- and accounts – trained contractual staff in every district and in a large number of hospitals. Further, a large number of health officers playing administrative roles have completed or are undergoing training in public health management.

d. Funding of Health Sector

From a public policy point of view, it is desirable that health financing is so arranged that it reduces the overall out-of-pocket (OOP) expenditure on healthcare, and protects against financial catastrophe related to healthcare. The global standard related to the 'desirable' limit of OOP to protect people from financial catastrophe is less than 15 percent of total health spending. In contrast, in India, the OOP is to the tune of 71 percent of total health spending. The per capita public health spending is low in India, being among the five lowest in the world. The public expenditure in the country over the years has been comparatively low, and as a percentage of GDP it has declined from 1.3 percent in 1990 to 0.9 percent in 1999, increased marginally to 1.1 percent by 2009. The central budgetary allocation for health over this period, as a percentage of the total Central Budget, has been stagnant at 1.3 percent, but has almost doubled to 2 percent by 2008-09. As per the NHA (2004-05), the total health expenditure in India, from all the sources, was INR 1,33,776 crores, constituting 4.25 percent of the GDP. Of the total health expenditure, the share of private sector was the highest at 78.05 percent, public sector at 19.67 percent and external flows contributed 2.28 percent. The provisional estimates from 2005-06 to 2008-09 show that health expenditure as a share of GDP came down to 4.13 percent in 2008-09. Though health expenditure has increased in absolute terms, the proportionately higher growth of GDP has resulted in a moderate increase in the share of health expenditure to GDP over the years. But the share of public health expenditure in the GDP has increased consistently from 2005-06 to 2008-09. The central and state governments in India have been increasing their expenditure on health, especially since 2005-06, due to the focus on health with the launch of NRHM. The union health budget increased from INR 5,255 crores in 2000-01 to INR 8,086 crores in 2004-05 and INR 21,680 crores in 2009-10 while that of states for 2009-10 was INR 43,848 crores. (NRHM, 2005-10)

Out-of-pocket expenditure (OOP) on healthcare forms a major barrier to health seeking in India. According to National Sample Survey Organisation, the year 2004 saw 28 percent of ailments in rural areas go untreated due to financial reasons – up from 15 percent in 1995-96. Similarly, in urban areas, 20 percent of ailments were untreated due to financial reasons – up from 10 percent in 1995-06. Those who access 'free' government health services are expected to purchase medicines from private pharmacies; pay user fees for laboratory tests and of course the ubiquitous informal fees.

Apart from public expenditure on direct provision of healthcare, the central and state governments have also initiated various innovative schemes to increase access and choice of healthcare provider (public and private) to the people, especially in the form of various subsidized health insurance schemes. Launched in 1st October 2007, the RSBY provides coverage to workers in the unorganized sector who come in the category of Below Poverty Line (BPL) with a total assured sum of INR 30,000 per family per annum. Of the estimated premium of INR 750 per family, the government of India contributes 75 percent and the remaining 25 percent comes from the state government. In the year 2008-09, the central government outlay for the RSBY was INR 205 crores; and until December 2009, 22 states and union territories had initiated the scheme across 172 districts covering 2.98 crore households. Many state governments have initiated health insurance schemes for the BPL population and unorganized workers. Some of the notable schemes are the Arogyasri Yajona (Andhra Pradesh), Kalainger Insurance Scheme for Life-Saving Treatments (Tamil Nadu), Suvarna Arogya Surakshya Scheme (Karnataka), and Mukshya Mantri BPL Jeevan Rakhsa Kosh (Rajasthan). The focus of these schemes is to cover identified tertiary care diseases which involve catastrophic expenditure and are not covered under any other pre-existing health programmes. Further many states have adopted RSBY / Arogyasri model to suit their requirements and launched health insurance programmes. Haryana, Maharashtra, Pondicherry, Tamil Nadu, Karnataka, Assam, Himachal Pradesh, Kerala, Sikkim, Uttarakhand, and Jammu and Kashmir have initiated various models of health insurance schemes in 2008-09 and 2009-10. India should reiterate its commitment to achieving a target of increasing public spending on health to 3 percent of the GDP. Public expenditure falls short of the target of 2 percent of the GDP, as suggested in the Eleventh Five Year Plan document. In order to achieve that target the public expenditure on health will have to increase to around INR 1,60,000 crores by 2011-12 as against the budgeted amount of INR 66,000 crores in 2009-10 by the center and the state put together. This will imply that the annual expenditure in health sector will have to increase by 56 percent per annum in the next two years. The Tax/ Revenue- GDP ratio in India is 12.7 percent as against the 27 percent global average. This clearly shows that increasing tax-to-GDP ratio may go a long way in raising the level of public health spending to the desired levels, along with increasing the absorptive capacity in the states.

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A STUDY ON DECIDING FACTORS OF WOMEN ENTREPRENEURSHIP IN VIRUDHUNAGAR DISTRICT

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ABSTRACT

Traditionally women are inferior in Social Status in Indian Society but the leadership potentials is basically very high among women than men. At the same time the potentials of women are hidden by the Socio, economic and political constraints. A century dawn in 20, women become aware more of their status in society and showing interest to utilize their potentials in productive ways and means. It true there is a substantial development in their life style leads to economic standard. Even through women supersede men in some fields, they have not yet attained their status in society. In the world Gender Development Index (GDI) and in the world Gender Empowerment Measure (GEM) in 1995 India is ranked 128th and 95th respectively. It visualized that the women potential is not fully tapped. There is an evidence that economic empowerment is a source for empowerment of women in society. Enterprising capacity and managerial caliber among women is more than men. When women are trying to use their capabilities in any kind of enterprising activity, they will set their ways own and they are treated without any recognition, response in the society by the dominants of men. This situation is being continued even after creating awareness. Entrepreneurship is a tool to make the changes in the life of women otherwise they become remain unemployed particularly in rural and semi urban areas. Today women are actively participating in social and political activities. Similarly, they should participate in the development process through entrepreneurship is a mechanism to provide employment in the economy. Women should become as an entrepreneur instead of getting employment elsewhere.

KEYWORDS
Empowerment, entrepreneurship, unemployment, economic development, capabilities.

INTRODUCTION

Traditionally women are inferior in Social Status in Indian Society but the leadership potentials is basically very high among women than men. At the same time the potentials of women are hidden by the Socio, economic and political constraints. A century dawn in 20, women become aware more of their status in society and showing interest to utilize their potentials in productive ways and means. It true there is a substantial development in their life style leads to economic standard. Even through women supersede men in some fields, they have not yet attained their status in society. In the world Gender Development Index (GDI) and in the world Gender Empowerment Measure (GEM) in 1995 India is ranked 128th and 95th respectively. It visualized that the women potential is not fully tapped.

There is an evidence that economic empowerment is a source for empowerment of women in society. Enterprising capacity and managerial caliber among women is more than men. When women are trying to use their capabilities in any kind of enterprising activity, they will set their ways own and they are treated without any recognition, response in the society by the dominants of men. This situation is being continued even after creating awareness. Entrepreneurship is a tool to make the changes in the life of women otherwise they become remain unemployed particularly in rural and semi urban areas. Today women are actively participating in social and political activities. Similarly, they should participate in the development process through entrepreneurship is a mechanism to provide employment in the economy. Women should become as an entrepreneur instead of getting employment elsewhere.

Entrepreneur is an individual either women or men who takes risks to identify opportunities for economic gains. This special study is a case study. Hence enterprising women in virudhunagar district. This study as considered hundred (100) enterprising women of virudhunagar for primary data collection. The study is particularly confined to women who are engaged in manufacture, Trade and Service activities in Virudhunagar Town. The researcher using likert's scale wider structured questionnaires to collect the primary data.

The study is become more important because of the industrialization and development of any country is decided by business leadership in the country. In India more than 50% population of the society is remaining unutilized.

Virudhunagar district has covered a total population of 17.6 lakhs in 2001, of the population 13 lakhs are male and 12.6 lakhs are female, the percentage of literacy 78.65% out of this- male literacy and female literacy is 87.24 and 69.93% respectively.

OBJECTIVES

The main objective of this paper is to study

1. The types of enterprising and the forms of relationship.
2. To find out the enterprising age group of women.
3. To find out the relationship between the education and enterprising capacity of women.
4. To analyze community and religion and family back ground.

The respondents for the study were selected on the basis of their type of business activity, it was found that majority of women are involved in trading and servicing sector.

CATEGORY OF ENTERPRISING

There are 3 categories of business activities in manufacturing, Trading and servicing sectors. In the manufacturing sectors women are involved in preparation of Appalam, Matches, Crackers, Pickles, Masala powder, Bakery Items, Soap oil, Phenoil, Garments making, Residential handlooms. The women who are involved in Trading activity in serve business, Tiffin Centre, Grocery shop, Fancy stores, Medical shops, Rice Business, edible oil Stores, Cool-Drinks shop, Floor Mill. Under Servicing sector women are involved in Beauty Parlor, Book binding, STD Booth, DTP & Xerox Centre, Computer Based Typing Work, Tailoring etc.

Above the categories of enterprising activities are shows in the Table below.

TABLE 1: TYPE OF ENTERPRISING

Sl.No.	Category of Emp.	No. of Respondents	Percentage
1	Manufacturing	23	23%
2	Servicing	45	45%
3	Trading	32	32%
	Total	100	100%

The respondents were selected on the basis of their type of business activity. It was found out that majority of women are involved in trading and then in servicing sector.

AGE WISE DISTRIBUTION OF THE WOMEN ENTREPRENEURS ARE GIVEN

Table 2: AGE GROUP

Sl.No.	Age Group	No. of Respondents	Percentage
1	25-34	52	52%
2	35-44	26	26%
3	45-54	22	22%
	Total	100	100%

The diagram shows the Women in the age group of 25 to 34 are more enterprising than the other age group. Out of 100 respondents 52 belonged to the age group of 25 to 34 and 26 belonged to 35-44 and 22 belonged to 45-54.

COMMUNITY – WISE AND RELIGION-WISE DISTRIBUTION OF THE WOMEN ENTREPRENEURS

Table No. 3

Sl.No.	Community	No. of Respondents
1	BC	72
2	MBC	18
3	SC/ST	10

TABLE NO. 4

Sl.No.	Religion	No. of Respondents
1	HINDU	91
2	CHRISTIAN	5
3	MUSLIM	4

Table 3 & 4 table interprets the Backward Class people are more enterprising than MBC and SC/ST women. Particularly the Naidu & Nadar Community women are having more enterprising attitude than others. The proportions of respondents are more or less proportionate to their proportion in the community.
Education is the base for entrepreneurs that could be created. Hire education should result in more employment generation. But the study brings a reverse result.

TABLE 5: EDUCATION LEVEL OF WOMEN ENTREPRENEURS

Sl.No.	Education Level	No. of Respondents	Percentage
1	Primary	6	6%
2	Secondary	31	31%
3	Higher Secondary	24	24%
4	Graduate	23	23%
5	Post Graduate	5	5%
6	Diploma	11	11%
	Total	100	100%

Secondary and Higher Secondary education completed women are enough to start their own enterprises only 5% of the women Post Graduates are become entrepreneur. But those who have conflicted secondary education comprised of 31% of the total women entrepreneur.

TABLE 6: TYPE OF FAMILY & MARITAL STATUS

Sl.No.	Marital Status	No. of Respondents
1	Married	70
2	Un-Married	17
3	Widow	13
	Total	100

The married women and women in nuclear family find conducive environment for doing business 70% of married women and nuclear family are become entrepreneurs; also it is worthwhile to note that 13% of widows come under the chosen respondents.

TABLE 7: TYPE OF FAMILY

Sl.No.	Type of Family	No. of Respondents
1	Nuclear	70
2	Joint	30
	Total	100

The women being a suppressed class for a long time in the society should have had some motivational factors to their enterprising. The suppressed class of women in the society they should have some motivational factors to start their enterprising. The results were brought about as:

TABLE 8

Sl.No.	Source of Capital	No. of Respondents	Percentage
1	Own Investment	24	24%
2	Bank Loans	35	35%
3	Friends and Relatives	15	15%
4	Government Funding	21	21%
5	Money Lenders	5	5%
	Total	100	100%

Women entrepreneurs have started their business by their own funding or from bank loans. 24% of the women have started their business with their own cash in hand 35% of the individuals are tied to their business, because of the funding from banks. It is interesting to note that only 5% of the respondents have relied on money lenders. Banks should start their promotional measures to attract more women entrepreneurs.

The hypothesis framed for this study is that there is no significant relationship between marital status and the type of business they choose.

TABLE 9: MARITAL STATUS & TYPE OF BUSINESS

Sl.No.	Marital Status	Manufacturing	Trading	Serving	Total
1	Married	13	35	22	70
2	Un-Married	6	5	6	17
3	Widow	4	5	4	13
	Total	23	45	32	100

After the analysis the x2 value was calculated and was found out as 2.8463 which was less than the table value of 9.49 at 5%level of significance. And hence the hypothesis hold good.

FACTORS MOTIVATING WOMEN FOR SELF-EMPLOYMENT

Some of the factors chosen were asked to be ranked by the respondents and the result is given in the following table.

TABLE 10: MOTIVATING FACTORS

S.No	Motivating Factors	Rank	No. of Response
1.	Earning money	1	21
2.	Govt. incentives and concessions	2	18
3.	Education and Training received	3	17
4.	Earning social status	4	14
5.	Independence	5	11
6.	Family Encouragement	6	9
7.	Self interest	7	6
8.	Time passing	8	2
9.	No other job	9	2

Based on the study conducted from the same group of women it was found that the main factor motivated their entrepreneurial attitude is earning money, only after that comes encouragement from family members, education and training received and social status. It was also found out that there is not much gap among the motivating factors except the factor that there is no other job.

FINDINGS AND CONCLUSION

The major findings brought out from the above analysis are as follows:

Women entrepreneurs have started their business by their own funding or from bank loans. The hypothesis viz. there is no significant relationship between marital status and the type of business they chosen was proved. To conclude, women those who are in the age group of 25-34 those who belong to backward community, those who have just completed school education, those who are in nuclear family and those who are married are having more entrepreneurial atmosphere, motivation and capacity to manage herself with adjusting and cooperation of her husband and children, when compared to their peer group. It was also found out that the money earning is the priority motivating factor deciding their entrepreneurship. Encouragement from family members, education and training received and social statuses are some of the other motivating factors.

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EARNINGS ANNOUNCEMENTS: DO THEY LEAD TO EFFICIENCY?

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ABSTRACT

Frequent earnings announcements and consequent changes in the share price is a regular phenomenon in behavioural finance to formulate suitable trading strategies on regular basis. The earnings are considered to show the status of cash flows and profitability to finance future expansion of the firms. This paper investigates signaling effect of the earnings announcements before and after the event day. Further it also tests the evidence of average abnormal return around the earnings announcement date. The analysis uses data of 32 firms in the BSE 500 index, which have announced earnings during the period 2009-2010. An examination of share price behavior around earnings announcements proves the signaling effect of these announcements. These results strongly support that the share prices drift negatively in the case of earnings announcements and the market particularly reacts more unfavorably to earnings announcements.

KEYWORDS
Earnings Announcements, CAR, AAR.

JEL CLASSIFICATION
G14, G15, M 40

INTRODUCTION

Various studies on earnings announcement documented that stocks return in India continue to drift in the direction of earnings signal for several days after the announcement. Proponents of rationality argue that the post earnings announcement drift is a consequence of bahavioural anomaly. Thus pricing of stock and formulation of apt trading strategies in view of frequent earnings announcement is an upcoming dimension for the fund managers and investors. Shivkumar (2006) observes the impact of expected and unexpected cash flows on the stock price and find that unexpected cash flows are more positively related to future returns, than are unexpected accruals. He argues that cash flow component of earnings play a better role than accrual in the determination of the share price. Thus decomposition of earnings can outperform the strategies normally.

Conroy et.al. (2000) studies the pricing effects of earnings announcements in Japan and is of the view that share price reactions are significant in case of earnings surprises especially the management forecast of next year's earnings. Further Cornell et.al. (1989) defends the argument differently putting more emphasis on fourth quarter earnings announcements than that of interim announcements.Victoravich (2010) investigates the difference in unsophisticated and sophisticated investors' affective reactions to a firm's positive earnings announcement. He concludes that the unsophisticated investors interpret a positive earnings announcement as more favorable than do sophisticated investors. The affective reaction to the earnings announcements is more influential on the stock price judgments of unsophisticated investors when compared to the stock price judgments made by sophisticated investors. Thus it has a far reaching significance for sophisticated investors who rely more on financial information important for standard setters and regulators. Gift et. al. (2010) examines the impact of earnings announcements and earnings forecast revisions on stock returns across market with different level of maturity. The basis objects are backward looking earnings announcements and forward looking earning forecast information on the price of equity shares. They analyze the situation in both the markets U.S and China to see how the level of market maturity and differences in information availability and actual and perceived reliability affect the relationship. They find that forward looking analyst forecast information plays a significant larger role in the security pricing process in the more mature U.S. financial market. In the less mature Chinese market, they find the opposite relationship as backward looking earnings announcement information plays a larger role. Aboody (2010) documents that stock with the strongest prior 12-month returns experience a significant average market-adjusted return of 1.58% during the five trading days before their earnings announcements and a significant average market-adjusted return of −1.86% in the five trading days afterward. Thus trading decisions of individual investors are at least partly responsible for the return pattern that they observe. Cready and Gurun (2010) identify a distinct immediate announcement period negative relation between earnings announcement surprises and aggregate market return and it persists even beyond announcement period suggesting that market participants don't immediately fully impound these future market return implications of aggregate earnings news. Thus the overall indication is that market participants use earnings information in forming expectations about expected aggregate discount rate and, especially the good earnings news is associated with a positive shock to required returns. Shivkumar (2010) documents the positive announcement of increases in corporate profits tended to have an immediate negative influence on overall stock prices which may be attributed to investors' perception of a likely increase in interest rates in the future. Rees and Thomas (2010) measure changes in the dispersion of individual analysts' forecasts around earnings announcements and further conclude that the 3 day market response to earnings announcements is negatively associated with changes in dispersion, consistent with the cost of capital hypothesis. They give new insights to the investment implications for retail investors. Cordia et.al. (2010) explores the long standing anomaly pertaining to market efficiency in the case of post earnings announcement drift. He finds that the post-earnings-announcement drift occurs mainly in highly illiquid stocks. A trading strategy that goes long high-earnings-surprise stocks and short low-earnings-surprise stocks provides a monthly value-weighted return of 0.04 percent

in the most liquid stocks and 2.43 percent in the most illiquid stocks. The illiquid stocks have high trading costs and high market impact costs. The transaction costs account for 70--100 percent of the paper profits from a long--short strategy designed to exploit the earnings momentum anomaly. Ball and Shivakumar (2009) also stress on the importance of new information released in the earnings announcements. Dellavigna and Pollet (2009) find that the Friday announcements have a 15 % lower immediate response and 70% higher delayed response. A portfolio investing in differential Friday drifts earns substantial abnormal returns and trading volume is 8% lower around Friday announcements owing to under reaction to information caused by limited attention. Berkman and Truong (2009) find that proportion of after hours earnings announcement has increased to more than 40%. Das et. al. (2008) concludes that share price drift up with reference to good news announcement using event study methodology.

OBJECTIVES AND HYPOTHESIS

The objective of our study is to analyze whether the market recognizes any differences between stock return before and after the event day if earnings are announced and further to explore the correlation between the return before and after the event day. This leads to the following hypothesis:

H0: Earnings announcement has no significant impact on stock price movement in the Indian stock Market.

H1: Earnings announcement has significant impact on stock price movement in the Indian stock Market.

DATA AND METHODOLOGY

The sample consists of quarterly earnings announcements obtained from the on line database of Bombay Stock Exchange between 1 January 2010 and 1 February 2010. Similarly, a number of quarterly announcements are reported, of which 32 are taken in the final sample. The study is limited only to 32 firms because these companies have announced surprised results in the market.

TABLE 1: LIST OF COMPANIES WITH EARNINGS ANNOUNCEMENTS

Name of Company	Announcement	Date of announcement
EXIDE	Exide Inds Q3 net profit up 132% yoy	11 JAN 2010
BAJAJ AUTO	Bajaj Auto Finance Q3 PAT at Rs273mn	12 JAN 2010
SINTEX IND.	Sintex Inds Q3 net profit dips 11% yoy	13 JAN 2010
JINDAL SAW	Jindal SAW Limited Q4 PAT up 96%	15 JAN 2010
NIIT TECH	NIIT Tech Q3 cons net profit at Rs353mn	15 JAN 2010
TCS	TCS Q3 Cons net profit up 33.9% YoY	15 JAN 2010
BALAJI TELEFILMS	Balaji Telefilms posts operating loss of 37% at quarter end	16 JAN 2010
ULTRATECH CEMENT	UltraTech Cement Q3 PAT at Rs1.96bn	16 JAN 2010
JAYPEE ASSO.	Jaiprakash Associates Q3 net profit dips 39%	18 JAN 2010
WIPRO	Wipro Q3 Cons net profit rises 21% YoY	20 JAN 2010
INDIA INFOLINE	India Infoline Q3 net profit doubles	20 JAN 2010
TVS MOTORS	TVS Motor Q3 revenue up 25.4% yoy	20 JAN 2010
RAYMONDS	Raymond Q3 net profit at Rs430mn	21 JAN 2010
MADRAS CEMENT	Madras Cements Q3 net profit at Rs160.10 mn	29 JAN 2010
ONGC	ONGC Q3 net profit up 23.4% yoy	22 JAN 2010
UNITED SPIRIT	United Spirits Q3 net profit at Rs968.50mn	22 JAN 2010
VOLTAS	Voltas' Q3 PAT up 86% yoy	25 JAN 2010
HCL TECH	HCL Tech Q2 net profit dips by 35% yoy	25 JAN 2010
CEAT	CEAT posts Q3 net profit at Rs240mn	23 JAN 2010
MARUTI SUZUKI	Maruti Suzuki Q3 net profit up 221% yoy	23 JAN 2010
RELIANCE IND.	Reliance Industries net profit at Rs115.26bn during April-Dec'09	22 JAN 2010
ITC LTD.	ITC Q3 PAT up 27% yoy	22 JAN 2010
M&M	M&M Q3 standalone PAT zooms 849% yoy	25 JAN 2010
HERO HONDA	Hero Honda Q3 net profit up 78% yoy	25 JAN 2010
JET AIRWAYS	Jet Airways Q3 PAT at Rs1.06bn	25 JAN 2010
TATA TELE.	Tata Teleservices Q3 cons net loss at Rs1032.90 mn	25 JAN 2010
SAIL	SAIL Q3 PAT jumps 99% yoy	27 JAN 2010
DLF	DLF Q3 net profit up 26%DLF Q3 net profit up 26%	28 JAN 2010
TECH MAHINDRA	Tech Mahindra Q3 net profit at Rs1.72bn	22 JAN 2010
INDIA INFOLINE	India Infoline Q3 net profit doubles	20 JAN 2010
TVS MOTORS	TVS Motor Q3 revenue up 25.4% yoy	20 JAN 2010
ESSAR OIL	Essar Oil Q3 net loss of Rs. 2260 mn	23 JAN 2010

The Stock prices and the values of index are obtained from BSE database. The details of companies which declared earnings are taken from Money Control.Com. In addition, the data is free of day-of-the-week skew as the announcements are evenly spread across all four trading days.

The study of the announcements effect has been made by using the 32 earnings announcements of 32 companies in the BSE 500 index, which have announced earnings during the period last quarter of January 2010. 'Event study' methodology using daily returns along with the market model are used for the purpose of analyzing the earnings announcements effect. This method was originally introduced by Ball and Brown (1968) and Fama et al. (1969) and subsequently modified by Brown and Warner (1985); Campbell et al. (1997); and MacKinlay (1997) to determine abnormal return, average abnormal return and cumulative average abnormal return (hereafter will be referred as MacKinlay model (1997). The dates on which announcements are released are defined as the event dates (t=0), provided the stocks have been traded on that date. In the eventuality of announcement during non-trading days, the trading day immediately following the announcement has been assigned as event date. This has been done in order to investigate the announcement effect immediately after the announcement. The effects of announcements on equity share prices have been examined by taking daily-adjusted market price data. The 8 days surrounding the announcement of earnings (i.e., t = –4 to t = +4) is assigned as the 'event period'. For each announcement, the 4 trading day prior to the event window is used to determine the parameters for the market model, technically known as 'estimation window' (t = -4 to t = +4).

The first step in the analysis of the impact of actual stock repurchase on the level of abnormal returns requires computing the market adjusted Cumulative Abnormal Returns (CAR) for the sample of total 32 firms over a five-day trading period starting on the announcement date. By examining this shorter interval, the analysis investigates whether the abnormal returns just after the announcement ultimately impact the subsequent levels of repurchases. (The announcement date is included since the publication date will be normally a trading date and investors have the opportunity to respond to such announcements on the same date.) Standard event-study procedures as used by Comment and Jarrell (1991) and Stephens and Weisbach (1998) are used to calculate the

abnormal returns. The abnormal return in any given period is the market model residual, which is the difference between the stock's actual return and the predicted return based on the market return for that period. Hence the market adjusted abnormal returns are calculated as:

ARij= RTij- RM.....equation (1)

Where ARij is the abnormal return for firm j on day i.

RTij is the actual return for firm j on day i.

The total percentage return to shareholders (RTt) on day t is given by the expression:

(RTt) = [(Pt - Pt -1) (100)]/(Pt –1).....equation (2)

And RMi is the return on the BSE 500 Index on day i.

The market adjusted abnormal returns are calculated as in Equation (1) above. The five-day cumulative abnormal returns for each firm are calculated as:

5-Day CARij =∑ARij , for days i = 0, 1, 2, 3, 4.....equation(3)

Where, the announcement day is day 0

Cumulative abnormal returns (CARj)are then averaged over the five-day period starting on the announcement date to obtain the five-day cumulative average abnormal returns (CAAR) as:

5-Day AAR = (∑CARj)/n for all firms j = 1,2,.....n.....equation (4)

The average abnormal returns (AAR) are then compared for statistical difference between the means at different days in estimation window. Statistical significance in the difference in the means would indicate that abnormal return is related to the level of repurchases undertaken during the estimation window.The next step is to compute the daily cross sectional average abnormal returns (***AAR,***) for a specific day. It is computed by summing the daily abnormal returns for each observation across companies and dividing this figure with the total observations on that day. This is done for the whole estimation window.

In order to find out the impact the announcements have on the stocks, we calculate the average of the Abnormal Returns (AAR) using the period of -4, +4, which implies that particular change. Where ARit is the abnormal return for the ith firm on day t and n is the length of the estimation period. According to the theory, when abnormal performance is spread in a period, that is, not clustered, the best way to calculate AAR is CAR. Cumulative Abnormal Return (CAR) is the sum of AARt of the firms during the estimation period –4, +4.

The t statistic of the CAR is used to test the hypothesis whether the AAR on the exact day of the announcement and the CAR during the estimation period are both zero. Since the event dates spread into periods, we can assume cross sectional independence of the data. Further we also use paired t test to observe the effect of announcement before and after the announcement. The mean of different days CAR is also tested with ANOVA. Although this study provides significant insight into the effectiveness of earnings announcement, it is not without its limitations. Companies for this purpose are selected on the bases of random sampling. Abnormal returns in stocks are due to concerned announcements (earnings) and assuming other factors as constant and they do not influence share prices. This study concerns only a particular period and hence business cycle influence is not adjusted according to the exposure of the company, but according to the market movement.

IMPACT OF EARNINGS ON THE STOCK PRICE AND RETURN

Table 2 presents the descriptive statistics of 5 day CAR before and after the earnings announcements. Further table 3 and table 4 depict the correlation between the two and the paired t test statistics respectively. It is evident from the descriptive statistics that 5 day CAR before the announcement is 1.24 where as the 5 day CAR after the announcement is -2.01. Results indicate that announcement of earnings have different sort of implications resulting into sharp decline in the 5 day CAR after the announcement. In general negative value of 5 day CAR after the announcement refers to the negative signaling effect. It may be due to poor performance of the firm in the recession period where the investors have taken negative signal resulting into negative CAR. The paired sampled statistics between pre CAR and post CAR is very low (0.08) and insignificant (Table 3) reflecting the neutral role of earnings announcement in the fluctuation of stock price and return. Thus the announcement of earnings can't confirm the direction of stock return before and after the event resulting into limited predictive ability. On the other hand the results of paired t test (Table 4) confirm that the stock returns are significantly different before and after the announcements. Thus we reject the null hypothesis H0 that there is no impact of earnings announcement on the stock return. Table 5 depicts the CAR and AAR surrounding earnings announcements in different periods centered on the announcement day (announcement day = 0). We find majority of the CAR and AAR at different days (1 to 4) are insignificant independently attributing to unknown sentiment driven fluctuations in the stock market but the direction of movements in the price is almost negative after the announcement. We further observe that CAR at different days is also insignificant (Table 6: ANOVA Results) leaving negligible scope for arbitrage. It further indicates that the information is quickly absorbed by the stock price probably due to larger firm size in our samples.

TABLE2: PRE AND POST 5 DAY CAR (EARNINGS ANNOUNCEMENTS)

Paired Samples Statistics (Pre and Post CAR in earnings announcements)					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	precar	1.243	32	5.22	.923
	postcar	-2.01	32	5.40	.955

TABLE 3: PAIRED SAMPLES CORRELATIONS (PRE AND POST CAR IN EARNINGS ANNOUNCEMENTS)

Between Pre and Post 5 day CAR				
Pair 1	precar & postcar	N	Correlation	Sig.
		32	.086	.640

TABLE 4: RESULTS OF PAIRED T TEST BETWEEN PRE AND POST CAR IN EARNINGS ANNOUNCEMENTS

Pair 1	precar - postcar	Paired Differences					
					95% Confidence Interval of the Difference		
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	Sig. (2-tailed)
		3.26	7.18	1.27	.669	5.852	.015

TABLE 5: RESULTS OF T TEST ON AAR AT DIFFERENT DAYS ON EARNINGS ANNOUNCEMENT

Days	AAR	t TEST	CAR	t stats
4	-0.04358	-0.05121	-1.21088	-0.62286
3	-0.38983	-0.45809	-1.1673	-0.69501
2	-0.70718	-0.831	-0.77747	-0.5724
1	-1.31423	-1.54435	-0.07029	-0.0542
0	0.143834	0.169018	1.243944	1.004768
-1	0.003237	0.003804	1.100111	1.00435
-2	0.356523	0.418948	1.096874	1.113653
-3	0.288408	0.338906	0.740351	0.819678
-4	0.451944	0.531077	0.451944	0.531077

TABLE 6: RESULTS OF ANOVA ON CAR OF FOUR DIFFERENT DAYS IN EARNINGS ANNOUNCEMENTS)

ANOVA					
CAR					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.954	3	1.651	.060	.981
Within Groups	3504.956	128	27.382		
Total	3509.910	131			

CONCLUSION

This paper makes significant contributions to the growing literature in behavioural finance. The results support that the share prices drift negatively in the case of earning announcements in Indian stock market. The reason for such an observation could be large firms in our samples only. Large firms are subjected to greater attention by the market participants and therefore, fundamental information is quickly incorporated in prices, leaving no scope for earning superior returns. The study indicates that stock earnings announcements primarily serve as a signaling mechanism of firm's performance. This is in consistent with the findings of Cready and Gurun (2010) who identify a negative relation between earnings announcement surprises and aggregate market return. Thus in case of earnings announcements the markets immediately signaled a downward swing in the share price movement. But this negative signaling existed only for a day after the announcements, after which the extent of negativism of shares is almost insignificant. It may be due to faster absorption of information in larger firms. Thus the correction of price happens in a very short span of time leading to higher efficiency.

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CLIMATE CHANGE, ADAPTATION AND MITIGATION EFFORTS IN THE TRIBAL AREAS OF INDIA

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ABSTRACT

The economic impact of climate change is unequal and the thrust is more towards the vulnerable peoples like Tribals in India. Climate change disturbs their livelihood encompassing agriculture, hunting and fishing, minor forest produce, natural resources, tribal cultures, indigenous ecological systems, tourism, plants and animals, poverty, health, and frequent droughts. The Tribal people also add fuel to the worsening eco-systems by following jhum type of cultivation. It calls for a unique climate change adaptation and mitigation efforts to address their problems. The climate change destabilizes the economy, nibbles development efforts of the government and also widens inequality in distribution and opportunities. It costs heavily to the government to undertake mitigation efforts. India is forced to augment/divert resources to perform these investments and the tribal people are also forced to bear the cost. This study will focus on the economic impact of climate change, adaptation and mitigation efforts of the Government in the tribal areas of India based on secondary data.

KEYWORDS
Climate change, tribals, livelihood, adaptation, mitigation.

INTRODUCTION

Climatic change is an environmental problem and poses severe warning to the sustainable development in the tribal areas of India. Its impact on the tribal people is visibly seen in sectors like agriculture, non-agriculture, forestry, change in the quantity and quality of surface and groundwater sources, food security, natural resources, landscape, economic activity, human health, infrastructure etc. There are reasons to be concerned about the adverse effects of climate change which intimidate and cause dieback of natural eco-systems that sustain the livelihoods of tribals in the country. In India, the velocity of climate change is unprecedented and adds problems in dry farming, droughts, floods etc. This article will focus on the economic impact of climate change, adaptation and mitigation efforts in the tribal areas of India covering the following two aspects:

1. Glimpses of Indian Tribes and Tribal Development.
2. Climate Change, Adaptation and Mitigation efforts in Tribal Areas.

GLIMPSES OF INDIAN TRIBES AND TRIBAL DEVELOPMENT

Indian tribes, an oldest ethnological people are the aborigines or indigenous people or 'the Adivasis' of the country. There are 573 tribal communities accounting nearly 7.9 percent of the total population. They speak over 150 languages and 225 subsidiary languages. With a long history, they widely dispersed all over the country in hilly, forest and plain areas. The tribals living outside the Scheduled Areas are called as "Dispersed Tribals" while within the Scheduled Areas are noted as "Predominantly Tribal areas"[1].

In the initial years of planning, no specific tribal development programmes were implemented due to the non-interventionist approach[2] advocated by the founding fathers of Constitution of India. The Renuka Ray Team[3] of 1959 also made it clear that no deliberate measures were needed to make any haste process of tribal development programmes. However, the Dhebar Commission[4] had noted that without planning the physical needs of the tribals cannot be achieved.

Subsequently the Government of India has extended a number of development programmes by seriously considering poverty and high illiteracy of the tribals. In course of time, transport, communication, market, industry and the non-tribal's economic system have penetrated into the tribal areas. The non-tribals have settled in the tribal areas as traders, moneylenders, and officials. As a result a situation with no possibility of isolating the tribals from the effects of social, cultural, economic and technological changes taking place around the tribal areas aroused in the country. Majumdar has observed that there is no single group today which may be said to mark `zero' point of cultural contact[5]. It is imperative to note the report of a study team under the leadership P.Shilu[6] has cautioned about the tribals psychological adaptation and non-tribals entry and the resultant problems in the tribal areas.

The Tribals depend on the forest and forest-lands not only for its natural vegetation but also as a source of livelihood. "The ties with the forests go back to the times of immemorial. Further they have enjoyed freedom to use the forest, in whatever manner they like, to such an extent that they have developed a conviction that they belong to the forest and the forests belong to them"[7]. However, in the course of time the measure initiated in the forest areas under the pretext of scientific management of forest had halted this ingrained belief and tribals access to forest area has been shrunk in size. In some areas, the tribals entry into forest has been constrained due to forest conservation Acts.

With all these the tribals in India have been exposed to the non-tribal culture, food habits, socio-economic pattern, psychological impacts etc. The entry of plastic items, climate volatility and changed life style has created environmental problems in the tribal areas. Altogether, the tribal areas are in transition and they are unable to comprehend and withstand the effects of development.

CLIMATE CHANGE, ADAPTATION AND MITIGATION EFFORTS

Assam, Meghalaya, Mizoram, Manipur, Tripura and Nagaland are in the North Eastern Region, while Arunachal Pradesh and Sikkim are in the Himalayan region. These regions are the world's notable biodiversity hotspots with 52 percent of area under forest. In these regions, the rapid changes in topography cause climate changes and also vulnerable to the changing climate wetter and warmer periods, opportunities for transmission are likely to increase for a longer. The precipitation is projected to increase by 5-10 days and the temperature may rise from 1.8°C to 2.1°C by 2030. The number of rainy days may increase by 1-10 days with intensity of rainfall to increase by 1-6 mm/day.

In the Himalayan region, the annual temperature may vary from 0.9±0.6 °C to 2.6±0.7°C in 2030's. The net increase in temperature is ranging from 1.7°C to 2.2°C during the period and the seasonal air temperatures also show rise in all seasons. The temperature in Western Coastal India may vary from 1.7 to 1.8°C. Temperatures are also projected to rise for all seasons for all the three simulations from 1.5 to 2.2°C, with the rainfall period of June, July, August and September showing the minimum rise in all seasons. As regarding the East Coast India the surface annual air temperature may rise from 28.7°C to 29.3°C. The standard deviation is from 0.6 to 0.7 respectively. The maximum increase in temperature is for March, April and May would be ranging from 1°C to 3.3°C[8].

The Tribal people also add fuel to the worsening eco-systems by following jhum type of cultivation. Indian tribes as cultivators, practice either shifting cultivation or settled cultivation. Shifting cultivation[9] is an age old institution adopted by the tribals of Assam, Orissa, Madhya Pradesh, Bihar and to certain extent in the other tribal areas. It is used not because of any deep-rooted superstition but because of absence of an alternative to it[10]. Contrary to this, Baigas of Madhya Pradesh and Orissa, practice shifting cultivation by considering it as an order from Bhagwan. In the Himalayan and the North-East- regions, of the total cropped area of 4.2 million hectares, about 2.7 million hectares i.e., 64 percent of land is under shifting cultivation. This raises the temperature of the soil, carbon and

nitrogen equilibrium summarily. The carbon level is lost and the nitrogen is converted into nitrate which leads to a loss of about 0.824 million tonnes of NPK from the soil. According to experts such practices in the fields wipe out fauna and bacteria[11].

PHOTOGRAPH 1: FOREST FIRE CAUSED BY JHUM BURNING IN A TRIBAL AREA

Source: Government of India, State of Environment Report, 2009, p12.

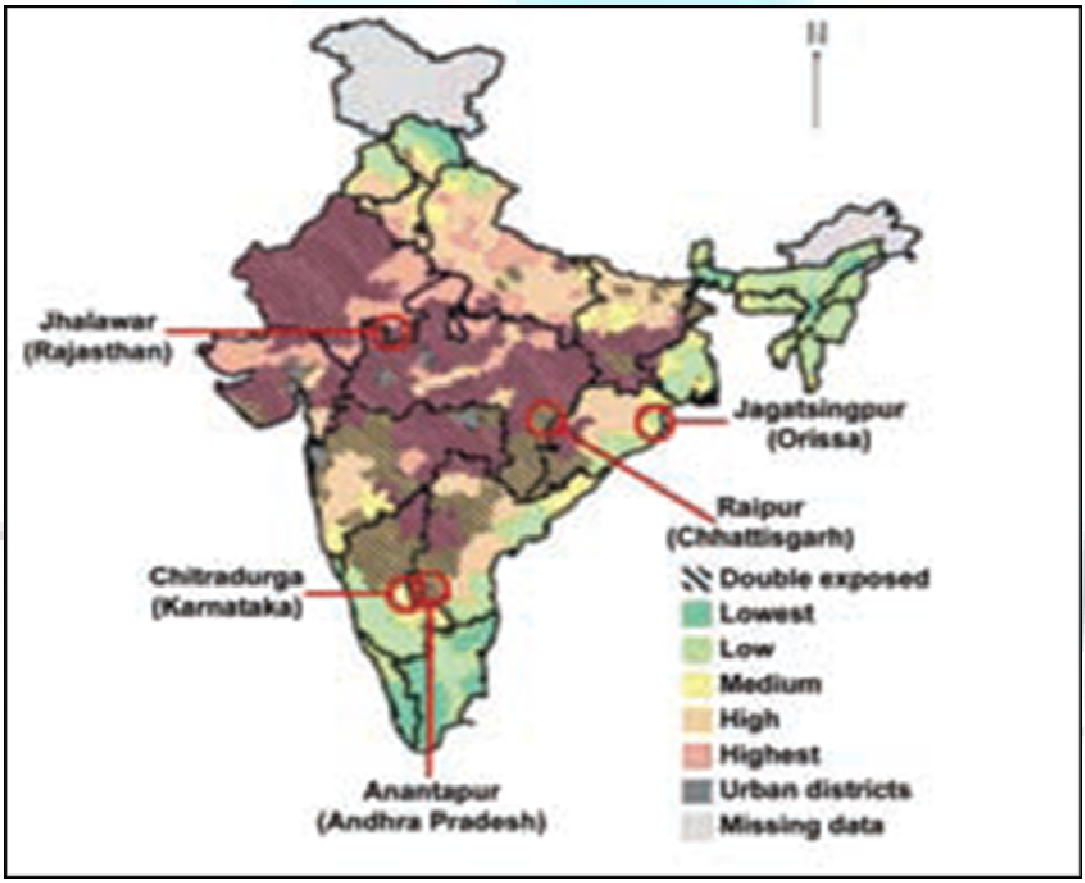
The health effects of climate change are seen from the eruption of vector borne diseases like malaria, schistosomiasis, dengue fever, diarrhea, heat or cold deaths due to cardio-vascular disease, malnutrition, heat and cold stress on people are more widespread. The brunt is severe to the economically poor people as they cannot afford to take precaution to offset the effects of climate change. It also causes additional expenditure to the exchequer of the Government and to the people.

The biophysical and socio-economic impacts of climate changes are matter of concern in the tribal areas. In addition, migration emanates urbanization pressures and add additional burden to the urban governance in terms of new housing policy, water, sanitation, health and hygiene policy, electricity, improved infrastructures etc.

The impact of climate change in the tribal area is landslides and floods due to heavy rainfall. With regard to agricultural crops, the yield of irrigated rice it is expected to gain marginally due to warming as compared to rainfed crop. But for Maize and sorghum the yields in all these regions are expected to fall in 2030 by about 40 percent. The Himalayan region is vulnerable to water induced disasters, fragile geo-environmental setting and economic under development[12].

Any adverse impact on agriculture will be bang on food security and health of the people. The extreme weather events occurring in the country emanates climate change. Some events in support of this show that: the glaciers in the North Himalayan are thinning down by about 16m every year. In Kashmir valley, 2/3rd of ground water levels have dropped due to the receding glaciers. In May 2002, heat waves were recorded in coastal districts of Andhra Pradesh and in 2003; twenty two out of twenty three districts in Andhra Pradesh were in the grip of a heat wave and 80 per cent of the state faced a drought. The desert region of Barmer in Rajasthan was affected by floods in 2006 and killed 140 people. The vulnerability of Indian agriculture to climate change is given in Map 2.

Map 2: Vulnerability of Indian Agriculture to Climate Change



Source: The Energy and Resources Institute, 2003-04.

Indian Agriculture is facing multiple challenges and hence Sharad Pawar cautioned that, 'irrespective of the outcome of the international negotiations on climatic change, agriculture has to become more competitive, efficient, profitable, and develop mechanisms to reduce its vulnerability. Indian farmers, scientists and policy makers have to address these issues in totality and develop strategies to increase our adaptive capacity. We have built capacity earlier to climatic

extremes such as drought by establishing buffer food stocks, strengthening irrigation infrastructure, and developing agricultural insurance schemes. We now need to put more emphasis on anticipatory adaptation measures, especially 'no-regret' adaptation strategies that will allow attainment of sustainable development goals even if there is no climatic change or its magnitude is different from current projections'[13].

Varying rainfall level results in soil erosion, soil moisture, reduces crop yields alters cropping patterns and irrigation. Severe droughts and dry periods due to climate change have resulted in water shortages for irrigated crops in some river basins of India. Occurrence of droughts and floods lead to loss of livelihoods, production and food insecurity. New varieties of rice need to be developed suitable to withstand weather conditions including droughts, floods and new pest and disease. Air temperature shortens the crop duration and reduces output and for instance a 0.5°C increase in temperature would reduce wheat crop duration by seven days and reduce yield by 0.45 ton per hectare in the high yield states of Punjab, Haryana and Uttar Pradesh. Aerobic rice cultivation is a boon in areas where water is scarce[14].

India is gifted with assorted agro-climate, topography and soil types. The agro-climatic zones categorized by the Indian Council of Agricultural Research are: Western Himalayan Region, Eastern Himalayan Region, Lower Gangetic Plains Region, Middle Gangetic Plains Region, Upper Gangetic Plain Region, Trans Gangetic Plains Region, Eastern Plateau and Hill Region, Central Plateau and Hill Region, Western Plateau and Hill Region, Southern Plateau and Hill Region, East Coast Plains and Hill Region, West Coast Plains and Ghat Region, Gujarat Plains and Ghat Region, Western Dry Region, and Island Region. In the country, there are 20 Agro-Ecological Regions on 1:4 million scale maps in terms of physiography, soils, climate, growing period, and available water capacity of the soil.

TABLE 1: CLASSIFICATION OF 'DRYLAND' REGIONS IN INDIA BY USING THORNTHWAITE CLASSIFICATION

Sl.No	Region	Annual AV. Rainfall (in mm)	Moisture Index (Thornthwaite Classification)	Growing Period (in days)	Total Land Area	
					in mha.	in %
1	Glaciers & Others	-	-	-	5.2	1.5
2	Hyper Arid	<100	<-83.3	0-60	22.9	7.0
3	Typic Arid	100-500	-66.7 to -83.2	60-90	22.7	7.0
4	Semi-Arid (dry)	500-750	-50 to -66.6	90-120	51.2	15.6
5	Semi-Arid (moist)	750-850	-49.9 to -33.4	120-150	72.2	22.0
6	Sub-humid (dry)	850-1000	-33.3 to -0	150-180	54.1	16.6
7	Sub-humid (moist)	1000-1500	0 to 20	180-270	39.8	12.1
8	Dry/Moist/ Sub- humid transition	1000-1500	0 to 20	210-270	21.0	6.4
9	Humid	-	21 to 99.9	210-330	16.6	5.1
10	Per humid	>2500	>100	>300	20.5	6.3
11	Transition Humid/Per humid	>2500	>100	>300	1.8	0.5
12	Total	-	-	-	327.9	-

The area of bio-climatic regions 1-6, which fall under the dry land regions (as per Thornthwaite Classification) = 228.3 mha

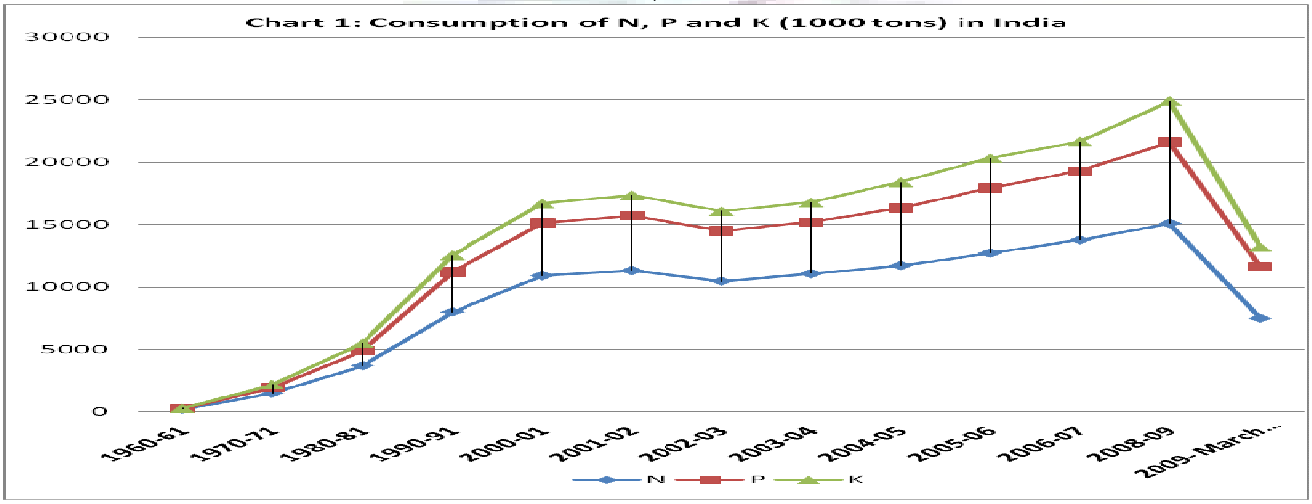
Source: National Bureau of Soil Survey and Land Use Planning, Nagpur.

Table 1 show that the arid regions get erratic and inadequate rainfall, frequent droughts, high evaporation, and intense heat. Therefore, the soils in these areas are not advantageous for crop cultivation. Per humid and transition humid/per humid areas get >2500 mm average annual rainfall and the moisture index is also >100. In India, the majority of land is Semi-Arid (dry) (15.6 percent), Semi-Arid (moist) (22 percent), Sub-humid (dry) (16.6 percent), while 7 percent of the land area is in typic and hyper arid. Chart 1 depicts the trends of growth in the NPK usage in India.

TABLE 2: ALL INDIA CONSUMPTION OF N, P AND K (1000 TONS)

Sl.No	Year	N	P	K	Total
1	1960-61	210.0	53.0	29.0	292.0
2	1970-71	1487.0	462.0	228.0	2177.0
3	1980-81	3678.0	1214.0	624.0	5516.0
4	1990-91	7997.0	3221.0	1328	12546.0
5	2000-01	10920.2	4214.6	1567.5	16702.3
6	2001-02	11310.2	4382.4	1667.1	17359.7
7	2002-03	10474.1	4018.8	1601.2	16094.1
8	2003-04	11077.0	4124.3	1597.9	16799.1
9	2004-05	11713.9	4623.8	2060.6	18398.3
10	2005-06	12723.3	5203.7	2413.3	20340.3
11	2006-07	13772.9	5543.3	2334.8	21651.0
12	2008-09	15090.0	6506.0	3313.0	24909.0
13	2009- March 09	7486.0	4132.0	1607.0	13225.0

Source: Government of India, Ministry of Agriculture, Agriculture Statistics at a Glance, 2006-07 and Ministry of Chemicals & Fertilizers, Department of Fertilizers, 2009-10.



In the cultivation of various crops, the use of NPK and other fertiliser and pesticides are high (more use for rice and wheat cultivation) which adds to water and air pollution in the country. In India, per hectare consumption of fertilizers has increased from 292 thousand tons in 1960-61 to 24909 thousand tons in 2008-09 with a growth rate of 8430.5 percent and the details are given in Table 2.

In India, agricultural development impacted on the environment through farming activities with soil erosion, land salination and loss of nutrients. The green revolution results in exploitation of land and water resources and use of fertilizers and pesticides. Leaching from extensive use of pesticides and fertilizers is an important source of contamination of water bodies. Intensive agriculture and irrigation contribute to land degradation particularly salination, alkalization and water logging[15]. Further, nearly 45 percent of total geographical area of India is affected by soil erosion due to ravines and gullies, shifting cultivation, cultivated wastelands, sandy areas, deserts and water logging[16].

TABLE 3: GREENHOUSE GAS EMISSIONS IN INDIA IN 2007 (THOUSAND TONS)

Sector	CO_2 emissions	CO_2 removals	CH_4	N_2O	CO_2 equivalent
Agriculture	-	-	13767.80	146.07	334405.50
Enteric fermentation	-	-	10099.80		212095.80
Livestock Manure management	-	-	115.00	0.007	2436.70
Rice cultivation	-	-	3327.00	-	69867.00
Soils	-	-	140.00	-	43400.00
Burning of crop residue	-	-	226.00	6.00	6606.00
LULUCF	98330.00	275358.00	-	-	-177028.00
Forestland	-	67800.00	-	-	-67800.00
Cropland	-	207520.00	-	-	-207520.00
Grassland	10490.00	-	-	-	10490.00
Settlement	-	38.00	-	-	-38.00
Fuel wood use in forests	-	87840.00	-	-	87840.00

Source: India: Greenhouse Gas Emissions 2007, Ministry of Environment and Forests, Government of India, May 2010, p14.

Table 3 portrays that the agriculture emitted 334.41 million tons of CO2 eq in 2007. The GHG emissions from the agriculture arise from enteric fermentation, livestock manure management, rice cultivation (69.87 million tons of CO2 eq or 3.27 million tons of CH_4), soils and burning of crop residue as shown in Chart 2. Land use land use change and forestry (LULUCF) has emitted 177.03 million tons of CO2, fuel wood emission was 67.80 million tons of CO, crop land sequestered 207.52 million tons of CO2, and grassland emission was 10.49 million tons of CO2. The data proves how agricultural sector adds to environmental hazards in the country.

The economic impact of climate change is unequal and the thrust is more towards the vulnerable peoples like Tribals in India. Climate change disturbs their livelihood encompassing agriculture, hunting and fishing, minor forest produce, natural resources, tribal cultures, indigenous ecological systems, tourism, plants and animals, poverty, health, and frequent droughts. Increasing population and decreasing land productivity, relatively higher dependence on natural resources like forests are also constraints for the region's environmental sustainability.

The adaptation techniques for agriculture include changes in cropping pattern, irrigation, fertiliser use and infrastructure. Further, UNFCCC's Article 4(4) urges to help vulnerable developing countries in meeting the costs of adaptation to the adverse effects of climate change. This may be performed using the adaptation fund established from the Marrakech Accords. The 'Buenos Aires Programme of Work on Adaptation and Response Measures' adopted by COP10 in 2004 is for funding to undertake adaptation activities in developing countries[17].

To combat the negative aspects of the climate change India has signed the UN Framework Convention on Climate Change in 1992 and also agreed the Kyoto Protocol in August 2002. Dr.Manmohan Singh, the Prime Minister of India has released the national climate action plan on 30 June 2008, which has eight missions viz., national solar mission; national mission for enhanced energy efficiency; national mission on sustainable habitat; national water mission; national mission for sustaining the Himalayan ecosystem; national mission for green India; national mission for sustainable agriculture; and national mission on strategic knowledge for climate change. It calls for a unique climate change adaptation and mitigation efforts for the tribals to address their problems.

The climate change destabilizes the economy and also gnaws development efforts of the government. This accentuates inequality in distribution and opportunities. It costs heavily to the government to undertake mitigation efforts. India is forced to augment or divert resources to perform these investments and the people are also forced to bear the cost. Timely efforts are needed to perform adaptation and mitigation measures, evolving policy frameworks, and for building institutional capacity in the tribal areas of India.

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A STUDY ON THE DETERMINANTS OF EXPORT DEMAND OF INDIA AND KERALA

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ABSTRACT

Exports have assumed a place of paramount importance in the development process of the economy. The process of economic reforms in the Indian economy has continued for more than two decades and the economy, now, has a completely different profile to that of June 1991. The aim of this paper is to try and identify the determinants of export demand of India and Kerala and finds that the explanatory variables are predominant in explaining India's disaggregate export performance during 1991-92 to 2008-09. Most exports are found to be responsive to world imports. On the upswing of international growth trajectory, exports are found to have responded to growing world demand. The estimated results indicate that world import, unit value of exports and import price affect India's real exports positively.

KEYWORDS
Exports, imports, demand and structural stability.

INTRODUCTION

Indian exports have received considerable empirical attention in the past. The reforms process that was in initiated in 1991 sought to integrate the Indian economy with the world and to improve the incentive structure towards more efficient utilization of resources so as to achieve faster economic growth, reduction of absolute poverty and promotion of human development. T.N.Srinivasan (1996) found that Indian exports could have done better in terms of gaining market share and has in certain commodities lost share to other developing countries. The policy implication derived from these include an urgent addressing of the infrastructural constraints, which would improve export competitiveness not only by reducing costs, but also by attracting Foreign Direct Investment (FDI); completion of financial sector reforms and avoidance of inflationary financing of fiscal deficits in order to prevent real appreciation of rupee.

Veena Mishra (1998) documents India's export performance and the various policy regimes in force since independence that explains its dismal nature. The external sector is rightly seen as being influenced not only by foreign trade policies but also by the whole plethora of controls on economic activity – in the form of industrial licensing, import controls, labour laws, exchange rate controls and the thoroughly unplanned nature of incentives that they resulted in preventing India from reaping the gains from a liberalizing and growing world in the post World War II period.

The role that export orientation can play in Indian development by placing Indian experience in the context of countries that have either adopted export orientation as a conscious choice in the past or are in the process of trade liberalization has been studied by Tendulkar (1999). The focus is on exploring long term trends, and the analysis is done for sub-periods. He explores the relationship between exports and economic growth on the basis of an international cross section of 31 industrial countries. A single equation model is used, because the author expects the broad directional conclusion not to change if a simultaneous equation model postulating a two-way causal relationship between exports and economic growth is used. The results confirm that contribution of export volume growth is independent of world trade situation.

In examining the linkage between exports and growth, Hajra and Sinate (1997) conclude that increased openness of the current trade strategy of India would make domestic growth more important in shaping the future of country's export expansion.

They measure the price competitiveness of India's exports using three indicators:

1. India's export prices relative to competitors
2. India's export prices relative to those of industrialized countries
3. Real exchange rate based on consumer price index.

OBJECTIVES

1. To identify the determinants of demand of exports of India and Kerala
2. To find out the structural stability for demand of exports of India and Kerala

PERIOD OF STUDY

The period of study is confined to 18 years from 1991-92 to 2008-09

TOOLS OF ANALYSIS

Regression models have been developed to identify the determinants of demand for and supply of exports for the commodities under study. Chow tests were used to understand the presence of structural variations if any, in the data. To measure the instability of economic variables Cuddy-Della Valle index (corrected coefficient of variation) is used which takes into consideration the long-term trend.

MODELLING EXPORT DEMAND

Even though export expansion across sectors was coincidental with change in trade regimes, it would be too naïve to attribute the observed acceleration in export growth to trade liberalization per se. Supply or demand factors on their own can only determine export behaviour for short periods but cannot explain a long run phenomenon. It is the combination of supply and demand effects that cause long run export performance (Goldstein and Khan (1978, 1985), Arize (1990) and Muscatelli et al. (1992).

The behaviour of exports and imports model was tried by Virmani (1991), distinguishing demand and supplies analyzing manufactured and primary products. Krishnamurty and Pandit (1996) also tried to model the export and import behaviour by analyzing four groups of products following model for export and import demand and supply for different categories of exports for the period 1970-71 to 1990-91. Their model was estimated using volume of exports, unit value exports, exchange rate, and world real GDP. Virmani (1991) estimated demand and supply functions using unit value index of India's exports, unit value index of world exports, Real Effective Exchange Rate and average wholesale price index of all commodities. Estimates of these equations reveal a positive relationship between growth rates and GDP in manufacturing and an increase in price of manufactured exports. Virmani and for Krishnamurthy and Pandit, they get the opposite result – an increase in manufacturing sector GDP relative to total GDP leads to a fall in price of such exports.

Joshi and Little (1994) estimate structural as well as non-structural equations for aggregate exports, for the period 1961-87. Their aggregate demand and supply functions include Indian export prices, price of exports of competitor countries, world income, domestic wholesale price index and domestic demand.

In the standard imperfect-substitute model of the trade literature, export demand function is specified as a function of a scale variable and relative export prices. In general, world GDP is considered as a scale variable according to Houthakker et al. (1969). Instead, in this model world import demand as a scale variable is employed as given by Winter (1984). The basic idea stems from the world link model by Sarkar (2004) where it is assumed that only the allocation decision of world imports has to be made according to sources of supply. Another difference in the model is the treatment of price variables in absolute term, instead of relative term. This implies that the demand function is homogenous of zero degree in prices and nominal income. Such assumption is expressed by including a single relative export price variable, which explains foreign consumers switch their demand between imports and domestic goods (Carone 1996).

The studies above underscore the importance of relative prices and world income in determining demand for Indian exports and of domestic income and relative prices in determining the supply. The trends in Indian exports are explained through variations in domestic factors namely income and price policies and through international circumstances – an approach that finds favour in the present study too, given the evidence presented in the ones reviewed.

EXPORT DEMAND FUNCTION OF INDIA

In this section, an attempt has been made to formulate India's export demand model. An estimation of the demand equation for total India's exports using time series data for the period from 1991-92 to 2008-09 is done. The demand for exports is taken as a function of the ratio of price of country's exports to world import demand, unit value index of India's exports and World's import price index, i.e.,

$$\ln X_d = \alpha_0 + \alpha_1 (\ln RWM)_t + \alpha_2 (\ln UVX)_t + \alpha_3 (\ln WMPX)_t + u_t \quad (1)$$

Where X_d = Real India's Export Demand

RWM = Real World's Imports

UVX = Unit Value Index of India's Exports

WMPX = World's Import Price Index

u_t = Error Term

REAL WORLD IMPORTS: The Real World's Imports (RWM) is measured in terms of the value of total imports of the world. The basic idea stems from the world link model where it is assumed that only the allocation decision of world imports has to be made according to the sources of supply (Sarkar 2004). An increase in real world imports will increase the real export demand of India. The coefficient associated with Real World Imports is expected to be positive and the value of α_1 less than one.

UNIT VALUE INDEX: To measure the price of India's exports in rupees, the Unit Value Index of India's Exports (UVX) is taken into account. Unit value index of exports is largely a monetary phenomenon. The rise in unit value is a function of a rise in domestic prices of exports as well as the world prices of exports. It is understood that foreign consumers switch their demand between imports and domestic goods and a higher price of exports for Indian goods leads to a decrease in demand for the products (Carone 1996 and Amal Sarkar, 2006). In other words, an increase in unit value of exports has an inverse relationship with exports. Therefore, the sign of the co-efficient α_2 is expected to be negative and less than one.

WORLD IMPORT PRICE INDEX: The variable World's Import Price Index is taken to measure the world import price. The purpose of world import price index is to measure the changes in the prices of goods and services exchanged in monetary transactions between India and the rest of the world. Rise in the price index leads to increase in exports. It is hypothesized that there is a positive relationship between the two. The coefficient is expected to be positive and the value of α_3 is expected to be less than one.

Since the variables are expressed in natural logarithms, the coefficients are elasticities. A priori, we would expect the coefficients of world import and world import price index would affect India's real exports positively. The co-efficient of India's unit value of export is expected to be negative. The equation is specified in natural logarithm term to get direct measure of constant elasticity from estimated equation with respect to explanatory variables. To measure the instability of economic variables Cuddy-Della Valle index (corrected coefficient of variation) is used which takes into consideration the long-term trend.

The data for variables pertaining to India are available on a financial year (April to March) basis, while that for variables pertaining to the world are available on a calendar basis. The variables for India therefore enter with a one-quarter lag in the equations, for example, the value for 1991-92 is used as that pertaining to the calendar year 1991. The time series data ranges from 1991-92 to 2008-09.

ESTIMATION AND INTERPRETATION OF FUNCTION:

On the basis of the theoretical specifications mentioned previously, a regression model based on OLS principle was run to estimate the log linear relationship. Table - 2 presents the coefficients of the estimated equation for the export demand function during 1991-92 to 2008-09.

$$\text{India} = -20.366 + 1.174\alpha_1 + 0.383\alpha_2 + 0.142_3 + u_t$$

($R^2 = 0.994$)

The estimated results indicate that real world imports, India's unit value of exports and world import prices affect India's real exports positively. In other words, the related coefficients have expected signs except for that of unit value of exports which is expected to be negative. The elasticities for the real export demand function are estimated to be 1.174 for world import, 0.383 for unit value index of India's export and 0.142 for world import price. Thus, the estimated elasticities are found to be elastic with respect to the given variables (Table 1)

The coefficient of Real World Import is significant at 1 percent level implying that the real world imports play an important role in determining demand for Indian goods. The demand for our exports is not in consonance with that of unit value indexes of India's exports the elasticity being 0.383. It is understood that foreign consumers do not switch their demand between imports and domestic goods and a higher price of exports for Indian goods does not lead to a decrease in demand for the products The result for world import prices is statistically not significant and it implies that it does not affect the exports of India.

The value of R^2 and adjusted R^2 are on the higher side for the variables under study. The Durbin Watson test is less than two which states that there is positive auto correlation among the selected variables. However the study is not attempting on eliminating the auto correlation at present.

It will be interesting to see whether there is instability in the export demand for the exports of India. For this purpose Cuddy Della Valle index has been used. The instability indices in Table No.3 (Cuddy Della Valle Index) show the highest instability. The reason for such instability can be attributed to the fact that during the post reform period, many competitors have started taking a lion's share of India's export trade by being able to charge a much lower price when compared to Indian prices.

TABLE – 1: EXPORT DEMAND FOR INDIA

Years	India's Exports (US $ Million)	Real India's Exports	World's Imports (1000 $)	Unit Value Index of India's Exports (Base 1978-79 =100)	World's Import Price Index
1991-92	17865.2	6107.76	3624950056	369.5	99.8
1992-93	18537.2	4238.48	3883352798	421.5	90.7
1993-94	22238.3	3909.98	3793677433	474.1	99.2
1994-95	26330.5	4690.63	4322481816	494.6	105.4
1995-96	31794.9	5323.59	5153894556	484.2	116.1
1996-97	33469.7	6566.48	5393478235	504.7	114.7
1997-98	35006.4	6631.60	5576998060	589.4	108.5
1998-99	33218.7	5636.02	5527101950	611.7	101.6
1999-00	36822.4	6019.68	5757992154	604.0	99.7
2000-01	44560.3	7377.53	6540626174	624.0	100.0
2001-02	43826.7	7023.51	6283204556	618.0	96.3
2002-03	52719.4	8530.65	6557581256	620.0	95.8
2003-04	63842.6	10297.19	7634150764	672.0	104.6
2004-05	83535.9	12430.94	9362766022	732.0	114.4
2005-06	103090.5	14083.40	10587295020	798	121.6
2006-07	126414.1	15841.37	12090236910	863	122.5
2007-08	162904.2	18876.50	14174782323	939.0	120
2008-09	185295	19733.23	15864753215	963.4	106

Source: IMF, International Financial Statistics, Various Issues The analysis of export demand
Government of India, Economic Survey, Various Issues
Food and Agricultural Organization Statistics

EXPORT DEMAND FUNCTION OF KERALA

The analysis of export demand of India gives rise to an important question whether all the states reflect the same behaviour. As a case study, Kerala has been chosen (Refer Table - 1 (A)). As mentioned earlier, Kerala is a leading agro based export state of the country. An attempt was made to estimate the export demand incorporating the real world imports (RWM), unit value index of India's exports (UVX) and World Import Price Index (WMPX) as the independent variables. The formulated function goes as follows:

$$\ln X_d = \alpha_0 + \alpha_1 (\ln RWM)_t + \alpha_2 (\ln UVX)_t + \alpha_3 (\ln MPX)_t + u_t \quad (2)$$

Where X_d = Export Demand of Kerala
RWM = Real World's Imports
UVX = Unit Value Index of India's Exports
WMPX = World's Import Price Index
u_t = Error Term

ESTIMATION AND INTERPRETATION OF FUNCTION

The present section is devoted to study the impact of the above independent variables on export demand on the exports from Kerala on the whole. The estimated equations are:

Kerala = $-8.141 + 0.035\alpha_1 + 2.239\alpha_2 + 0.659\alpha_3 + u_t$

($R^2 = 0.944$)

The results indicate that R^2 values are high for all the equations presented in the table. It ranges at 94 percent which implies that 94 percent of changes in export demand is explained by the changes in hypothesized variables. The real world imports, the unit value index of India's exports and world import price index shows a positive influence on the dependent variable namely Export demand of Kerala. The coefficients arrived at for unit value index is statistically significant and goes against our theoretical expectations. It is understood that foreign consumers do not switch their demand between imports and domestic goods and a higher price of exports for Indian goods does not lead to a decrease in demand for the products. The F values are also significant for Kerala. Theoretically also it is found that the exports are facing cut throat competition from other countries and heavy fluctuations are noticed in the exports of these commodities. The Durbin Watson test reveals that there is auto correlation among the identified variables for the commodities exported from Kerala.

TABLE – 1(A): EXPORT DEMAND FOR KERALA

Years	Kerala's Exports (US $ Million)	Real India's Exports	World's Imports (1000 $)	Unit Value Index of India's Exports (Base 1978-79 =100)	World's Import Price Index
1991-92	1648.01	563.42	3624950056	369.5	99.8
1992-93	1757.73	390.99	3883352798	421.5	90.7
1993-94	2481.55	370.75	3793677433	474.1	99.2
1994-95	3480.23	523.42	4322481816	494.6	105.4
1995-96	4088	703.65	5153894556	484.2	116.1
1996-97	4435.71	844.28	5393478235	504.7	114.7
1997-98	4898	878.88	5576998060	589.4	108.5
1998-99	5673.14	962.53	5527101950	611.7	101.6
1999-00	5681.26	928.77	5757992154	604.0	99.7
2000-01	5689.05	941.90	6540626174	624.0	100.0
2001-02	6251.2	1001.79	6283204556	618.0	96.3
2002-03	6532.76	1057.08	6557581256	620.0	95.8
2003-04	5980.45	964.59	7634150764	672.0	104.6
2004-05	8033.73	1195.50	9362766022	732.0	114.4
2005-06	10122.84	1382.90	10587295020	798	121.6
2006-07	10336.8	1295.34	12090236910	863	122.5
2007-08	11322.7	1312.02	14174782323	939.0	120
2008-09	12828.37	1366.17	15864753215	963.4	106

Source: IMF, International Financial Statistics, Various Issues
Government of Kerala, Economic Review, Various issues

TABLE – 3: EXPORT DEMAND OF INDIA AND KERALA: ESTIMATED EQUATION DEPENDENT VARIABLE: REAL EXPORT DEMAND TIME PERIOD 1991-92 TO 2008-09

Explanatory Variables	India	Kerala
Constant	-20.366 (-5.139)*	-8.141 (-0.818)
InRWM	1.174 (3.804)*	0.035 (0.045)
InUVX	0.383 (1.306)	2.239 (3.042)
InWMPX	0.142 (0.643)	0.659 (1.184)
R^2	0.994	0.944
Adjusted R^2	0.992	0.927
F	536.103	55.019
Durbin Watson	1.116	1.094

Notes: 1. Figures in parenthesis are t-statistics
2.*, **, and *** indicate significance at 1%, 5% and 10% level, respectively for a two tail test.

Source: Computed

STRUCTURAL STABILITY FOR DEMAND OF EXPORTS OF INDIA AND KERALA

It is important to have stability in the structure of exports because it determines the growth of various sectors in the long run. Inconsistencies in the structure of exports may lead to unstable growth of local industries and sectors. In any study on export behavior, the stability of it is very crucial. So an attempt to study the structural stability of demand for exports is made in this section. The stability of export is studied using Chow Test (Chow 1960). This test is based on a comparison of the sum of squared residuals appeared by fitting a single regression equation of the model to the entire sample with the sum of squared residuals obtained when separate equations fit to each sub sample of the data. This test assumes that the error variances are equal in sub samples. The null hypothesis for such test is that the estimated error variances do not differ significantly with each other.

The parameter stability test has been performed for long-run elasticities of export (Table - 3). The null hypothesis is that there was no structural break of export demand equation in 1991 trade liberalization policy. Alternative hypothesis is that there has been a structural break or instability in export demand and supply function. For such study, the Chow breakpoint test follows three steps. Firstly, the entire sample (1991-92 to 2008-09) has been split in two phases and the first sub-sample (1991-92 to 1999-00) was used to obtain initial elasticity estimates. Secondly, the elasticities have been re-estimated with the second sub-sample (2000-01 to 2008-09). Finally, it has been tested whether the coefficients differ in the second sub-sample by the F test. The calculated F statistics have been presented in Table 4. It is observed that $F^* > F_{0.05}$, (1167.5) and therefore it is inferred that the structural variation is present for India and it enables the researcher to accept the alternative hypothesis.

TABLE 3: TEST FOR EQUALITY OF ERROR VARIANCES IN SUB-SAMPLES FOR INDIA'S EXPORT DEMAND

Sub-Sample Period	Residual Sum of Squares	Degrees of Freedom	Error-Variance
1991-92 to 1999-00	0.007	4	0.4214
2000-01 to 2008-09	0.002	4	0.2266

Source: Computed

TABLE 4: CHOW TEST FOR THE STABILITY OF EXPORT DEMAND FUNCTION FOR INDIA

	Calculated Value	5% Critical Value
Real Export Demand InX_d	F- Statistics (4,9) = 1167.50	3.63

Source: Computed

CONCLUSION

In this study, using econometric model, the factors determining demand of exports from India has been explored and are found to be predominant in explaining India's disaggregate export performance during 1991-92 to 2008-09. Most exports are found to be responsive to world imports. On the upswing of international growth trajectory, exports are found to have responded to growing world demand. The estimated results indicate that world import, unit value of exports and import price affect India's real exports positively.

The results highlight the importance of demand effects in providing a viable strategy towards export growth. While prices provide the incentives for exports, world import was found to be significant in determining India's disaggregate export behaviour. In order to understand the stability of exports, Chow Test was used. The demand functions of export for the two time periods are not similar. This implies that the economic reform policy measures do have an impact on the export demand function.

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INDIA'S FUTURE CONSUMPTION OF COAL RESOURCES & INDONESIA AS A POTENTIAL PROCUREMENT DESTINATION

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ABSTRACT

The global energy requirement has grown at a phenomenon rate and the consumption of primary energy sources has been a very high positive growth. This paper focuses on the consumption of different primary energy sources and it identifies that coal will continue to remain as the prime energy source in foreseeable future. It examines the energy requirement perspective for India and demand of coal as the prime energy source. Economic development and poverty alleviation depend on securing affordable energy sources and Indian coal mining industry offers a bright future for the country's energy security, provided the industry is allowed to develop by supportive government policies and adopts latest technologies for mining. It is an irony that in-spite of having a plentiful reserve, India is not able to jack up coal production to meet its current and future demand. It discusses the strategies to be adopted for growth and meeting the coal demand.

KEYWORDS

Coal consumption, Energy, Economic Development, Growth, Procurement.

INTRODUCTION

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.

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. On the eve of the 59th Independence Day (on 15 August 2005), the President of India emphasized that energy independence has to be the nation's first and highest priority, and India must be determined to achieve this within the next 25 years.

LITERARY REVIEW

Masih and Masih (1996, 1997) in a multivariate framework examined the relationship between total energy consumption and real income of Asian economies such as India; Pakistan; Malaysia; Singapore; Indonesia; Philippines; Korea; and Taiwan. Energy consumption was found to be neutral with respect to income for Malaysia, Singapore and Philippines, unidirectional causality existed from energy consumption to GNP for India, exactly the reverse for Indonesia and mutual causality was present for Pakistan.

Ghosh (2005) using co integration and error correction modeling approach found the existence of a long-run equilibrium relationship between total petroleum products consumption and economic growth in India for the period of 1970-71 to 2001-02.

Ebohon (1996) examined the casual linkage between energy consumption and economic growth for Nigeria and Tanzania. The results showed a simultaneous causal relationship between energy and economic growth for both the countries.

OBJECTIVES OF THE STUDY

1. To analyze the future consumption of Coal Energy by India.
2. Which is the feasible Geographic location to obtain Coal energy till 2025 to India.

METHODOLGY OF THE STUDY

SOURCES OF DATA

The study considers the annual data from 1970-71 to 2004-05. The data relating to different forms of energy consumption and GDP at constant prices have been collected from www.indiastat.com and verified with Indian Petroleum and Natural Gas Statistics, Ministry of Petroleum Natural Gas Economics and Statistics division, Government of India, and Energy Statistics, Ministry of Statistics and program Implementation, Central Statistical Organization (CSO). Examining the link

between Energy Consumption & Economic growth in India, Centre for Development Studies, India 2009. World Energy Demand and Economic Outlook 2010 projections, total world consumption of marketed energy. The largest projected increase in energy demand is for non-OECD economies including India.

TOOLS USED

TIME SERIES

TREND PROJECTION

To emphasis the fact that, in forecasting the independent variable is time ,we will use 't' in equation instead of 'x', in addition we use T in place of 'yˆ'.Thus for a linear trend the estimated sales value expressed as function of time can be written as follows.

Equation for Linear Trend:

$$T_t = b_o + b_{1t}$$

Where:

T_t=Trend value of the time series in period t

b_o = Intercept of the trend line.

b_1 = Slope of the trend line.

t=Time

Computing the slope (b1) and intercept (b_0)

$$b_1 = \{\sum_t y_t - (\sum_t \sum y_t)/n\} / \{\sum_t^2 - (\sum_t)^2/n\}$$

Where:

y_t = Value of the time series in period t.

n = Number of period.

$\bar{y}$ = Average value of the time series; that is $\bar{y} = \sum y_t / n$

$\bar{t}$ = Average value of t; that is $\bar{t} = \sum t/n$

GROWTH MODEL

The following model has been used for finding the growth rates of the variables.

$$Y_t = a\, e^{b*t} e^{u}\, t$$

This can be written as

$$\text{Log } Y_t = \log a + b*t + u_t$$

Exponential Function:

In order to estimate the growth rates, the following function is used

$$Y_1 = f(t, u_t) \ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

$$Y_t = a\, e^{b*t}\, e^{u}\, t \ldots\ldots\ldots\ldots\ldots (2)$$

Where

Y = time period and

U = the stochastic disturbance term

The above relationship can be rewritten as

$$\text{Log } Y\, t = \text{Log } a + b*t + ut \ldots\ldots\ldots (3)$$

This can be estimated by the method of Ordinary Least Square (OLS).

Here

$$B = (dY/y)/(dt) \ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

Which indicates the exponential growth rate.It gives the proportionate change in "y" for a unit change in time.

T-test

Together with the value of r^2 it is necessary to compute the standard errors of the regression coefficient . Some econometricians report the t-ratios of the estimated coefficient in place of standard errors because this way of presentation makes the testing of hypothesis easier and direct .The t-ratio for 'b' is

$$T_b = b/S.E\,(b)$$

Where

$$S.E.\,(b) = \sqrt{Var\,(b)}$$

$$Var\,(b) = \sigma_u^2 / \sum (x_i - \bar{x})^2$$

$$\text{Est. Var}\,(b) = \hat{\sigma}_u^2 / \sum (x_i - \bar{x})^2$$

Where $\hat{\sigma}_u^2 / \sum e_i^2\,(n-2)$

Here $\hat{\sigma}_u^2$ = an unbiased estimator of variance of distributions and n = number of observations.

$$T_a = a/S.E.(\hat{a})$$

Where

$$S.E.(b) = \sqrt{Var\,(b)}$$

$$Var\,(b) = \hat{\sigma}_u^2 / \sum (x_i - \bar{x})^2$$

$$\text{Est.Var}\,(b) = \hat{\sigma}_u^2 / \sum (x_i - \bar{x})^2$$

Where $\hat{\sigma}_u^2 = \sum e_i^2\,(n-2)$

If t* < t (the tabulated value of t at (n-2) degree of freedom), we accept the null hypothesis*, that is, we accept that 'bˆ is not significant and the regression time does not appear to contribute to the explanation of the variations in Y.

If t* < t (the tabulated value of t at (n-2) degree of freedom),we reject the null hypothesis and we accept the alternative one ,that is ' bˆ' is statistically significant .Thus greater the value of t* the stronger the evidence that ' bˆ' is statistically significant .

COEFFICIENT OF DETERMINATION

To test whether our fit is best or not it is necessary to estimate r^2 , the coefficient of determination.r^2 measures the proportion of variations in the dependent variable that is explained by the independent variables. This definition is valid only when the particular regression model contains term. If our fit is perfect $\sum e_i^2 = 0$ and $r^2 = 1$, indicating the best fit. At the other extreme $r^2 = 0$, indicating that the estimated regression line is horizontal. Thus the limit of r^2 are ZERO and unity.

$$r^2 = 1 - (\sum e_i^2) / (\sum y_i^2)$$

Where

$\sum e_i^2$ = Unexplained sum of squares,

$(\sum y_i^2)$ = Total sum of square (Explained sum of squares)

$(b\hat{}\sum x_i^2)$ + Unexplained sum of squares.

Distance Calculations by the use of GPS Method (Global Positioning System)

Latitude & Longitude of a destination A and a Latitude & Longitude of a destination B = Distance between A & B, Distance / Speed = Time Required.

COAL IN INDIA: CURRENT STATUS AND OUTLOOK

The world cannot do without coal. This energy source covers more than one-quarter (28.4% in 2006) of all primary energy consumption and is used to generate nearly 40% of all electricity consumed worldwide. All scenarios and forecasts agree that coal consumption will be growing substantially, driven mostly by China

and India. According to the IEA reference scenario (World Energy Outlook 2007), these two countries are expected to account for 82% of the increase in global coal demand by 2030. The outlook for India gives cause for concern: despite a strong domestic coal industry, it could eventually become a major importer. If so, what will the economic, industrial and environmental consequences to be.

India ranks Number Six in the world for the consumption of primary energy (432 Mtoe in 2006). Its appetite for energy is growing extremely rapidly: it averaged 6.7% a year between 2003 and 20061. Given the demographics, consumption per capita is one of the lowest in the world (512 kg per capita in 2003), but this figure is steadily increasing.

CONSUMPTION RISING FAST

Coal continues to dominate India's energy portfolio reporting a figure of 238 Mt for 2006, India was the Number Three coal consuming country in the world. It represented 7.7% of the coal consumed worldwide (versus 2.4% in 1966). Coal covers more than half (56.2% in 2006) of domestic demand for commercial primary energy. Moreover, since 2002, it has become steadily more dominant: its share of the national market now stands at about the same level as in the early 1990s.

Demand for coal in India is growing at a particularly fast rate. For decades, it has been running much higher than the world average. Between 1976 and 2006, domestic coal consumption rose by 5.3% a year, versus 2% for the world. In recent years, average annual growth has accelerated sharply, exceeding 8% a year since 2003.

THE CHALLENGES FACING THE ELECTRICITY SECTOR

The power sector alone represents more than 75% of domestic consumption of coal, used to generate more than 69% of India's electricity. In recent years, coal has strengthened its position in this sector: in 1990, it only accounted for 65% of total output.

With installed capacity totaling 137,552 MW in 2005 (about 4% of world output), India has seen its electricity sector expand substantially. Electricity consumption rose 64% during the previous decade, placing India in the sixth position worldwide.

The rate of electrification has not reached 45% of the population: over 580 million Indians still do not have access to electricity. The Indian government aims to connect all villages to the power network by 2010. Reaching this especially ambitious goal will require the mobilization of the entire industry as well as large-scale investments.

As a result, most forecasts estimate that the power sector will grow by 8 to 10% a year between now and 2020, one of the highest growth rates in the world. For base production alone, about 68,500 MW in extra capacity will have to be added. In light of existing domestic economic conditions and resources, it is expected that coal-fired thermal power plants will cover most of this increase in capacity. The five-year XI Plan calls for the construction of several "ultra mega power projects", i.e. giant units designed to exploit economies of scale and series. Each will represent 4,000 MW (5 × 800 MW) in capacity. It is thought that five of these plants will be located near the coast to help cope with increased demand for imports (70 Mt a year).

A SURGE IN INDUSTRIAL GROWTH

Close to 20.5% of domestic coal is consumed by industry, especially two sectors: Steel and related industries (coking) use nearly 12% of domestic coal. Ranked seventh in the world, the Indian steel industry is growing fast: since 2004, production has increased at a rate of almost 10% a year. Coal is also used by the cement industry, which, according to the X Plan for 2002-2006, is growing at a rate of 6-8% a year. Sustained by a dynamic construction sector, cement production accounts for 3% of Indian consumption.

THE IMPACT ON SUPPLY

India possesses abundant coal resources (nearly 253 Gt). With nearly 96 Gt in proved resources (more than 10% of the world total), India ranks fourth in the world behind the United States, Russia and China. At the current rate of extraction, these reserves represent more than 200 years of production. The domestic reserves are composed almost entirely of bituminous coal, with 27 large accumulations in the east and the central part of the country. The lignite formations in the south only represent 2.6% of reserves. Although bituminous coal accounts for more than 97% of domestic reserves (versus 53% for the world), one should keep in mind that Indian coal is of mediocre quality. It is low-sulfur but contains a very high percentage of ash (between 30 and 55%), which gives rise to major logistics problems. Coking coal only represents 17.3% of proved reserves and less than 13% of total estimated resources.

INDIAN COAL DEMAND AND SUPPLY SCENARIO

In the recent years, 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).accounting for about 3.5% of the world commercial energy demand in the year 2003. Despite the overall increase in energy demand, 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.

OVER AMBITIOUS PRODUCTION TARGETS

India is the world's third largest producing country, with output standing roughly at 210 Mtoe. Since the coal industry was nationalized in the 1970s, large-scale investment and modernization programs have been carried out to boost production. In 30 years, average annual output has increased from about 70 Mt to nearly 432 Mt a year for FY2006-2007. There are 565 known mines in India. Most are open-pit mines and some are very large (> 10 Mt/year). Closed mining only represents 19% of national production.

THE END OF SELF-SUFFICIENCY

For many years, domestic production satisfied the bulk of domestic demand. In the last few years, however, production has had difficulty keeping up with the big increase in demand. In five years, coal imports have doubled, rising from 20 Mt to 41 Mt for FY2005-2006. Recent statistics show an even steeper uptrend, with imports reaching 61 Mt for FY2006-2007.

A STRUCTURAL COKING COAL DEFICIT

India is looking at a structural coking coal deficit. Its reserves are limited in size, therefore the country cannot increase production fast enough to keep up with the high growth of its steel industry. Inevitably, India must rely on imports, purchasing substantial quantities of coke and coking coal, particularly from Australia. These imports totaled close to 25.8 Mt for FY2006-2007. But steel-grade coals are not the only thing that India needs to import. Its huge demand for thermal energy has driven steam coal imports up (to 36 Mt for FY2006- 2007) and the pace is expected to accelerate. India needs to install 130 GW in electrical capacity in the next ten years, which is equivalent to 1 GW per month. And coal will continue to dominate the electricity mix in India and China as well.

MAJOR LOGISTICS PROBLEMS

Although great effort has gone into the modernization of the logistics chains in India, its entire electricity/coal supply system is coming under increasing pressure.

- In 2004-2005, a major supply shortage forced the largest domestic power generation company, National Thermal Power Corporation, owned by the government of India, to import close to 4 Mt.
- In 2005, the level of stocks at the 25 largest Indian power plants (about 35% of installed thermal capacity) did not exceed seven production days. Indian coal is mostly extracted in the east of the country and consumed in the north and southwest. Regularly, rail transport problems occur and customers must turn to imports. This situation has prompted key players in the electricity market to secure their supply of imported coal by building up their import

activities and announcing the acquisition of holdings in mines located in other countries. Since 2005, the Ministry of Coal has even recommended certain coal imports to prevent probable shortages at power plants located at a great distance from the mines. To handle this increase in imports, India needs to more than double port import capacity within five years. This may well be the next bottleneck.

WORRISOME FORECASTS ALREADY EXCEEDED

Coal imports for thermal power plants were conjectural but are now becoming structural. The outlook is for a massive increase in imports. By 2025, India may be importing nearly 181 Mt, a figure equivalent to that of Japan, currently the top importer in the world.

Obviously, the fact that India is depending more heavily on the world market will have repercussions on prices. Several signs indicate that India is impacting the international coal business to a greater extent. In this respect, the year 2007 has been instructive: facing a domestic coal shortage aggravated by logistics problems, cement manufacturers and electric power producers have increasingly turned to the international market. Today, India buys from the suppliers (South Africa in particular) that have always furnished the Atlantic Basin. This has led to sharp increases in the price of South African coal and helped push the CIF price in Europe higher.

COAL AND THE ENVIRONMENT IN INDIA

ENERGY EFFICIENCY AND THE KYOTO PROTOCOL

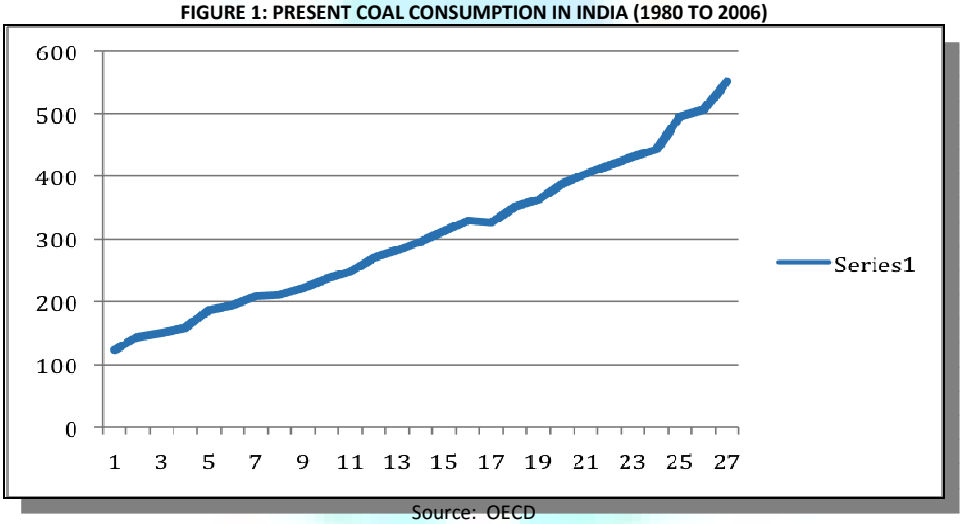
Facing tremendous energy demand, India introduced a policy to promote energy efficiency. In 2001, the Energy Conservation Act was passed. A federal agency, the Bureau of Energy Efficiency, was set up to coordinate actions in this area. Implemented in a booming economy, this policy is now showing the first encouraging signs of improving the energy intensity of the Indian economy (26 kBtu per dollar of GDP), which is comparable to that of the Czech Republic. India's CO_2 emissions totaled 1 Gt in 2003. According to the World Bank, they climbed 57% between 1992 and 2002. India ratified the Kyoto Protocol in August 2002. Since then, it has established the National Clean Development Mechanism Authority (NCDMA), which started operating in December 2003.

THE IMPORTANCE OF THERMAL POWER PLANTS

At present, power plants in India report low energy efficiencies — about 31% on average (versus 36.7% for OECD plants) — because they use "subcritical" technology. In the medium term, only one supercritical power plant, Seepat (3 × 660 MW), scheduled to start up in 2009, will be able to reach an efficiency exceeding 40%. This being said, it will not long remain isolated because, under the XI Plan (2007-2011) and XII Plan (2012-2016), all new plants will be supercritical. This may help moderate the sharp increase in coal consumption that is expected in the electricity sector.

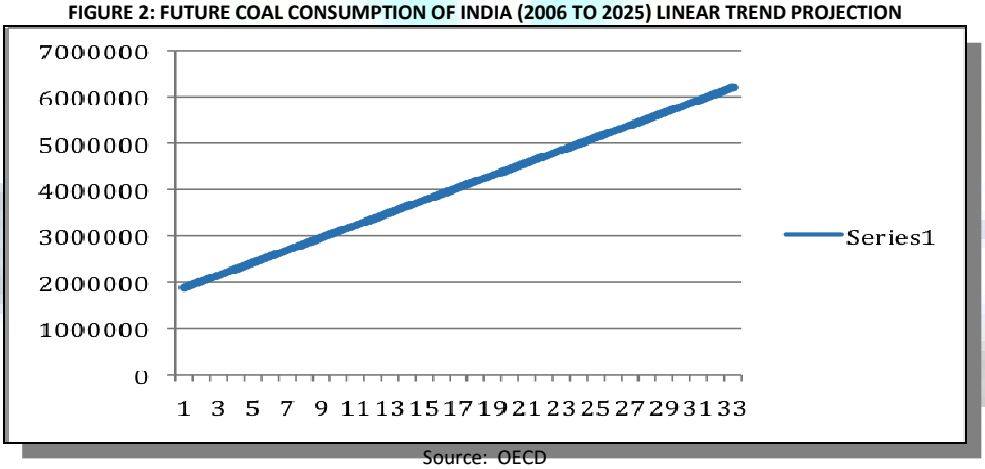
Experiments with IGCC technology are also underway in India. An initial pilot plant (6.2 MW) is to be followed by a demo-plant (100-125 MW) in the state of Uttar Pradesh. India also sees CO_2 capture/storage as a priority. It is a member of the Carbon Sequestration Leadership Forum (CSLF) and involved in Future Gen, a US government project to build and operate a near zero-emissions coal- fueled power plant.

FIGURE 1: PRESENT COAL CONSUMPTION IN INDIA (1980 TO 2006)



Source: OECD

FIGURE 2: FUTURE COAL CONSUMPTION OF INDIA (2006 TO 2025) LINEAR TREND PROJECTION



Source: OECD

FUTURE SCENARIO

Increasing pressure of population and increasing use of energy in different sectors of the economy is an area of concern for India. With a targeted GDP growth rate of 8% during the Tenth Five-year Plan, the energy demand is expected to grow at 5.2%. Driven by the rising population, expanding economy, and a quest for improved quality of life, the total primary energy consumption is expected to about 412 MTOE (million tonnes oil equivalent) and 554 MTOE in the terminal years of the Tenth and Eleventh Plans, respectively (Planning Commission 1999). The International Energy Outlook 2005 (EIA 2005b) projects India's gas consumption to grow at an average annual rate of 5.1%, thereby reaching 2.8 trillion cubic feet by 2025 with the share of electric power sector being of 71% by that time. Coal consumption is expected to increase to 315 MT over the forecast period. In India, slightly less than 60% of the projected growth in coal consumption is attributed to the increased demand of coal in the electricity sector while the industrial sector accounts for most of the remaining increase. The

use of coal for electricity generation in India is expected to increase by 2.2% per annum during 2002–25, thus requiring an additional 59 000 MW of coal-fired capacity. Oil demand in India is expected to increase by 3.5% per annum during the same time.It is quite apparent that coal will continue to be the predominant form of energy in future. However, imports of petroleum and gas would continue to increase substantially in absolute terms, involving a large energy import bill. There is, therefore, an urgent need to conserve energy and reduce energy requirements by demand-side management and by adopting more efficient technologies in all sectors.

INDIA'S POWER CONSUMPTION TO ZOOM NEXT DECADE

Electricity consumption in India, currently at some 600TWh annually, is set to double by next decade, by then it would have surpassed Russian levels in the process. KPMG's Global Advisory Practice released a power industry research published under the title 'Think BRICS' reveals that in order to supply this extra electricity, total generating capacity should jump by 90 GW, to 241GW, with an increased emphasis on nuclear, clean coal and renewable, including solar and small-hydro.

The survey finds that while the state and federal governments have initiated reforms, legislation designed to supply electricity to all consumer groups, conservative elements, social programs; systemic weaknesses and contradictions within frequently combine to stifle progress. Additionally factors like increasing economic activity, wealth and population, an improved standard of living and infrastructure developments are all expected to underline a continuous increase in demand for power in the next decade.

With the per capita GDP rising by about 8 percent per year in 2000-2008, the growth in energy demand is enormous; in particular regarding electricity. While private sector investment in generation is increasing, India could face challenges until 2020 to comfortably meet its demand."

According to the study, the country's peak power capacity deficit is expected to widen in 2010 to 12.6 percent of total capacity, up from 11.9 percent last year. In addition to the generation deficit, this deficit is also contributed by the inefficiencies in the transmission and distribution systems and electricity theft. To combat this, some respondents expressed confidence in government assurances on formation of an independent regulatory system which will support growth in private investment, in public-private partnerships. They also point to the private investors, who have already made a start in building independent power plants, with the share of privately generated electricity currently at around 13 percent of the total and rising.

Coal, which already provides almost 70 percent of India's power, will remain the dominant primary fuel, holding out commercial opportunities to those producers who are global leaders in high efficiency, clean-burn plant. But with India needing to diversify production, openings will exist for nuclear, gas and small hydro schemes. Also the need to extend basic electricity to vast rural population means that there are massive opportunities in terms of wind, biomass and, if we can get the prices right, especially solar energy. The OECD survey also reveals that as compared to the other BRICS countries, India had the second highest growth rate between 2000 and 2008 with an electricity consumption of 5.7 percent. Despite this the country has the lowest electricity consumption per capita out of the BRIC countries. India's electricity consumption per capita is expected to be roughly 841 kWh in 2020, representing only about one quarter of the global average. "While government finances will find it impossible to manage alone, private finance and skills are largely available if investors feel the regulatory and legal framework is made to work for a fair return." India's coal demand may more than triple in the next two decades as Asia's second-fastest growing major economy seeks the fuel to generate electricity and run steel.

INDONESIA AS A COAL ENERGY PROCUREMENT POTENTIAL FOR INDIAN FUTURE COAL ENERGY CONSUMPTION

According to the 2010 BP Statistical Energy Survey, Indonesia had end 2009 coal reserves of 4328 million tonnes, 0.52% of the world total. Indonesia had 2009 coal production of 252.47 million tonnes, 4.55% of the world total. The world's major producers are China, the USA, India, Australia, Russia, Indonesia and South Africa. Indonesia had 2009 coal consumption of 30.47 million tonnes oil equivalent, 0.92% of the world total. Indonesian coal production has increased in recent years, and Indonesia is currently the world's third largest exporter of steaming coal (after Australia and China). According to the 2008 BP Statistical Energy Survey, Indonesia had end 2007 coal reserves of 4328 million tonnes. Indonesia is one of the leading exporters of sub-bituminous coal which represents the bulk of Indonesian coal production. According to the 2008 BP Statistical Energy Survey, Indonesia had 2007 coal production of 174.83 million tonnes, and consumption of 27.8 million tonnes oil equivalent. Most of Indonesia's coal reserves are situated in Sumatra in the south, with the balance located in Kalimantan, West Java, and Sulawesi. Coal quality varies, with lower grade lignite (59%), sub bituminous (27%) and high grade bituminous and anthracite (14%).

Indonesia adopted a National Coal Policy in January 2004, which seeks to promote the development of the country's coal resources to meet domestic requirements and to increase coal exports. The state-owned PT Tambang Bukit Asam is one of the five largest coal producers in Indonesia. Almost a quarter (22%) of its production is exported to international markets, including Japan, Taiwan, Malaysia, Pakistan, Spain, France and Germany. The company has mineable reserves of approximately 7.3 billion tons or 17% of the total coal reserves in Indonesia.

Kaltim Prima Coal, located in northeast Kalimantan, has one of the world's largest open pit mining operations. Kaltim Prima Coal is 100 per cent owned by PT Bumi Resources Tbk.

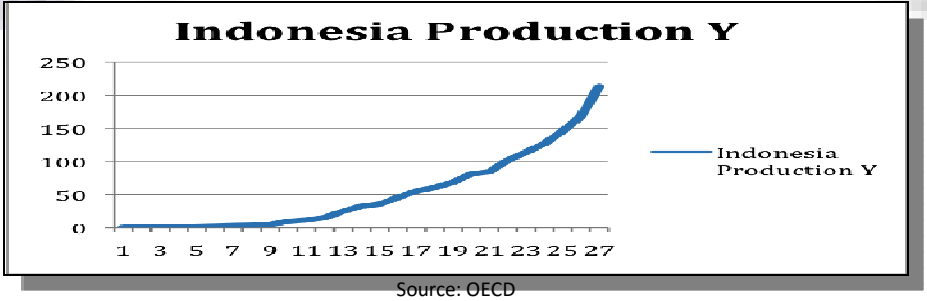
TABLE 1: TOP COAL EXPORTERS (2009)

	Total of which	Steam	Coking
Australia	259Mt	134Mt	125Mt
Indonesia	**230Mt**	200Mt	30Mt
Russia	116Mt	105Mt	11Mt
Colombia	69Mt	69Mt	-
South Africa	67Mt	66Mt	1Mt
USA	53Mt	20Mt	33Mt
Canada	28Mt	7Mt	21Mt

TABLE 2: TOP TEN HARD COAL PRODUCERS (2009)

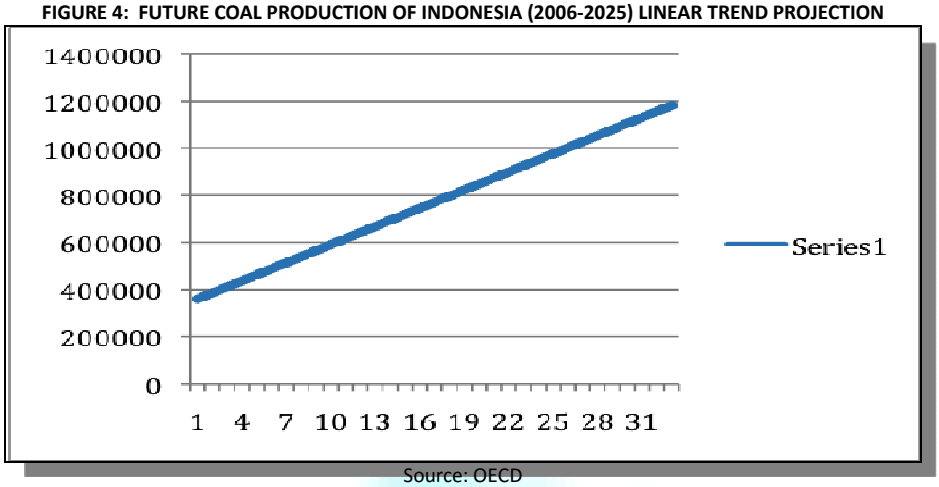
PR China	2971Mt	South Africa	247Mt
USA	919Mt	Russia	229Mt
India	526Mt	Kazakhstan	96Mt
Australia	335Mt	Poland	78Mt
Indonesia	**263Mt**	Colombia	73Mt

FIGURE 3: PRESENT COAL PRODUCTION OF INDONESIA (1980-2006)



Source: OECD

FIGURE 4: FUTURE COAL PRODUCTION OF INDONESIA (2006-2025) LINEAR TREND PROJECTION



Source: OECD

TABLE 3: COAL FACTORS BY PERCENTAGE AND GRADING

Coal Factors by %	Domestic India	Australia	South Africa	Indonesia
Total Moisture	5	8	7	15
Ash Content	40	12	15	5
Volatile Matter	25	30	26	35
Sulphur Content	0.5	0.5	0.6	0.5

From table 3, it is observed that 5% of Ash factor of Indonesian Coal makes the logistical movement economical & efficient to Import Coal to India. The coal logistical movement of India will be more expensive than procuring coal resources from Indonesia because of the less ash content.

TABLE 4: TESTS: ACCURACY OF COAL PRODUCTION BY USING GROWTH MODEL

Coal Production	Growth	Correlation	R^2	T-Ratio	F
India	4.887338672	0.996902271	0.993814139	35.73963189	1277.321288
Indonesia	13.52102604	0.990872371	0.981828055	20.60059306	424.3844346
Australia	3.708973381	0.979173546	0.958780833	13.35717849	178.4142171

From the table 4, Growth rate of Indonesia coal production is higher comparative to India and Australia. It can be stated that the Coal consumption of Indonesia is less comparative to India and Australia.

TABLE 5: TESTS: ACCURACY OF COAL CONSUMPTION BY USING GROWTH MODEL

Coal Consumption	Growth	Correlation	R^2	T-Ratio	F
India	4.90483517	0.980100478	0.960596948	13.68740956	187.3451803
Indonesia	1.417159121	0.237450117	0.056382558	0.164169241	0.02695154
Australia	1.677104887	0.872563236	0.761366601	4.408320901	19.43329316

Coal consumption rate of Indonesia is lesser comparative to India and Australia. It can be stated that Indonesia can export its coal resources to the countries which are in demand in meeting their requirements.

TRANSPORTATION BETWEEN INDIA & INDONESIA

The distance between Chennai, India to Jakartah, Indonesia is about Km 3654 .Where Cargo Ships can be used to transport coal from Indonesia to India. Indonesia is strategically significant in Coal Procurement to India because the next suitable destination would be Australia, which is more than twice the distance between India & Indonesia.

Chennai to Jakartah =7days of Transit Time (10 to 12 knots)

Chennai to Melbourne =16days of transit Time (10 to 12 Knots)

(Source: www.daftlogic.com/projects-google-maps-distance-calculator.htm)

RESULTS

By analyzing the future consumption & requirement of energy to India & rest of the world clearly states Indonesia, Australia & Central Asian Countries are the feasible strategic location to obtain Coal energy till 2030.

Indonesia with available Coal deposit & strategic location, ash factors makes feasible Coal Procurement destination for India in procuring future Coal energy. And sustained renewable energy production will substitute the existing fossil energy consumption by 2030.

LIMITATIONS

To keep the economic growth of India, Coal energy procurement is significant for India's national strategic energy policy. Till the existing thermal power plants are replaced with nuclear or other alternative renewable power plants. There should be a continuous supply of coal to meet the energy requirement of India. This will be affected due to bilateral agreements, Longer Logistical lead-time, quality of the raw materials and environmental Policies.

RECOMMENDATIONS

1. Need to improve the existing technology used in Coal Mining & Production in India.
2. Upgrading the existing Logistics facilities used in Coal Mines in India.
3. Setting up the new renewable energy like Nuclear Plant, Solar & Wind Energy to counter non-renewable energies like Thermal Power Plants.
4. Stricter environmental regulations need to be implemented to ensure lower carbon & harmful hazardous emissions.

CONCLUSION

Indian coal is some of the dirtiest in the world. Its high-ash quality, and the lack of infrastructure to clean it early in the process, creates a huge environmental risk for India, already one of the countries poised to be hit hardest by climate change. Coal is the most polluting fuel in terms of greenhouse gases and already accounts for 65 percent of India's CO2 emissions.

India's coal reserves are not as large as previously thought. At the current usage rate, India's reserves would be depleted in 80 years. At the projected rate of growth in production, that number becomes 40years. Transporting coal is cumbersome and inefficient. Most of the domestic reserves are concentrated in India's eastern and central states, far from the urban centers most in need of increased energy.

To keep Indians GDP growing close to double digit constant supply of energies like coal need to be fulfilled with the underdeveloped country like Indonesia plays a significant role in the future of India's coal supply to meet the demand of the Indian Economy.

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AN EMPIRICAL INVESTIGATION OF THE TRADE-OFF AND PECKING ORDER HYPOTHESES ON INDIAN AUTOMOBILE FIRMS

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ABSTRACT

There are two main capital structures theories which emerged from reflections on Modigliani and Miller (1958, 1963) i.e., Trade-off Theory and Pecking Order Theory. According to the trade-off hypothesis profitable firms should have a high level of debt ratio. Contrary to the trade-off hypothesis, the pecking order theory based on information asymmetry predicts a negative correlation between profitability and leverage. This article test the aforementioned hypotheses on a sample of Indian automobile firms from 1996-2009. Using a panel data analysis, the study found that pecking order theory could be successfully applied to the Indian automobile firms.

KEYWORD

Capital Structure, Determinants of capital structure, Pecking Order Theory, Trade-off Theory and Theories of capital structure.

INTRODUCTION

The pioneering paper published in 1958 by **Merton Miller and Franco Modigliani** is considered the cornerstone of modern corporate finance and capital structure analysis. The provocative M&M Theorem provides the conditions under which a firm's financing decisions do not affect its value. It states that, in a perfect capital market, in the absence of taxes, transaction costs, bankruptcy costs and asymmetric information, the value of a firm is unaffected by how that firm is financed. It does not matter if the firm's capital raised by issuing stock or selling debt. It does not matter what the firms' dividend policy is. In a subsequent paper (1963), they eased the initial assumptions and stated that under capital market imperfections (if the financial markets are competitive and corporations are taxed) the value of the levered firm equals that of unlevered firm plus the value of debt tax shield, due to the preferential treatment of debt relative to equity. So the firm's optimal capital structure is determined by the trade-off between the tax advantage associated with debt and the increased bankruptcy risk associated with the higher leverage. This statement predicts that financial leverage and economic performance are in a proportional relationship.

Due to the reflections on MM Theorem, the issue of capital structure has generated unforeseen interest among financial researchers. The results of empirical studies suggested over time that the determination of the optimal capital structure should take into consideration a trade-off between benefits and costs derived from debts. Thus, theories suggest that capital structure affects company's value. Although many empirical studies have been done since the Miller and Modigliani Theorem forms the bases for modern thinking on capital structure, no consensus has been reached with regard to the relationship between profitability and leverage. The three most significant theories that aim to explain the correlation between capital structure and the market value of the firm are the Static Trade-off Theory (STT), Pecking Order Theory (POT) and Market timing models.

STATIC TRADE-OFF THEORY

The essence of the Static Trade-off Theory is that a value maximising firm will consider the trade-off between the tax shelter provided by debt and the cost financial distress. **(Brealey and Myers, 2003).** The earliest version of this theory was elaborated by **Kraus and Litzenberger (1973)** and states that the optimal debt-equity ratio balances the corporate tax advantages of debt against the cost disadvantages of bankruptcy. Firm's adopting this theory could be regarded as setting a target debt-to-value ratio, and would continuously and gradually adjust their capital structures toward this target in order to maximise the firm's value. Hence, if firms seek external financing, they should issue equity when their leverage is above the desired target leverage, issue debt when their leverage is below the target or issue debt and equity proportionately to stay close to the target.

Myers (1984), however, suggests that when the firm's equity is under priced in the market, managers are reluctant to issue equity. The consequence is that potential investors tend to react negatively to an equity issue, because they perceive equity issues to only occur if equity is either fairly priced or overpriced, which conjuncture is not a benefit one to buy the firm's securities. As a result, managers are reluctant to issue equity. In conclusion, according to Static-Trade-off Theory (STT), highly profitable corporations with stable, tangible assets tend to have higher target gearing ratios as their assets are relatively safe. In contrast, companies with mostly intangible and risky assets tend to have lower debt-equity ratio and rely more heavily on equity financing. The trade-off theory fails to explain the simple empirical evidence that more profitable firms have lower leverage, and the use of debt decreases with profitability.

PECKING ORDER THEORY

Although the trade-off theory has dominated corporate finance circles for a long time, interest is also being paid to the pecking order theory. An intriguing approach to studying the optimal capital structure is the so called Pecking Order Theory (POT) **(Donaldson, 1961; Myers & Majluf, 1984; Myers, 1984)** constructed on the information asymmetry hypothesis, which suggests that there is no optimal capital structure. It states that because of asymmetries of information between insiders (managers) and outside lenders and investors, the companies prioritize their sources of financing, and establish a hierarchical order according to the law of least effort or of least resistance. **Myers and Majluf (1984)** assumed that a firm is undervalued because managers have, but cannot reveal, information concerning new and existing investment opportunities. Investors are aware of this asymmetric information problem and they discount the firm's new and existing risky securities when stock issues are announced. On the other side, managers avoid issuing undervalued securities by financing projects with retained earnings and with low-risk debt.

Myers (1984) suggested that the costs of issuing risky debt or equity overwhelm the forces that determine optimal leverage in the trade-off model. The result is the pecking order model, which states that firm finance investments first with retained earnings, then with safe debt, then with risky debt and finally with equity. In conclusion, according to Pecking Order Theory, more profitable firms borrow less, because they have more internal financing available and less profitable firms require external financing, and consequently accumulated debt. However, a number of studies reveal that pecking order theories are not sufficient to explain all capital structure choices **(Fama and French, 2002).**

Thus, POT implies that profitable companies would usually not opt for debt financing for their new projects because of the availability of sizeable amounts of internal funds. However, as per STT, profitable companies would give preference to the use of debt financing in view of the attraction of tax shield benefit available on borrowed funds. Thus, STT predicts that there would be a direct relationship between profitability and leverage, while POT expects the opposite i.e., an inverse relationship between them.

THE MARKET TIMING THEORY

The third theory, the Market Timing Theory (MTT) **(Baker and Wurgler, 2002)** based on the corporate mispricing, provides a new explanation to the financing decisions of the firm and challenges both the Trade-off and the Pecking Order theories. The model suggests that manager's recourse to equity issuance in time periods during which the company's stock have high market values relative to their book and past market values. This lowers the firm's cost of equity and benefits current shareholders at the expense of new shareholders. According to this theory, the equity issuing decisions is guided by the managers' capability to time the market accordingly to the relative cost of debt and equity.

LEVERAGE AND PROFITABILITY – LITERATURE REVIEW

Over the past several decades corporate finance researchers have devoted considerable efforts to transform rationalism of capital structure in to empiricism. The problem of developing a definite theory of capital structure and designing empirical tests those are powerful enough to provide a basis for choosing among the various theories is still unresolved.

The available literature on leverage and profitability depicts a great deal of theoretical controversies. The pecking order theorists **Myers (1984), Myers and Majluf (1984) and Shyamsunder and Myers (1999)** states that firms have a preference of using internal sources of financing first, then debt and finally external equity obtained by stock issues. The preferences are attributed to the cost gap between internal and external funds due to asymmetric information and agency problems. Holding it true profitable firms prefer capitalisation of earnings over debt and new equity issues respectively. This tendency portrays negative association between leverage and profitability of the firm. This association is one of the most systematic findings in the empirical literature. **(Kester, 1986; Harris and Raviv, 1991; Rajan and Zingales, 1995; Kester and Kolb, 1991; Larry et al., 1995; Nikolaos P. Eriotis, 2000; Both et al., 2001; Zhang et al., 2002; Bevan and Danbolt, 2004; Tong and Green, 2005; Fraser et al., 2006; Huang and Song, 2006; Martin Hovey, 2007; Mahdi Salehi, 2009; Gabriela Michalea and Raluca Antal, 2009),** their findings suggest that firms follow a pecking order. Whenever possible firms raise finance preferably from their internal sources, rather than bank loans and debt issue. The external equity financing is there last resort.

A study of South Arabia by **Sulaiman A. Al-Sakran (2001)** where debt do not offer any tax shield, also reported a negative relationship between profitability and leverage. Well known Agency Cost theory **(Jensen and Meckling, 1976)** also tends to support this relationship. **Booth, Aivaizian, Kunt and Maksimovik (2001)** documented that more profitable is firm, the lower the debt ratio regardless of how debt ratio is defined. Using a large sample of firms from 1979 to 1997, **Hovakimian, Opler and Titman (2001)** found that profitable firms have a lower leverage than less profitable firms.

On the other hand in accordance with Trade-off theory in opposite relationship may also be envisaged. Various researchers have analysed different types of trade-offs between capital structure and corporate taxes **(Modigliani and Miller, 1963; Miller, 1977),** personal taxes **(De Angelo and Masulis, 1980),** bankruptcy costs **(Stiglitz, 1972; Titman, 1984),** agency costs **(Jensen and Meckling, 1976; Myers, 1977),** and information asymmetry **(Myers and Majluf, 1984).** The stated rational is when firms are profitable they prefer debt to benefit from the tax shield **[Mseddi and Abid, 2004; Sohail Amjed, 2007 and Mahdi Salehi, 2009).** Other way around profitability is a good proxy for low default risk in consequence profitable firms can borrow more funds at cheaper rates as the likelihood of paying back the debt is greater. Firms use debt financing to dilute their cost of capital due to low Weighted Average Cost of Capital (WACC) firms have wider spans of acceptance for capital budgeting choices. Employment of low cost of capital in productive investment avenues enables firms to magnify their profits. The underlying supposition dictates positive relationship between leverage and profitability.

S. Klien, O'Brien and Peters (2002) argued that firms with lower expected cash flows find it more difficult to incur higher level of debt than do firms with higher level of expected cash flows. Companies with large and stable profits should, all else equal, make greater use of debt to take advantage of interest tax shields **(Anil and Marc Zenner, 2005). Jensen (1986)** reported that profitable firms might signal quality by leveraging up, resulting in a positive relation between leverage and profitability. **Joshua Arbor (2005)** reported significantly positive relationship between short-term debt and profitability and negative association between long-term debt and profitability. This shows that an increase in the long-term debt position is associated with a decrease in profitability.

Further, the empirical study of **Fama and French (2002)** realised on a large panel of firms from 1965 to 1999 reveals support for both theories. **Long and Malitz (1985)** found no relationship between capital structure and profitability. Based on previous literature, it is difficult to make a clear cut prediction of leverage effects on the firms' profitability. Firms may use their debt-to-equity ratio to affect profitability. Some firms choose a high debt-to-equity ratio, whereas others prefer to choose a lower one. The successful selection and use of the debt-to-equity ratio is one of the key elements of the firms' financial strategy. Empirical studies carried out found either a positive or a negative impact of leverage on firms' profitability. Thus, from this theoretical background, the researcher advances the following hypothesis.

H_o-There is positive relationship between leverage and profitability.

Thus, the purpose of the paper is to determine for Indian automobile firms support one of the theories of capital structure. The remainder of the paper is organized as follows. Section II presents the variables of the designed model, the data used in order to test the model and the empirical results. Section III presents the conclusions of this study.

VARIABLES OF THE MODEL

THE DEPENDENT VARIABLE

In the regression, the dependent variable is financial leverage, which is the debt to equity ratio of each firm as measured by the book value of total debt divided by the equity. The main differences among leverage proxies concern the use of book values versus market values and total debt versus only long-term debt. Because of data limitations, the study uses the book values rather than market values. Also, because most of the existing studies focus on a single measure of leverage and the most common measure of debt is total debt, the study defines the Financial Leverage (D_i) as the ratio between the book value of total debt and the book value of equity **(Rajan and Zingales, 1995; De Miguel and Pindado, 2001; Nivorozhkin, 2005)**

EXPLANATORY VARIABLES

The study select the explanatory variables which affect the target leverage of firms based on the assumptions of trade-off and pecking order theories of capital structure and on previous empirical work in this area.

The first explanatory variable is **Tangibility (TANG)** calculated as the ratio between tangible fixed assets and total assets. Tangible assets serve as collateral and the importance of collateral is greater for newly established businesses with no close ties to creditors. Indeed, the results for developed countries **(Rajan and Zingales, 1995; Titman and Wessels, 1988)** confirm this hypothesis. In transitions, economies, the importance of tangible assets as collateral is limited by a number of factors (underdeveloped and inefficient legal systems, illiquid secondary market) and a negative relationship between leverage and tangibility has been found in some previous studies **(Cornelli et al., 1998; Nivorozhkin 2002).** Based on the aforementioned arguments, the study expects to find a negative relationship between leverage and tangibility.

Another determinant of optimal capital structure used in many studies **(Titman & Wessels, 1988; Rajan & Zingales, 1995; Fama and Jensen, 1983; Nivorozhkin, 2005)** is the firm's size. Large firms are more likely to be debt-financed in comparison with smaller firms and that is because of several reasons. One of the reasons is mentioned by **Rajan and Zingales (1995)** who suggested that larger firms tend to be more diversified and thus, less prone to bankruptcy. Another reason is stipulated by the pecking order hypothesis which states that larger firms exhibit lower information asymmetry with financial markets and therefore they are able to issue more equity compared to small companies. The positive relationship between the size of a firm and its leverage may be reinforced in transition economies. The firm size (SIZE) can be measured either through the number of employee or through net sales. Because the net sales are a more appropriate proxy, the study uses the natural logarithm of net sales (Ln sales) and predicts a positive relationship between size and leverage.

The theories of capital structure state that market imperfections lead to the relevance of a firm's profitability (PROF) for its choice of leverage. The pecking order theory predicts that more profitable firms will have a lower debt ratio. In contrast to the pecking order theory, the static trade-off theory predicts a positive

relationship between leverage and profitability because higher profitability implies more income to shield. The study uses the Profit rate on total assets (PR) for firm's profitability and expects to find a negative relationship between leverage and profitability.

Mylers (1977) observed that high growth firms may hold more options for future investments than low growth firms. This statement is congruent with the Pecking order theory, which argues that high growth firms should use less debt for financing. Furthermore, according to the trade-off theory, firms with great growth opportunities (GROW) tend to borrow less than firms holding more tangible assets, because growth opportunities cannot serve as tangible assets. The study defines this proxy as sales growth. However, the firm's profitability positively related to sales growth.

A large non-debt tax shield reduces the expected value of interest tax savings and lessens the advantages of debt financing. **Biger, Nguyen and Hoang (2008)** consider the tax deduction for depreciation and investment tax credits as non-debt tax shield (NDTS). **De Angelo and Masulis (1980)** also suggest that tax deductions for depreciation and investment tax credits substitute the tax deduction of debt financing. The study use the ratio of depreciation to total assets as a proxy for NDTS and expected leverage negatively correlated with NDTS.

In summary, literature review shows that Tangibility, Size, Profitability, Growth and Non-debt tax shield are the determinants of capital structure. The basic regression model used in order to estimate the co-efficients of the determinants of capital structure is as it follows:

$$D_{it} = \beta_0 + \beta_1 \text{Tangibility}_{it} + \beta_2 \text{Size}_{it} + \beta_3 \text{Growth}_{it} + \beta_4 \text{Proftiability}_{it} + \beta_5 \text{Non-debt Tax Shield}_{it} + e_{it}$$

Where,

D_{it} – Measures leverage as the ratio of Total debt to Equity for firm (i) in the year (t)
Tangibility – Measures as the ratio tangible fixed assets and total assets for firm (i) in the year (t)
Size – Natural logarithm of firm's sales for firm (i) in the year (t)
Growth – Growth of firm's sales for firm (i) in the year (t)
Profitability – Measures the firm profitability with gross profit as a percentage of total assets for firm (i) in the year (t)
Non-Debt Tax Shield – The ratio of depreciation to total assets for firm (i) in the year (t)
β_0- Constant term for firm (i) in the year (t).
β_1, β_2….-Regression Co-efficients
e- disturbance term for firm (i) in the year (t).

Table 1 below summarizes the determinants of capital structure, definitions and theoretical predicted signs.

TABLE 1: PROXY VARIABLES DEFINITION AND PREDICTED RELATIONSHIPS

Proxy variables	Definitions	Predicted sign
Tangibility	The ratio of tangible fixed assets and total assets	+
Size	Natural logarithm of firm's sales	+ / -
Growth	Differences between current year sales and previous year sales divided by previous year sales	+ / -
Profitability	Gross Profit as a percentage of total assets	+ / -
Non-Debt Tax Shield	Ratio of Depreciation to total assets	-

HYPOTHESIS

In this part, three capital structure respective hypothesis has been formulated in light of Agency Cost theory, Static Trade-off theory and Pecking order theory. The first hypothesis is formulated for Agency cost theory. Second hypothesis is formulated for Static Trade-off theory. Third Hypothesis is formulated for Pecking Order theory. The hypotheses are tested to find which of those theories are relevant for Indian Automobile firms. Null hypothesis (H_o) is rejected if result is significant at 1 per cent or 5 per cent or 10 per cent, otherwise alternative hypothesis (H_a) is accepted.

Hypothesis 1

H_o – There is negative relationship between leverage and size.
H_a – There is positive relationship between leverage and size.

Hypothesis 2

H2a:

H_o- There is negative relationship between leverage and size.
H_a – There is positive relationship between leverage and size.

H2b:

H_o – There is negative relationship between leverage and the value of tangible assets.
H_a – There is positive relationship between leverage and the value of tangible assets.

H2c:

H_o – There is negative relationship between leverage and non-debt tax shield.
H_a – There is positive relationship between leverage and non-debt tax shield.

Hypothesis 3

H3a:

H_o- There is negative relationship between leverage and growth.
H_a – There is positive relationship between leverage and growth.

H3b:

H_o – There is positive relationship between leverage and profitability.
H_a – There is negative relationship between leverage and profitability.

H3c:

H_o – There is positive relationship between leverage and value of tangible assets.
H_a – There is negative relationship between leverage and value of tangible assets.

SAMPLING DESIGN

Keeping in view the scope of the study, it is decided to include all the companies under automobile industry working before or from the year 1996-97 to 2008-09. There are 26 companies operating in the Indian automobile industry. But, owing to several constraints such as non-availability of financial statements or non-working of a company in a particular year etc., it is compelled to restrict the number of sample companies to 20. The companies under automobile industry are classified into three sectors namely; Commercial vehicles, Passenger cars and Multi-utility vehicles and Two and three wheelers. For the purpose of the study all the three sectors have been selected. It accounts for 73.23 per cent of the total companies available in the Indian automobile industry. The selected 20 companies include 5 under commercial vehicles, 6 under passenger cars and multi-utility vehicles and 9 under two and three wheeler sectors. It is inferred that sample company represents 98.74 percentage of market share in commercial vehicles, 89.76 percentage of market share in passenger cars and Multi-utility vehicles and 99.81 percentage of market share in two and three wheelers. Thus, the findings based on the occurrence of such representative sample may be presumed to be true representative of automobile industry in the country.

The study is mainly based on secondary data. The major source of data analysed and interpreted in this study related to all those companies selected is collected from "PROWESS" database, which is the most reliable on the empowered corporate database of Centre for Monitoring Indian Economy (CMIE). Besides prowess database, relevant secondary data have also been collected from BSE Stock Exchange Official Directory, CMIE Publications, Annual Survey of Industry, Business newspapers, Reports on Currency and Finance, Libraries of various Research Institutions, through Internet etc.

ANALYSIS AND DISCUSSION OF RESULTS

DESCRIPTIVE STATISTICS AND ANALYSIS

The descriptive statistics for the dependent variable and the explanatory variables of the model are presented in Table 2. Descriptive statistics includes the mean, standard deviation, standard error of mean, median, minimum and maximum values, kurtosis and skewness for the period 1996-2009 for 20 Indian automobile firms. The table shows that there are negative values at minimum values i.e., some companies have operated with losses during the period 1996-2009. Table 2 reveals that leverage ranges between 0 to 41.37, with mean of 1.39 and a standard deviation 3.18. As for PR, it ranges between -189.39 to 1638.92, with a mean of 22.29 and a standard deviation of 105.3. The same applies to Tangibility, Growth and Non-Debt Tax shield, which show that the standard deviation is more than the mean. This implies that there is a high variation in the companies mean. The table also reveals that Leverage, Tangibility, PR, Growth and Non-Debt Tax shield have a positive skewness, which indicates that the scores are clustered to the left at the low values. As for Ln sales have a negative skewness indicating clustering of scores are at the high end. As far the Kurtosis statistic, all variables show a positive kurtosis suggesting that the distribution has peaked or clustered in the centre, with long thin tails.

CORRELATION ANALYSIS

A correlation analysis was performed to verify a possible association between and among the variables, in order to test whether there is any linear correlation between and among the variables. Collinearity explains the dependence of one variable to other. When variables are highly correlated they both express essentially the same information. In general, independent variables having collinearity at 0.70 or greater should not include in regression analysis. Table 3 reports the Pearson correlation co-efficients of all the variables employed in the study. Simple correlations among the variables that are reported in Table 3 are quite low. The largest reported value (-0.32) was between Non-Debt Tax shield and Ln sales (size). In this respect, **Kennedy 1985** suggests that correlation values below 0.70 do not pose a potential multicollinearity problem. Hence, colllinearity should not appear problem in our regression analysis.

REGRESSION RESULTS

A multiple regression analysis has been performed to estimate the co-efficients and the direction of relationship between the dependent variable and the independent variables in the specified model in the study. Table 4 shows the stepwise regression results for the model estimated in the study. R-square (co-efficient determination) measures the proportion of the variance jointly explained by the explanatory variables. Adjusted R-square attempts to compensate for this automatic upward shift by imposing a penalty for increasing the number of explanatory variables. The maximum value of R-square is 1. This occurs when the regression line fits the observations exactly. The closer the R-square is to 1, the "better" the overall fit of the estimated regression equation to the actual data. With time series data, R-squared are often in excess of 0.9; with the cross – sectional data, 0.5 might be considered a reasonable good fit **(Baye 2005).**

It can be observed from the table that R-Square explains 85 per cent of the variation in leverage can be captured by independent variables for Indian automobile industry, respectively 87 per cent for Commercial vehicles sector, 94 per cent for Passenger cars and Multiutility vehicles sector and 95 percent for Two and Three wheeler sectors. The rest of leverage's variance is due to factors other than determinants studied in this article. Among the selected automobile firms, R-Square ranges between 68 per cent and 97 per cent for commercial vehicles sector, 55 per cent to 91 per cent for passenger cars and multiutility vehicles sector and 36 per cent to 96 per cent for two and three wheelers sector. F- Statistic provides a measure of the total variations explained by the regression relative to the total unexplained variation. The greater the F – statistic, the better the overall fit of the regression line through the actual data. Regression that has F-statistics with significant values of 10 per cent or less are generally considered significant. In our case F- statistic shows that overall models are significant except Hindustan Motors Ltd under passenger cars and multi-utility vehicles sector and Bajaj Auto Ltd, Kinetic Engineering Ltd and Majestic Auto Limited under two and three wheelers sector.

First, there seems to be a mixed relationship between the share of tangible assets and leverage. Theoretically, firms with large amounts of tangible assets probably already own a stable source of return that pushes them to resort to internal funds rather than debt. Theoretical research predicts positive relationship between tangibility and leverage. The empirical analysis showed that there is a positive relationship between tangibility and leverage in the Indian automobile industry, commercial vehicle sector and passenger cars and Multi-utility vehicles sector. These finding are consistent with those of **Titman and Wessels (1988)** as well as with those of **Ozkan (2000)** who found a positive relationship between the tangibility and leverage. This evidence supports the trade-off hypothesis, which states that tangible assets are used as collateral. However, in case of two and three wheelers sector, this relationship is positive. This finding supports the pecking order prediction which states that the firms with high proportions of tangible assets are more likely to have a lower debt ratio. These findings are consistent with those of **Both et al (2001)** have found a negative relationship between tangibility and leverage. Among the selected firms, 3 out of 5 firms in commercial vehicles sector (Ashok Leyland Ltd, Tata Motors Ltd and Eicher Motors Ltd), 3 out of 6 firms in passenger cars and multi-utility vehicles sector (Mahindra and Mahindra Ltd, Hyundai India Ltd and Honda Siel Ltd), and 5 out of 9 firms in two and three wheeler sector (Bajaj Auto Ltd, Maharashtra Scooters Ltd, TVS Motor company Ltd, Kinetic Engineering Ltd and Majestic Auto Ltd) showed the negative relationship between tangibility and leverage which supports Pecking order hypothesis. In the remaining firms, this relationship is positive which supports the trade-off hypothesis.

Second, the relationship between size and leverage appears to be statistically significant but with a negative sign in the Indian automobile industry, commercial vehicles sector, passenger cars and multi-utility vehicles sector and two and three wheelers sector. This estimate indicates that small manufacturing firms are relatively more indebted compared to larger firms. These findings are inconsistent with those of **Rajan and Zingales (1995) and Booth et al. (2001)** who found a positive relationship between size and leverage. However, among the selected firms, Hindustan Motors Ltd, Hyundai India Ltd and Honda Siel Ltd under passenger cars and multi-utility vehicles sector and LML Ltd, Maharashtra Scooters Ltd and Scooters India Ltd in two and three wheelers sectors, the relationship between the firm size and leverage is positive and statistically significant. One interpretation of this positive relationship is that the banks tend to favour large firms, giving those credits, due to the fact that they seem to be more credible.

As far as profitability is concerned, its relationship with leverage turns out to be negative and statistically significant in Indian automobile industry, commercial vehicles sector, passenger cars and multi-utility vehicles sector and two and three wheelers sector. The negative co-efficient indicates that firms with more profitable projects are prone to use internally generated funds rather than debt. This result is explained by the Pecking order prediction which states that firms prefer internal to external financing and debt to equity. This finding provides evidence supporting "the Pecking order theory" suggested by **Myers and Majluf (1984)** that firms prefer internal funding and turn to external resources as a secondary option. It should be emphasized that **Rajan and Zingales (1995) and Booth et al. (2001)** found similar results respectively for OECD countries and listed companies in developed countries. However, among the selected automobile firms, Swaraj Mazda Ltd under commercial vehicles sector and Maharashtra Scooters Ltd, Hero Honda Motors Ltd and Scooters India Ltd under two and three wheelers sector showed its relationship with leverage turns out to be positive. These findings are consistent with the finding of **Long and Maltiz (1985)** in which they indicate the positive relationship between leverage and the profitability.

Growth potential is another relevant explanatory variable of capital structure choice of Indian automobile industry. The estimates show that the growth potential is positively associated to leverage. The relationship appears to be statistically significant in few cases only. The estimates are in line with the hypothesis according to which firms with promising growth prospects tend to exhaust their internal funds and to resort more intensively to debt.

Finally, the relationship between Non-Debt Tax shield and Leverage appears to be negative in the majority of the selected Indian automobile firms as shown in the regression of Table 4. This finding is also in line with those of **Biger, Nguyen and Hoang (2008) and De Angelo and Masulis (1980).** These studies find that leverage is negatively correlated with Non-Debt Tax Shield. This shows that a large non-debt tax shield reduces the expected value of interest tax savings and lessens the advantage of debt financing.

DISCUSSION OF RESULTS

In this section, an attempt has been made to discuss obtained results in terms of the signs and statistically significance of the co-efficient for independent variables. Table below show obtained and expected signs for five independent variables at Indian automobile firms.

TABLE 5: EXPECTED AND OBSERVED THEORETICAL SIGNS WITH INDEPENDENT VARIABLES

Proxy	Static-Trade off	Pecking order	Observed signs
Tangibility	+	-/+	-/+
Size	+	-	-/+
Profitability	+	-	-/+
Growth	-	+	-/+
Non-Debt Tax Shield	+/-	?	-/+

It is evident from the Table 5 that tangibility is negatively and positively associated with leverage and is consistent with implication of Pecking order theory for Indian automobile firms. Further, size is estimated to have both positive and negative impact on leverage. This is consistent with implications of Pecking order theory and Static Trade-off theory. Similarly profitability variable and growth variable also show both positive and negative impact on leverage, which is consistent with implications of Pecking order theory and Static Trade-off theory. Non-Debt tax shield is also showed both positive and negative impact on leverage, which is consistent with implications of Static Trade-off theory for Indian automobile firms.

CONCLUDING REMARKS

This study examined the trade-off and pecking order hypotheses using a sample of 20 Indian automobile firms. According to trade-off theory, large firms with tangible assets tend to borrow more than small, risky firms with mostly intangible assets and firms with more profitable assets in place, fewer investments, less volatile earnings and net cash-flow have higher leverage. The Pecking order hypothesis predicts a negative correlation between leverage and profitability of the firms. The empirical findings suggest that there is a difference between capital structure choices for companies. The negative relationship between leverage and tangibility might be explained by the lack of long-term debt financing and contradicts the predictions of the trade-off theory. More profitable companies had less debt, because these firms use first of all, internally generated funds and debt as last resort. This result is compatible with the pecking order theory and contradicts the trade-off theory. The relationship between leverage and company size, leverage and profitability and leverage and growth showed both positive and negative impacts, which are compatible with both theories in the sample of Indian automobile firms. To conclude, the Pecking Order theory is more appropriate to explain the capital structure choice of the Indian automobile firms compared to Trade-off theory.

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TABLES

TABLE 2: DESCRIPTIVE STATISTICS OF INDEPENDENT, DEPENDENT AND CONTROL VARIABLES

20 Indian Automobile Firms, 1996 – 2009 – 216 Firm - Year observations (N = 216)							
Variables	**Mean ± S.D**	**Standard Error of mean**	**Median**	**Minimum**	**Maximum**	**kurtosis**	**Skew ness**
Leverage	1.39 ± 3.18	0.20	0.71	0	41.37	106.68	9.18
Tangibility	0.58 ± 1.06	0.07	0.50	0.04	16.95	226.91	14.64
Ln Sales	6.90 ± 1.70	0.11	6.86	0.92	10.39	0.01	-0.27
PR	22.29 ± 105.3	6.62	14.58	-189.39	1638.92	222.83	14.44
Growth	10.60 ± 36.83	2.32	10.13	-97.62	356.66	31.46	3.48
Non – debt Tax shield	0.35 ± 1.38	0.09	0.06	0.01	9.76	27.24	5.22

Notes : Leverage-Total debt to equity ratio; Tangibility- Ratio between tangible fixed assets and total assets ; Ln sales-Natural logarithm of sales (proxy for size); Growth-Sales Growth; PR- Profit rate on total assets ; Non –debt tax shield- Ratio of depreciation total assets

Source: Computed.

TABLE 3: CORRELATION MATRIX

	Leverage	**Tangibility**	**Ln sales**	**PR**	**Growth**	**Non-debt Tax Shield**
Leverage	1.00					
Tangibility	-0.03	1.00				
Ln Sales	-0.09	-0.25	1.00			
PR	-0.03	0.03	0.03	1.00		
Growth	-0.01	0.05	0.05	0.01	1.00	
Non – Debt Tax Shield	-0.06	-0.08	-0.32	-0.03	-0.03	1.00

Notes : Leverage-Total debt to equity ratio; Tangibility- Ratio between tangible fixed assets and total assets ; Ln sales-Natural logarithm of sales (proxy for size); Growth-Sales Growth; PR- Profit rate on total assets ; Non –debt tax shield- Ratio of depreciation total assets

Source: Computed.

TABLE 4: RESULTS OF REGRESSION ANALYSIS – INDIAN AUTOMOBILE FIRMS [LEVERAGE=$\beta_0 + \beta_1$ TANGIBILITY + β_2 SIZE + β_3 PROFITABILITY + β_4 GROWTH + β_5 NON-DEBT TAX SHIELD]

Particulars	Constant	TANGIBILITY	Size	PROFITABILITY	GROWTH	NON-TAX SHIELD	R^2	Adj R^2	F Value	DW
Ashok Leyland Ltd	3.34	-0.72 (3.16)*	-0.24 (2.45)**	-0.01 (3.08)**	0.03 (2.26)**	-6.48 (0.84)	0.91	0.84	13.63*	1.91
Tata Motors Ltd	1.79	- 1.83 (3.14)**	-0.03 (0.85)	-0.03 (6.80)*	0.01 (1.16)	12.11 (2.60)**	0.97	0.96	52.52*	1.82
Bajaj Tempo Ltd	5.38	5.44 (6.30)*	-0.89 (3.07)**	-0.01 (3.63)*	0.01 (1.56)	-9.13 (5.15)*	0.93	0.89	19.59*	1.95
Eicher Motors Ltd	1.39	- 0.22 (0.36)	-0.11 (0.95)	-0.01 (1.36)	0.01 (2.62)**	2.48 (0.38)	0.68	0.59	3.92***	1.39
Swaraj Mazder Ltd	19.65	4.83 (0.16)	-2.36 (3.68)*	0.04 (0.39)	0.03 (2.67)**	-9.74 (0.99)	0.70	0.59	3.48***	1.80
Commercial Vehicle	**3.21**	**0.10 (3.09)****	**-0.18 (2.44)****	**-0.04 (2.12)****	**0.01 (0.22)**	**-3.50 (0.62)**	**0.87**	**0.77**	**9.17***	**1.48**
Hindustan Motors Ltd	-13.32	0.77 (0.21)	2.09 (1.92)***	-0.05 (1.89)***	0.01 (0.54)	16.95 (1.22)	0.55	0.49	1.73	0.85
Mahindra and Mahindra Ltd	5.33	- 7.31 (2.01)***	-0.34 (2.46)**	-0.04 (2.33)**	0.02 (2.02)***	34.78 (1.60)	0.76	0.63	4.32**	1.98
Maruti Udyog Ltd	0.33	0.26 (2.81)**	-0.02 (2.27)***	-0.01 (2.24)***	0.03 (0.78)	-0.49 (0.43)	0.79	0.63	5.11**	1.93
Hyundai India Ltd	0.66	-0.04 (3.24)*	0.09 (3.59)*	-0.02 (3.13)**	0.06 (0.26)	-1.66 (0.44)	0.91	0.85	14.50*	1.37
Honda Siel Ltd	0.02	-0.03 (3.05)**	0.04 (2.73)**	-0.01 (2.40)**	0.03 (0.80)	2.35 (1.19)	0.72	0.65	4.52**	1.77
Ford India Ltd	0.02	2.10 (5.13)*	-0.16 (3.38)*	-0.04 (1.44)	0.03 (0.47)	23.78 (3.09)**	0.94	0.89	20.96*	1.95
Passenger cars and Multi-utility Vehicles	**4.98**	**0.23 (3.21)****	**-0.36 (2.33)****	**-0.03 (1.84)**	**0.01 (1.73)**	**-9.05 (2.47)****	**0.94**	**0.89**	**20.56***	**1.75**
Bajaj Auto Ltd	1.98	-1.85 (0.84)	-0.11 (1.23)	-0.01 (0.13)	0.01 (0.74)	5.71 (0.27)	0.61	0.54	1.41	1.12
LML Ltd	-5.79	0.15 (3.02)**	1.38 (2.77)**	-0.07 (6.35)*	0.01 (0.36)	-3.69 (1.86)	0.88	0.80	10.32*	1.80
Maharastra Scooters Ltd	-0.01	-0.68 (2.90)**	0.03 (6.92)*	0.01 (0.66)	0.08 (2.99)**	0.02 (4.06)*	0.96	0.93	31.30*	1.98
TVS Motor Company Ltd	3.09	-1.17 (2.19)***	-0.22 (1.90)***	-0.03 (4.14)*	0.01 (0.03)	9.83 (2.17)***	0.90	0.82	12.13*	1.60
Kinetic Motor Company Ltd	0.39	1.77 (5.37)*	-1.12 (0.15)	-0.01 (2.11)***	0.01 (3.11)**	-2.81 (1.96)***	0.85	0.80	7.89*	1.98
Hero Honda Motors Ltd	3.12	0.03 (3.07)**	-0.25 (5.36)*	0.03 (2.06)***	0.03 (1.07)	-17.23 (4.26)*	0.96	0.93	30.54*	1.99
Kinetic Engineering Ltd	25.76	-4.83 (0.77)	-1.67 (0.13)	-0.13 (0.37)	-0.09 (0.25)	8.52 (0.34)	0.36	0.25	1.46	1.82
Majestic Auto Ltd	8.15	-5.56 (1.17)	-0.63 (0.56)	-0.07 (2.74)**	-0.01 (0.56)	28.70 (0.90)	0.39	0.31	1.36	1.44
Scooters India Ltd	-0.95	0.07 (3.18)**	0.30 (3.43)*	0.01 (3.42)*	0.01 (0.72)	-0.07 (2.98)**	0.86	0.81	9.31*	1.78
Two & Three Wheelers	**6.38**	**-1.42 (1.06)**	**-0.47 (5.02)***	**-0.02 (1.98)*****	**0.01 (2.93)****	**-16.60 (4.08)***	**0.95**	**0.92**	**27.08***	**1.72**
Whole Industry	**-0.03**	**4.79 (3.54)***	**-0.04 (2.34)****	**-0.02 (3.64)***	**0.01 (0.51)**	**-20.68 (3.30)***	**0.85**	**0.75**	**8.09***	**1.83**

Source: Computed

SHG - BANK LINKAGE – A HELPING HAND TO THE NEEDY POOR

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ABSTRACT

In the present study an analysis is made on the SHG and bank linkage. The study has made the research from the point of view of Banks as a helping hand to the needy poor. Micro finance has gained a lot of significance and momentum in the last decade. India has obtained prominent position through the promotion of SHG and bank linkage. In alleviation of poverty, people's involvement is needed. The SHG movement is considered as ray rope for India.

KEYWORDS
SHG, Bank, Poor, India.

INTRODUCTION

Poverty is an acute problem of today's global economy especially in the developing countries. Almost all the countries in the world including India have committed to attaining the Millennium Development Goals by the year 2015. India is the second most populous country having more than one billion population over 22%[11] of its rural population and 15%[11]of its urban population is living below poverty line and. Govt of India has made sincere effort to provide the institutional credit to fight against poverty but the institutional structure was neither profitable in rural lending nor serving the needs of the poorest. Due to the failure of financial institutions to provide the credit to the poorest, microfinance becomes the new mantra in rural finance.

Micro-finance is the term most often used to describe financial services for poor people in developing countries. Micro finance includes micro credit or micro loans (Small amounts of money lent to poor people to finance self employment activities or for other purposes); savings; payment transfers (services which enable breadwinners living elsewhere to send small amounts of money regularly to family members back home, a major revenue stream in many developing countries); micro insurance and other financial services. The modern micro finance movement was born to ease the human suffering caused by poverty, and to waken the global economy's sleeping gains; the almost completely uncapitalised productivity of the world's overwhelming majority of economically active people. It has scored impressive gains, developed consensus about best practices, and improved the lives of tens of millions of people. India being a developing country has achieved tremendous growth in the last decade due, to the various agencies including Government, NGOs and Banks. There are two models of micro finance in India:

a) The self help Group Model under the SHG- Bank Linkage
b) Micro Finance Institutions (MFIs)

OBJECTIVES

The present paper throws light on the following

- To understand the concept of SHG and its working.
- To study the growth SHG bank linkage region wise.
- To study the growth of SHG-bank linkage in India particularly in Karnataka.
- To study the agency wise SHG-bank linkage in Karnataka.
- To offer useful suggestions.

METHODOLOGY

The present study is purely based on the secondary data such as NABARD Annual Reports and internet. The collected data analyzed with the help of statistical tools such as percentage.

WHAT ARE SHGs?

The country has witnessed a rapid growth of self-help groups (SHGs) in the last one decade or so. The SHG growth which has almost assumed the form of a movement represents a massive grass roots level mobilization of poor rural specially women into small informal associations capable of forgoing links with formal systems to help access financial and other services needed for their socio-economic advancement. Basically SHGs are being promoted as a part of the microfinance interventions aimed at helping the poor to obtain easily financial services like savings, credit and insurance. The promotion of SHGs in India began more formally in 1992 with the launch of the SHG bank linkage by National Agricultural and Rural Development (NABARD). The purpose of this programme is to improve rural poor access to formal credit system in a cost effective and sustainable manner by making use of SHGs.

A self help group (SHG) is a registered or unregistered group of micro entrepreneurs having homogenous social and economic background voluntarily coming together to save small amounts regularly. They mutually agree to contribute to a common fund and to meet their emergency needs on mutual help basis. The group members use collective wisdom and peer pressure to ensure proper end- use of credit and timely repayment there of. In fact, peer pressure has been recognized as an effective substitute for collaterals.

An economically poor individual gains strength as part of group. Besides, financing through SHGs reduces transaction costs for both lenders and borrowers. While lenders have to handle only a single SHG account instead of a large number of small-sized individual accounts, borrowers as part of a SHG cut down expenses on travel (to and from the branch and other places) for completing paper work and on the loss of work days in canvassing for loans.

FEATURES OF SHGs

- 10-20 persons having similar socio-economic background form SHGs.

- Each SHG has its own written by-laws regarding savings, rate of interest, repayment period, meeting etc.
- Each member contributes a small amount of savings regularly into group fund.
- Group leaders are elected by the members and rotated periodically.
- Inter lending begins immediately for a variety of small needs.
- Once the group shows its performance maturity, it is linked to local rural bank branch.
- The group can apply to the bank for loans within six months of opening the bank account.
- The group takes loans from banks at fix interest without any collateral.
- In turn, the group lends to its members with flexible repayment schedules and the rate of interest, which is decided by the group.
- The group takes the responsibility of timely repayment to the bank, even if the members are in default because of an emergency.
- Participatory decision making.

SHG BANK LINKAGE

In the post nationalization era, the banking sector in India witnessed substantial growth and expansion unparallel in the world. Institutional Credit came to be recognized as a remedy for many of the ills of poverty. Credit packages and programmes were designed based on the on the perceived needs of the poor. Programmes also underwent qualitative changes based on the experience gained.

NEED FOR BANK LINKAGE

NABARD, during the early eighties, conducted a series of research studies independently and in association with MYRADA (a leading NGO from South India) which showed that despite having a wide network of rural bank branches that implemented specific poverty alleviation programmes with subsidy and bank components for almost two decades. But the institutional credit involving the existing banking policies, procedures and system does not suit the most immediate needs of the poor. It also appeared that what the poor really needed was a better access to these services and products, rather than cheap subsidized credit. Against this background, a need was felt for alternate policies, systems and procedures, savings and loan products, other complementary services etc which would fulfill the requirements of the poorest, especially the women members of such households.

The brain child of NABARD started as an action research project in 1989. Positive field level findings led, in 1992, to the setting up of a pilot project. The project was designed as a "Partnership Model" between three agencies viz., the SHGs, bank and Non governmental organizations (NGOs). SHGs were to facilitate collective decision making by the poor and provide "doorstep banking" Banks as wholesalers of credit were to provide the resources and NGOs were to act as agencies to organize the poor, build there capacities and facilitate process of empowering them.

MODELS OF LINKAGE

There are three broad models of SHG- Bank linkage which have emerged over the past few years are as under.

MODEL – 1: BANK SHG MEMBERS

In this model, the bank itself acts as self help group promoting institution. It takes initiatives in forming the groups, nurtures them over a period of time and then provides credit to them after satisfying itself about their maturity to absorb credit.

MODEL – 2: BANK FACILITATOR AGENCY SHG MEMBERS

Groups are formed by NGOs or Govt agencies. The groups will be trained and nurtured by these agencies. The banks provide credit directly to members after observing their operations and maturity to absorb credit. Most linkage experiences begin with this model with NGOs playing a major role.

MODEL- 3: BANK- NGO- MFI- SHG MEMBERS

The wide network coverage of banks has not reached the rural areas. In such cases, the NGOs act as both facilitators and micro finance intermediatories. First, they promote the group, nurture and train them and then approach banks for bulk loans for on lending to the SHGs.

ANALYSIS OF SHG BANK LINKAGE

The SHG-Bank Linkage has passed through various phases- pilot testing (1992-95), mainstreaming (1996-98) and expansion (1998 onwards) and metamorphosed into the biggest micro finance movement in the world. The physical and financial outreach of the programme has been impressive in as much as the cumulative number of SHGs having savings bank accounts were 61.21 lakh with aggregate savings of Rs 5,455.62 crore, out of which credit linked SHGs were 44.81 lakhs covering 860 lakh poor households as on 31st March 2009, as per the reported all India data. An overview of the number of SHG accounts, bank loans disbursed to SHGs and loan amounts outstanding with SHGs together with bank loans disbursed to MFIs for on lending and the amount of loans outstanding with MFIs is presented in the following table.

TABLE 1: SHG-BANK LINKAGE – ALL INDIA

Particulars	2006-07		2007-08		% Growth (2007-08)		2008-09		% Growth (2008-09)	
	No of SHGs	Amt	No of SHGs	Amt	No of SHGs	Amt	No of SHGs	Amt	No of SHGs	Amt
Savings of SHGs with Banks as on 31st March	4160584	3512.71	5009794	3785.39	20.4	7.8	6121147	5545.62	22.2	46.5
Bank Loans disbursed to SHGs during the year	1105749	6570.39	1227770	8849.26	11	34.7	1609586	12253.51	31.1	38.5
Bank Loans outstanding with SHG as on 31st March	2894505	12366.49	3625941	16999.91	25.3	37.5	4224338	22679.84	16.5	33.4

Source: Reports of NABARD

It is revealed from the table that as at the end of 2008-09, 61.21 lakh SHGs saving linked with banks having saving of 5,455.62 crore as against 50.10 lakh SHGs having savings of Rs 3785.39 crore as on 31st March 2008. During 2008-09, 42.24 lakh SHGs credit linked with outstanding bank loan of Rs 22679.85 crore as against 36.26 lakh SHGs with bank loan outstanding of Rs 16999.90 crore as on 31st March 2008, thereby registered a growth 16.5% (No of SHGs) and 33.4% (Bank loan). During 2008-09, the banks financed 16.10 lakh SHGs including repeat loans, to the extent of Rs 12,253.31 crore against 12.28 lakh SHGs with bank loan of Rs 8,849.26 crore in 2007-08. The process in the SHG-Bank linkage programme since its inception is given in table 2.

TABLE 2: SHG-BANK LINKAGE (1992-93 TO 2008-09)

Year	No of SHGs financed	Bank loan financed (Rs in lakh)	No. of families assisted	Average Loan per SHG (Rs)	Average Loan per family (Rs)
1992-93	255	30	4335	11765	692
1993-94	365(43.14)	36(20)	6205(43.14)	9863(-16.17)	580(-16.18)
1994-95	1502(311.51)	179(397.22)	25534(311.51)	11917(20.83)	701(20.86)
1995-96	2635(75.43)	361(101.68)	44795(75.43)	13700(14.96)	806(14.98)
1996-97	3841(45.77)	578(60.11)	65297(45.77)	15408(12.18)	885(9.80)
1997-98	5719(48.89)	1192(106.23)	97223(48.89)	20843(35.27)	1226(38.53)
1998-99	18678(226.60)	3330(170.36)	317526(226.60)	17828(-14.26)	1049(-14.44)
1999-00	81780(337.54)	13590(302.65)	1390260(337.84)	16618(-6.79)	978(-6.77)
2000-01	149050(82.26)	28789(111.84)	2533850(82.26)	19315(16.23)	1136(16.16)
2001-02	197653(32.61)	54554(89.50)	3360101(32.61)	27601(42.90)	1624(42.96)
2002-03	255882(29.46)	102231(87.39)	3754874(11.75)	26985(-2.23)	1799(10.78)
2003-04	361731(41.37)	185550(81.50)	4586000(22.13)	36180(34.07)	2412(34.07)
2004-05	518173(43.25)	296180(59.62)	7774000(69.52)	42971(18.77)	2864(18.74)
2005-06	482598(-6.87)	309613(4.53)	7238970(-6.88)	64155(49.30)	4277(49.34)
2006-07	1105749((129.12)	657039(112.21)	15480486(113.85)	59420(-7.38)	3961(-7.38)
2007-08	1227770(11.03)	884926(34.68)	17188780(11.03)	72076(21.30)	5148(29.97)
2008-09	1609586(31.10)	1225351(38.50)	22534204(31.09)	76108(5.60)	5436(5.59)

Source: Reports of NABARD

Note: Figures in bracket indicate the percentage of growth as compared to previous year.

It can be known from the table that the percentage of growth of SHGs is highest in the year 1999-00 (ie 337.54) and the percentage of growth when compared to the previous year is negative in the year (-6.87). With respect to bank loan financed, the percentage of growth was highest 1994 -95 ie 397.22 and was lowest in the year 1993-94 ie 20. This indicates that there is uneven growth in number of SHGs in the country. The commercial banks and other banks should increase the tempo of financing to SHGs. It leads to reach the poorest of poor.

The progress under Microfinance –Savings of SHGs with Banks Region-wise and Agency wise position as on 31st March 2009.

TABLE 3: SAVINGS OF SHGS BANKS REGION WISE AND AGENCY WISE

Sl. No.	Region wise	Commercial banks		Regional Rural Banks		Cooperative Banks		Total	
		No of SHG	Savings Amt	No of SHG	Savings Amt	No of SHG	Saving Amt	No of SHG	Savings Amt
1	Northern Region	169319(54.4)	14688.04	79448(25.6)	4520.19	62231(20)	3495.69	310998	22703.92
2	Northern Eastern	93354(38.9)	4453.75	125305(52.2)	5216.75	21434(8.9)	539.66	240093	10210.16
3	Eastern	629728(51)	29231.32	375388(30.4)	114606.52	228519(18.6)	15850.2	1233635	159688.04
4	Central	319952(44.9)	19670.46	333672(46.8)	16562.6	59291(8.3)	2446.14	712915	38679.2
5	Western	429453(53.9)	36583.83	116158(14.6)	7983.74	250651(31.5)	21860.83	796262	66428.4
6	Southern	1907703(67.5)	172671.54	598617(21.2)	50085.28	320924(11.3)	34095.28	2827244	256852.1

Source: Report of NABARD

Figures in brackets indicate the percentage to total number of SHGs formed by the respective agencies.

The above table gives region wise formation of self help group by different agencies viz commercial banks, regional rural banks and cooperative banks and the amount of savings made by the groups. The commercial banks account highest number of SHGs in southern when compared to other regions. The share of RRBs is highest in northern eastern region whereas co-operative banks' share is highest in western region.

Karnataka, a pioneer in SHGs and also in bank linkage programme, continues to maintain its leading status in promotion of SHGs. The various agencies are doing their best in the growth and development of micro finance by linking the SHGs with banks. Table 4 provides the performance of SHG-Bank linkage in Karnataka for selected years.

TABLE 4: SHG-BANK LINKAGE IN KARNATAKA

Year	No of SHGs credit linked	Bank loan (Rs in lakh)	Refinance (Rs in lakh)
1992-93	114	5.73	5.73
1993-94	51(-55.26)	5.51(-3.84)	5.51(-3.84)
1994-95	481(843.14)	77.71(1310.34)	70.71(1183.30)
1995-96	1046(117.46)	145.08(86.69)	145.08(105.18)
1996-97	760(-27.34)	159.25(9.77)	159.25(9.77)
1997-98	1138(49.74)	232.19(45.80)	228.10(43.23)
1998-99	2002(75.92)	429.86(85.13)	422.28(85.12)
1999-00	5018(150.65)	1054.81(145.40)	649.00(53.69)
2000-01	8009(59.61)	1714.00(62.49)	1404.00(116.33)
2001-02	18413(129.90)	3475.39(102.76)	2229(58.76)
2002-03	25416(38.03)	7249.50(108.60)	4073.55(82.75)
2003-04	41688(64.02)	13960.37(92.57)	6090.22(49.51)
2004-05	59332(42.32)	26653.00(90.92)	9951.00(63.39)
2005-06	61730(4.04)	44260.00(66.06)	6695.43(32.72)
2006-07	92708(50.13)	81368.87(83.84)	15599.24(132.98)
2007-08	94280(1.70)	100446.47(23.45)	12699.52(18.59)
2008-09	60439(-35.89)	120702.37(20.17)	19219(51.34)
Cumulative	472235	402222.53	79646.49

Source: Reports of NABARD

Figures in brackets indicate the percentage of growth as compared to the previous year.

The Table shows the number of Self help groups' credit linked and bank loan and refinance for the respective years. It is indicated from the table that the number of SHGs credit linked is inconsistent whereas bank loan provided to such SHGs is increasing. Similarly, the refinance by NABARD to these banks is also increasing year by year. It is evident from the above table that there is positive growth with respect to the number of SHGs credit linked to banks except for 1993-94, 1996-97 and 2008-09. The growth rate for 1994-95 is highest as compared to 2007-08.

The self help movement is deep-rooted in southern states of the country. Karnataka has been among the top three states in the country in SHG-Bank Linkage. The key stakeholders have continued innovations for sustaining the SHG movement. The status of Self Help movement at the end of the year 2008-09 is highlighted below.

Women & Child Development Department (WCDD)-Government of Karnataka, Non-Governmental Organizations, the District Central Co operative Banks (DCCBs), Primary Agriculture Co operatives (PACs) and Regional Rural Banks (RRBs) continued to play a very significant role in promotion of SHGs in the state. Agency-wise number of SHG accounts added during the year and the cumulative position as on 31st March 2009, with percentage share of SHG accounts by each agency, are tabulated below.

TABLE 6: AGENCY-WISE NO. OF SHG ACCOUNTS

Sl. No.	Agency	No. of SHGs Accounts as on 31.03.2008	New SHG Accounts opened during 2008-09	Total No. of SHG Accounts as on 31.03.2009	Percentage of accounts held
01	Commercial Banks	170928	37113	208041	40
02	Regional rural Banks	136155	16429	152584	29
03	Cooperative Banks	148663	10621	159284	31

Source: Reports of NABARD

From the table, it can be known that the role of commercial banks in financing SHG has increased. The share of cooperative banks in financing SHGs is high compared to the RRBs.

FINDINGS

- There is an imbalance in the growth of SHGs region wise. SHGs are more popular only in southern region. So the central government and non government organizations should make efforts to increase in the number of SHGs through educating the people.
- The growth of number of SHGs along with financial assistance in Karnataka is on increasing trend.
- The role played by Commercial banks with respect of linking of SHGs with them is significant.
- There is positive growth of number of SHGs during the period 2007-08 and 2008-09 at all India level.

CONCLUSION

Micro finance has gained a lot of significance and momentum in the last decade. India has obtained prominent position through the promotion of SHG and bank linkage. Prof Muhummad Yunus a Nobel laureate says "social entrepreneurs" is a weapon to fight against the problems of humanity. If the dream of former president A. P. J.Abdul Kalam is to be realized, Micro finance is considered as tool for alleviating poverty. In alleviation of such poverty, people's involvement is needed. The SHG movement is considered as ray rope for India.

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ANALYSING SOCIO DEMOGRAPHIC EFFECT ON CONSUMER'S POST PURCHASE BEHAVIOUR: A STUDY ABOUT HOME APPALIANCES

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ABSTRACT

Present study describes the concept of 'consumer' and consumers' post purchase behaviour regarding home appliances namely Fridge and Washing Machine. These two durables have been selected for the study because, nowadays, with the rise of per capita income which shift consumer's purchasing power at its high, these durables are being used as a necessity. Primary data from 423 consumers of Fridge and 262 consumers of Washing Machine from different district of Uttarakhand state has been collected through pre-tested questionnaire. Proper consideration has been given to "Quota Sampling" to divide the sample in to independent variables. Statistical technique like percentage method and chi square (χ^2) method used to analyse the data. The study provides information about different brands of above mentioned home appliances purchased by sample consumers, main user of the purchased durable and post purchase reaction of the consumer in terms of satisfaction level. The study has given specific emphasis to socio-demographic effect on consumers' behaviour regarding above mentioned variables. Study reveals that high majority of the sample have purchased Fridge produced by Videocon followed by Godrej and only few respondents have purchased the produce of Electrolux. Regarding Washing Machine, majority have purchased the production of Philips followed by Godrej. Study also explains that Combined Family is the main user of both the appliances but Children as main user stands at second for Fridge, whereas, Wife stands second for Washing Machine. Elders were not the main user in both the cases. Regarding post purchase reaction in terms of satisfaction, high majority of consumers are fully satisfied followed by satisfied with purchased Fridge but majority have normal post purchase reaction followed by satisfied in case of Washing Machine. Only few are not satisfied in both the cases. Study reveals that consumer's Residential status has significant effect on the use of Fridge, Education significantly affect the use of Washing machine, Income significantly affect the use of both the durables, whereas, Occupation of the consumers does not have any effect on the use of both the appliances. Regarding post purchase reaction Residential status, Occupation and Income of consumers has significant effect on both durables, whereas, Education significantly affect the post purchase reaction of consumers only in case of Fridge.

KEYWORDS

Consumer, Marketing, Purchase Behaviour, Home appaliances.

INTRODUCTION

The consumer wave rides high in the country today. Fast developing technology and newer innovations coupled with heightened competition, rising income levels and rapidly increasing consumer awareness has led high expectations on the part of consumer. In marketing terms "consumer" is thought of 'Who is the person to buy', 'what product to buy', 'object behind purchase', 'at What price' and 'at Which place'. This kind of information can only be derived by observation of consumer and it is very important in locating a product or brand in the total market picture. Marketers can not stop their efforts here because it is worth meaningful for them to convert the concept of 'consumer' into 'customer'. Current scenario of marketing is of cut throat competition in terms of technology, innovation, corporate social responsibility, price and green marketing norms. So to stay in the market/ competition and keep succeeding is not easy but it can be done by observing the post purchase behaviour of consumer and incorporate the changes needed by consumer in the product and practices adopted by the firms.

Post purchase behaviour of the consumer is exhibited after purchase decision and then consumer compares his expectations with the performance of the product. This evaluation results in following manner;

Expectations < Performance = Full Satisfaction.

Expectations = Performance = Satisfaction.

Expectations > Performance = Dissatisfaction.

In case of last two situations consumer can switch over to another brand if some kind of motivation will not be given to him.

Simultaneously, there are so many other factors which can also influence post purchase behaviour such as socio demographic variables, personality variables, different kind of motivations and state of mind. So consumers post purchase evaluation always serves to future related decisions which will be beneficial for both consumers and marketers.

OBJECTIVES

1. To know about the brand of home appliances purchased and the main user of the purchased durable.
2. To examine the satisfaction level of the consumer.
3. To analyse socio demographic effect on use of durables and level of satisfaction.

METHODOLOGY

Well structured pre tested questioner is used to collect the data from consumers of durable from different district of Uttarakhand state. Proper consideration has been given to quota sampling, while sample divided according to various independent variables such as Residential status, Education, Occupation and Family income. Collected data has been analysed with the help of percentage method and chi square **(χ^2)** method.

HYPOTHESIS

1. **Ho** = Consumers' socio-demographic variables are independent to of the use of purchased home appliances.
2. **Ho** = Post purchase reaction of the consumers are independent of their socio demographic variables.

ANALYSIS OF CONSUMER BEHAVIOUR

TABLE NO.1: BRAND OF DURABLES PURCHASED BY SAMPLE CONSUMERS

FRIDGE		**WASHING MACHINE**	
Brand / companies	Durables Purchased	Brand / companies	Durables Purchased
Videocon	139(32.9)	Videocon	24(9.2)
Godrej	88(20.8)	Godrej	62(23.7)
Voltas	60(14.2)	Voltas	24(9.1)
Whirlpool	61(14.4)	Philips	89(34.0)
Electrolux	25(5.9)	Panasonic	12(4.5)
LG	46(10.9)	Any other	51(19.5)
Any other	04(0.9)		
	423(100)		262(100)

*Source of data is primary.

Table No. 1 shows that regarding Fridge, 32.9 percent respondents have brought the product from Videocon followed by Godrej. Voltas and Whirlpool were equally popular among the sample. Electrolux has been purchased only 5.9 percent sample consumers.

Washing Machine from Philips purchased by the majority (34%) of the consumers followed by Godrej (23.7%). Panasonic was the least popular brand name. It is notable that 19.5 percent of the sample respondents have purchased other brand of Washing Machine then shown in the table

TABLE NO.2: RESIDENTIAL STATUS AND MAIN USER OF THE DURABLE

	Fridge			**Washing machine**		
Main user	Rural	Urban	Total	Rural	Urban	Total
Husband	------	-------	-------	2 (2.1)	------	2 (0.8)
Wife	3 (1.4)	7 (3.4)	10 (2.4)	9 (9.3)	22 (13.2)	31 (11.8)
Children	17 (7.8)	18 (8.8)	35 (8.3)	-------	-------	-------
Elders	2 (0.9)	--------	2 (0.5)	-------	-------	-------
Combined family	176 (80.7)	177 (86.3)	353 (83.4)	79 (81.4)	134 (81.2)	213 (81.3)
Yourself	20 (9.2)	3 (1.5)	23 (5.4)	7 (7.2)	9 (5.5)	16 (6.1)
Total	218 (100)	205 (100)	423 (100)	97 (100)	165 (100)	262 (100)

*Source of data is primary.

Table No. 2 depicts that no Husband is the main user of Fridge in the sample. In 83.4 percent cases combined family is the user, children in 8.3 percent and elders only in 0.5 percent cases are the users. In case of rural sample, combined family is the main user and elders are the least user of Fridge. In urban sample, no elder is the main user of Fridge. While, in majority of the cases it is used by combined family, respondent-itself is the least user.

No children and elders are the main user of Washing Machine. In 81.3 percent cases Washing machine is used by combined family followed by wife 11.8 percent and respondent-itself in 6.1 percent cases. Regarding urban sample, Husband is the user only in 0.8 percent cases. Husband is not the main user area and the rest of behaviour from rural and urban respondent is almost similar.

TABLE NO. 3: RESPONDENTS' EDUCATION AND MAIN USER OF THE DURABLES

	Fridge				**Washing Machine**			
Main user	Matric & below	Graduate	Post Graduate	Illiterate	Matri& below	Graduate	Post Graduate	Illiterate
Husband	-----	----	---	---	1 (3.3)	---	---	1 (1.9)
Wife	2 (2.4)	5 (3.8)	1 (0.6)	2 (3.9)	8 (26.7)	11(16.7)	7 (6.1)	5 (9.6)
Children	11(12.9)	9 (6.8)	8 (5.2)	7(13.7)	-----	----	---	---
Elders	----	----	1 (0.6)	1 (1.9)	----	----	-----	----
C.family	65(76.5)	113(85.6	139(89.7	36(89.7)	16(53.3)	51(77.3)	103(90.4	43(82.7)
Yourself	7 (8.2)	5 (3.8)	6 (3.9)	5 (9.9)	5(16.7)	4 (6.0)	4 (3.5)	3 (5.8)
Total	85 (100)	132(100	155(100	51(100	30(100	66(100	114(100	52 (100)

*Source of data is primary.

It is observed from Table No. 3 that elders are not the main users of Fridge in case of the sample respondents belonging to the education level ' Metric & below' and 'Graduate', but in other two categories of education elders are the user only in few case, irrespective of the fact that respondents from different samples behave similarly. As in majority of cases combined family is the main user followed by children, respondent-itself and wife.

Husband is not main user of Washing Machine is case of 'Graduate' and 'Post Graduate' sample and in other cases he is the least user. It is confirmed from the table that majority of the respondents irrespective of their education level say that combined family is the main user of Washing machine followed by wife, and respondent-itself.

TABLE NO.4: RESPONDENTS' FAMILY INCOME AND MAIN USER OF THE DURABLES

	Fridge				**Washing Machine**			
Main user	Below Rs.5000	Rs.5000-10,000	Rs.10,000-15,000	Above R15,000	Below Rs.5000	Rs.5000-10,000	Rs.10,000-15,000	Above Rs 15000
Husband	-------	-------	-------	-------	1 (4.6)	1 (1.6)	--------	
Wife	2 (4.3)	3 (2.6)	3 (1.8)	2 (2.0)	5 (22.7)	5 (8.1)	11 (11.9)	10(11.6)
Children	5 (10.6)	5 (4.4)	5 (3.1)	20(20.2)	--------	--------	--------	--------
Elders	1 (2.1)	1 (0.9)	-------	--------	--------	--------	--------	--------
C.family	30(63.8)	100(87.7	150(92.0	73(73.7)	11(50.0)	52(83.9)	77(83.7)	73(84.9)
Yourself	9 (19.2)	5 (4.4)	5 (3.1)	4 (4.1)	5 (22.7)	4 (6.4)	4 (4.4)	3 (3.5)
Total	47 (100)	114(100	163(100	99 (100)	22 (100)	62 (100)	92 (100)	86 (100)

*Source of data is primary.

Table No. 4 reflects that elders are not the user of Fridge in both the upper income groups and are the least user in both the lower income groups. In majority of cases from the sample as a whole, combined family is the user of durable. Respondents itself as a user stands at second position in the first three income groups, whereas, children as user stands at second for upper income group. Wife is the least user in both the upper income groups.
Husband is not the user of Washing machine in both upper income groups and least user in both lower income groups. Majority of the respondents from all income groups says that Washing machine is used by combined family followed by wife and respondent it self.

TABLE NO.5: RESPONDENTS' OCCUPATION AND MAIN USER OF THE DURABLES

	Fridge				Washing Machine			
Main user	Business	Profession	Service	Any-other	Business	Profession	Service	Any- other
Husband	--	--	--	--	--	--	2(1.6)	--
Wife	1(1.0)	1(1.3)	5(3.2)	3(3.4)	5(16.7)	8(21.6)	12(9.6)	6(8.6)
Children	12(12.2)	8(10.1)	13(8.3)	2(2.2)	--	--	--	--
Elders	--	--	2(1.3)	--	--	--	--	--
C.family	81(82.6)	66(83.5)	128(81.5	78(87.6)	23(76.7)	27(73.0)	103(82.4	60(85.7)
Yourself	4(4.1)	4(5.1)	9(5.7)	6(6.7)	2(6.7)	2(5.4)	8(6.4)	4(5.7)
Total	98(100)	79(100)	157(100	89(100)	30(100)	37(100)	125(100	70(100)

*Source of data is primary.

Table No. 5 shows that in case of Fridge, respondents from every sample have shown similar kind of behaviour as combined family is the main user in high majority of the cases followed by children, yourself and wife. It was notable that husband and elders are not the main user of the durable.
Regarding Washing Machine, respondents irrespective of their occupation shown similar behaviour as combined family is the main user in high majority of the cases followed by wife and yourself. Children, elders and husband is not the user of the durable.

TABLE NO.6: RESIDENTIAL STATUS AND CONSUMER'S POST PURCHASE REACTION

	Fridge			Washing Machine		
P.P.Re-action	Rural	Urban	Total	Rural	Urban	Total
Fully satisfied	99 (45.4)	101 (49.3)	200 (47.3)	20 (20.6)	42 (25.5)	62 (23.7)
Satisfied	79 (36.2)	56 (27.3)	135 (31.9)	40 (41.2)	30 (18.2)	70 (26.7)
Normal	25 (11.5)	45 (21.9)	70 (16.5)	29 (29.9)	80 (48.5)	109 (41.6)
Not Satisfied	15 (6.9)	3 (1.5)	18 (4.3)	8 (8.3)	13 (7.8)	21 (8.0)
Total	218 (100)	205 (100)	423 (100)	97 (100)	165 (100)	262 (100)

*Source of data is primary.

Table No. 6 exposes that in case of Fridge, majority of the sample consumers were fully satisfied followed by satisfied (31.9%), normal (16.5%) and not satisfied (4.3%). Rural and urban consumers expressed similar kind of behaviour. Regarding Washing Machine, 41.6 percent of the sample consumers have shown normal post purchase reaction followed in descending order i.e. satisfied consumers 26.7 percent, fully satisfied consumers 23.7 percent and not satisfied consumers 8 percent. Regarding rural sample, majority was satisfied, whereas, normal reaction was shown by majority of the urban consumers. 8.3% rural consumers were not satisfied but this percentage was 7.8 in urban areas.

TABLE NO.7: EDUCATION LEVEL AND CONSUMERS POST PURCHASE REACTION

	Fridge				Washing Machine			
P.P.Reaction	Matric & below	Graduate	Post Graduate	Illiterate	Matric & below	Graduate	Post Graduate	Illiterate
Fullysatisfied	45(52.9)	62(47.0)	73(47.1)	20(39.2)	12(40.0)	13(19.7)	25(21.9)	12(23.1)
Satisfied	28(32.9)	47(35.6)	53(34.2)	7 (13.7)	11(36.7)	19(28.8)	30(26.3)	10(19.2)
Normal	10(11.8)	19(14.4)	21(13.5)	20(39.2)	4 (13.3)	26(39.4)	52(45.6)	27(51.9)
Not Satisfied	2 (2.4)	4 (3.0)	8 (5.2)	4 (7.9)	3 (10.0)	8 (12.1)	7 (6.2)	3 (5.8)
Total	85	132	155	51	30	66	114	52

*Source of data is primary.

It is observed from Table No.7 that in case of Fridge, consumers from literate sample expressed almost same kind of post-purchase reaction as majority of each sample was fully satisfied followed by satisfied, normal and lowest percentage was of those who responded as not satisfied. In case of 'Illiterate' sample, the percentage of fully satisfied consumers and those who had shown normal reaction, were equal (39.2%); only 7.9 percent were not satisfied with the purchased durable.
Regarding Washing Machine, level of education significantly affects the post-purchase behaviour of the consumers. Table shows that majority of the consumers having education 'Metric and Below' were fully satisfied followed by satisfied, normal and not-satisfied. Consumers having education 'Graduate' and 'Post-Graduate' have shown almost same kind of behaviour but in case of 'Illiterate' sample, majority (51.9%) of the consumers has shown normal reaction followed by fully satisfied (23.1%), satisfied (19.2%) and not satisfied (5.8%).

TABLE NO. 8: OCCUPATION AND CONSUMER'S POST PURCHASE REACTION

	Fridge				Washing Machine			
P.P.Reaction	Business	Profession	Service	Anyother	Business	Profession	Service	Anyther
Fulysatisfied	30(30.6)	12(15.2)	100(63.7	58(65.2)	9 (30.0)	13(35.1)	25(20.0)	15(21.4)
Satisfied	42(42.9)	31(39.2)	40(25.5)	22(24.7)	13(43.3)	10(27.0)	39(31.2)	8 (11.4)
Normal	21(21.4)	27(34.2)	15 (9.6)	7 (7.9)	1 (3.1)	11(29.7)	52(41.6)	45(64.3)
Not Satisfied	5 (5.1)	9 (11.4)	2 (1.2)	2 (2.2)	7 (23.4)	3 (8.2)	9 (7.2)	2 (2.9)
Total	98(100)	79 (100)	157(100	89 (100)	30 (100)	37 (100)	125(100	70 (100)

*Source of data is primary.

Table No. 8 explicit that in case of Fridge, majority of the consumer from 'Business' and 'Profession' categories was satisfied with the performance of Fridge and number of not satisfied was lowest. The percentage of fully satisfied consumers was higher in 'Business' category than 'Profession'. However, high majority of the consumers from 'Service' and 'Any other' category were fully satisfied with the purchased product, followed by satisfied, normal and not satisfied.
Regarding Washing Machine, 43.3 percent consumers from 'Business' category were satisfied, followed by fully satisfied (30%), and not satisfied (23.4%). For 'Profession' 35.1 percent consumers were fully satisfied and the least (8.2%) were not satisfied. 41.6 percent of 'Service' class consumers expressed normal behaviour, while, 31.2 percent were satisfied, 20 percent were fully satisfied, and 7.2 percent ware not satisfied. Sizeable majority (64.3%) of the consumers from 'Any other' category showed normal reaction followed by fully satisfied (21.4%), satisfied (11.4%) and lowest number (2.9%) were not satisfied.

TABLE NO.9: FAMILY INCOME AND CONSUMERS' POST PURCHASE REACTION

	Fridge				Washing Machine			
P.P. Reaction	Below Rs.5000	Rs.5000-10,000	Rs10,000-15,000	Above Rs15,000	Below Rs.5000	Rs.5000-10,000	Rs10,000-15,000	Above Rs15,000
Fulysatisfied	10(921.3	30(26.3)	84(51.5)	76(76.8)	7 (31.8)	7 (11.3)	27(29.4)	21(24.4)
Satisfied	13(27.7)	48(942.1	63(38.6)	11 (11.1)	5 922.7)	27(43.5)	20(21.7)	18(20.9)
Normal	21(44.7)	29(25.4)	13 (8.0)	7 (7.1)	7 (31.8)	21(33.9)	36(39.1)	45(52.3)
Not Satisfied	3 (6.3)	7 (6.2)	3 (1.9)	5 (5.0)	3 913.7)	7 (11.3)	9 (9.8)	2 (2.4)
Total	47 (100)	114(100	163(100	99 (100)	22 (100)	62 (100)	92 (100)	86 (100)

*Source of data is primary.

It is confirmed from Table No.9 that in case of Fridge, 44.7 percent of the consumers from lower income group have shown normal reaction, whereas, only 6.3 percent were not satisfied. In case of income group 'Rs.5000-Rs.10,000,' 42.1 percent consumers were satisfied, followed by fully satisfied, normal and not satisfied. Consumers from both the upper income groups have shown similar behaviour as majority of these was fully satisfied followed by satisfied, normal and not satisfied.

For Washing Machine, equal percentage (31.8) of the consumers from lower income group said that they were fully satisfied as well as expressed normal post-purchase reaction. But 13.7 percent consumers from same sample were not satisfied. In income group 'Rs. 5000-Rs.10,000' majority of the consumers was satisfied followed by normal (33.9%), whereas, 11.3% were not satisfied. It was notable that consumers from both the upper income group expressed same kind of behaviour as majority of these said that they have normal attitude towards the product followed by fully satisfied, satisfied, and not satisfied.

SOCIO DEMOFRAPHIC EFFECT

EFFECT ON THE USE OF DURABLES

TABLE NO.10: EFFECT OF RESIDENTIAL STATUS ON MAIN USER OF DURABLES

Particulars	Valueofχ^2	d.f.
Residential Status and Main user of Fridge	15.80	4
Residential Status and Main user of Washing Machine	4.56	3

Table No.10 shows that the calculated valued of x^2 for Fridge is much higher than the table value. The hypothesis is rejected. But in case of Washing Machine, the table value of X^2 is higher than the calculated value for three degree of freedom and 5% level of significance. Hence, the hypothesis is accepted. We, therefore, conclude that residential status of consumer is independent from the main user of Washing Machine but it significantly affects the use of Fridge.

TABLE NO.11: EFFECT OF CONSUMER'S EDUCATION ON MAIN USER OF DURABLES

Particular	Valueofχ^2	d.f.
Level of Education and Main user of Fridge	19.97	12
Level of Education and Main user of Washing machine	26.00	9

Table No.11 provides information that the calculated value of X^2 for twelve degree of freedom and 5% level of significance is less than the table value of Fridge only. The hypothesis is accepted. But in case of Washing Machine, the calculated value of X^2 is much higher than the table value. Hence, hypothesis is rejected. Therefore, it is concluded that level of education is independent from the main user of Fridge but it is significantly associated with the use of other durables.

TABLE NO.12: EFFECT OF CONSUMER'S FAMILY INCOME ON MAIN USER OF DURABLES

Particulars	Valueofχ^2	d.f.
Family Income and Main user of Fridge	54.33	12
Family Income and Main user of Washing Machine	23.29	9

Table No.12 shows that the calculated value of X^2 in respect of both the durables is higher than the table value. The hypothesis is rejected. Thus, it can be concluded that family income significantly affects the main user of the durables.

TABLE NO.13: EFFECT OF CONSUMER'S OCCUPATION ON MAIN USER OF DURABLES

Particulars	Valueofχ^2	d.f.
Occupation and Main user of Fridge	12.38	12
Occupation and Main user of Washing machine	7.61	9

Table No.13 discloses the information that regarding both the durables the calculated value of X^2 at nine and twelve degree of freedom and 5% level of significance is less then the table value. Hence the hypotheses hold true and it can be concluded that in case of both the durables occupation of the consumer does not affect the main user.

EFFECT ON POST PURCHASE REACTION

TABLE.NO14: RESIDENTIAL EFFECT ON CONSUMER'S POST PURCHASE REACTION

Particulars	Valueofχ^2	d.f.
Residential Status and Post Purchase Re-action about Fridge	17.27	3
Residential Status and Post Purchase Re-action about Washing Machine	17.82	3

Table No. 14 depicts that, in case of Fridge and Washing machine, the calculated value of X^2 is much higher than the table value and the hypothesis is rejected. Hence, it can be concluded that Residential status of the consumer has significant effect on their post purchase reaction.

TABLE NO.15: EFFECT OF EDUCATION ON CONSUMER'S POST PURCHASE REACTION

Particulars	Valueofχ^2	d.f.
Level of Education and Post Purchase Re-action about Fridge	28.66	9
Level of Education and Post Purchase Re-action about Washing Machine	16.27	9

Table No.15 reveals that null hypothesis is accepted in case of Washing machine as level of education has no effect on post purchase reaction of the consumers. But in case of Fridge, the calculated value of X^2 for nine degree of freedom and 5% level of significance is much higher than the table value. The hypothesis is rejected. Thus, it is concluded that level of education significantly effects the post-purchase reaction of the consumers of Fridge.

TABLE NO.16: EFFECT OF OCCUPATION ON CONSUMER'S POST PURCHASE REACTION

Particulars	Valueofχ^2	d.f.
Occupation and Post Purchase Re-action about Fridge	85.08	9
Occupation and Post Purchase Re-action about Washing Machine	45.21	9

Table No. 16 reveals that null hypothesis is rejected as calculated value of X^2 at nine degree of freedom and 5% level of significance is greater than the table value for both the durables. Thus it can be concluded that occupation of the consumers significantly effects the post-purchase reaction about durables.

TABLE NO17: EFFECT OF FAMILY INCOME ON CONSUMER'S POST PURCHASE REACTION

Particulars	Valueofχ^2	d.f.
Family Income and Post Purchase Re-action about Fridge	100.21	9
Family Income and Post Purchase Re-action about Washing Machine	33.03	9

Table No.17 reveals that the calculated value of X^2 for nine degree of freedom and 5% level of significance is higher than the table value for both the durables. The null hypothesis that 'income is indifferent from post purchase reaction of the consumers' is rejected. Therefore, it is concluded that income significantly effects the consumer's post-purchase reactions.

FINDINGS

1. Videocon is popular brand name of Fridge and Philips for Washing Machine among sample respondents. Simultaneously, good majority of the respondents also purchased the Fridge produced by Godrej, Voltas, Whirlpool and Washing Machine produced by Philips and Godrej.
2. Regarding main user of the different durables, combined family is the main user of Fridge and Washing machine but children, elders, and the husband are the user in least cases respectively for above mentioned home appliances.
3. It is also concluded that residential status of the consumers is not associated with the use of Washing machine, whereas, it significantly affects the use of Fridge.
4. Level of education also has no effect on the use of Fridge but for Washing Machine it significantly affects the use of the products.
5. It is also found that level of income of the consumers significantly affects the main user of the durables purchased.
6. Occupation of the consumers did not affect the use of both the home appliances.
7. Majority of the consumers of Fridge were fully satisfied followed by satisfied and the number of not satisfied was the least. While in case of Washing machine, normal reaction were shown by majority of the consumers, least percentage of consumers found not satisfied.
8. It is also concluded that residential status of the consumers has significant effect on their post purchase reaction about both the durables.
9. Consumer's education significantly affect post purchase reaction about Fridge but it is indifferent towards Washing Machine.
10. It is also found that occupation and level of income of consumers significantly affects their post purchase reaction about both the home appliances.

SUGGESTIONS

- Perceptions about the qualities of a product by the consumer plays a crucial role in the marketing milieu. It is on the basis of perceived quality that the consumer takes initial and important steps regarding the ultimate purchase, by making further inquiries. It is true specially in case of consumer durables because of certain reasons such as high price, long-term use, symbol of status, precautions regarding use of durables. So the manufacturer should concentrate on the quality of the durables and consumer should be informed properly about it. The procedure, if followed provides long term profit earning to the manufacturer and satisfaction to the consumer.
- High price and long-term use of durable compel the consumers to seek complete information about the product before final purchase. So advertisements should provide factual information to the masses instead of misleading information. Otherwise it will lead to a great loss to the organization in long run. Proper feed-back should be received to make the advertisement meaningful, purposive, and effective. Class of the consumer must be considered before finalizing an advertisement massage. In case of durable market, dealer plays an important role so reputation of the dealer and his behaviour must be sound.
- Every consumer must be aware of the terms and conditions of after-sale service agreement. This facilitates the consumers to avoid any dispute with the seller in future. In case of consumer durables, usefulness of after-sale service should be given consideration by all consumers to gain greater satisfaction from the purchased durables.

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ETHICAL HUMAN RESOURCES WITH SUSTAINABLE RESPONSIBLE BUSINESS LEADING TO EMPLOYEE ENGAGEMENT

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ABSTRACT

Business organizations have walked up to the need for being committed towards Corporate Social Responsibility. But still majority have just been taking up some form of philanthropic activities for its stakeholders. The employees of an organization occupy a central place in developing such a culture which underlines CSR values and competencies. The present study, therefore, is an attempt to explore the engagement of human resource management professionals in undertaking Corporate Social Responsibility. It also suggests Human Resource Management to take a leading role in encouraging CSR activities at all levels. The combined impact of CSR and human resource activities, which reinforce desirable behavior, can make a major contribution in creating long term success in organizations. Successful program on social responsibility rely heavily on enlightened people management practices. In this context HR department is assumed to be the coordinator of CSR activities in getting the employment relationship right which is a precondition for establishing effective relationships with external stakeholders and thus can orient the employees and the organization towards a socially responsible character. Armed with a strong and committed organizational culture reinforced by responsible Human Resource Management practices, the organizations can achieve heights of success by improved profitability, employee morale, customer satisfaction, legal compliance and societal approval for its existence.

KEYWORDS

CSR, Employee engagement, Sustainable Responsible Business.

INTRODUCTION

Sustainable Responsible Business is a powerful way of making sustainable competitive profit and achieving lasting value for the share holder as well as for stake holders. CSR and the reporting there of is a win-win opportunity, not just for companies and for financial investors but for society at large. sustainable responsible business (SRB) also known as corporate responsibility, corporate citizenship, responsible business, Corporate social responsibility (CSR), or corporate social performance, is a form of corporate self-regulation integrated into a business model.

In the late 1990s, SRB began to gain momentum as pressure from consumers, the media, activists and various public organizations demanded that companies contribute to society. In large part, the increasing focus on SRB has been fueled by a number of events in recent years, such as the highly publicized financial scandals of Enron and WorldCom, alleged sweatshop labor by retail clothing and sports shoe manufacturers and the alleged "under-the-table" deals that companies such as Halliburton have received. Now, reputation, brand, integrity and trust are increasingly considered important measures of corporate social responsibility.

HUMAN RESOURCES

A SRB program can be an aid to recruitment and retention, particularly within the competitive graduate student market. Potential recruits often ask about a firm's CSR policy during an interview, and having a comprehensive policy can give an advantage. CSR can also help improve the perception of a company among its staff, particularly when staff can become involved through payroll giving, fundraising activities or community volunteering. See also Corporate Social Entrepreneurship, whereby CSR can also be driven by employees' personal values, in addition to the more obvious economic and governmental drivers' lines for investing entities. Contents

Another concern is that sometimes companies claim to promote CSR and be committed to sustainable development but simultaneously engaging in harmful business practices. For example, since the 1970s, the McDonald's Corporation's association with Ronald McDonald House has been viewed as CSR and relationship marketing. More recently, as CSR has become main stream, the company has beefed up its CSR programs related to its labor, environmental and other practices.

WHAT IS SUSTAINABLE RESPONSIBLE BUSINESS (SRB)?

Sustainable Responsible Business is viewed as a comprehensive set of policies, practices and programs that are integrated into business operations, supply chains, and decision-making processes throughout the organization – wherever the organization does business – and includes responsibility for current and past actions as well as future impacts. SRB involves addressing the legal, ethical, commercial and other expectations society has for business, and making decisions that fairly balance the claims of all key stakeholders. Effective SRB aims at "achieving commercial success in ways that honour ethical values and respect people, communities, and the natural environment." Simply put, it means "what you do, how you do it, and what you say." Several terms have been used interchangeably with SRB.

ENGAGED EMPLOYEE

An "engaged employee" is one who is fully involved in, and enthusiastic about, his or her work, and thus will act in a way that furthers their organization's interests. Employee engagement is derived from studies of morale or a group's willingness to accomplish organizational objectives which began in the 1920s. Thus the birth of the term "employee engagement" is an individual's emotional phenomenon. Engagement at work was conceptualized by William A. Kahn (1990) as the 'harnessing of organizational members' selves to their work roles. In engagement, people employ and express themselves physically, cognitively, and emotionally during role performances. Csikzentmihalyi (1975) defines flow as the 'holistic sensation' that people feel when they act with total involvement. Flow is the state in which there is little distinction between the self and environment. When individuals are in Flow State little conscious control is necessary for their actions Employee Engagement as the extent to which workforce commitment, both emotional and intellectual, exists relative to accomplishing the work, mission, and vision of the organization. I see engagement as a heightened level of ownership where each employee wants to do whatever they can for the benefit of their internal and external customers, and for the success of the organization as a whole.

HR'S ROLE IN SRB

HR'S ROLE IN PROMOTING SUSTAINABLE RESPONSIBLE BUSINESS

With the growing importance of SRB in companies, HR professionals play a key role in initiating, developing and sustaining SRB activities in the organization. While some companies have separate SRB executives who are responsible for coordinating and managing events, most companies expect HR personnel and

other employees to invest their time and participate in such activities. Given this hectic pace of work, it's a challenge for any organization to sustain SRB initiatives. Therefore, HR professionals have an indispensable role to play in the areas of creating strong organizational culture aligning with core company values, fostering relationship that is sensitive to the community culture, engaging every employee in active community activities, and assessing the environment in order to identify threats to the community.

INDIA'S HUMAN RESOURCE (HR)

Over the last decade, India's vast manpower has played an instrumental role in its economic success story. Several corporate bigwigs are now thinking of ways of building the skill sets of their employees. Indian companies are shifting their young managers abroad to handle diversity at an early stage and help create a reserve of globally competent people.

The Tatas, Aditya Birla Group, Essar Group, Infosys and mid-cap firms like Glenmark Pharmaceuticals and S Kumars Nationwide (SKNL) are among companies that nurture global talent.The way a company treats its employees contributes directly to the company being seen as willing to accept organizations wider responsibilities. Building credibility and trusting their employer are being increasingly seen as important by employees when they choose who they want to work for. HR manager should instill individual social responsibility in every employee in the organization.

Human Resource Departments play a critical role in ensuring that the company adopts Corporate Social Responsibility programs. Furthermore, HR can manage the SRB plan implementation and monitor its adoption proactively, while documenting (and celebrating) its success throughout the company.

HR STRATEGIC FOCUS

- As a HR professional, must make their employees aware of the company's commitment to SRB & to motivate the employees to participate in such activities.
- SRB initiatives can be integrated in the philosophy of the organization and assimilating it in the core values and mission statement of the company.
- HR practices should include SRB as one of the strategic imperative of the company's annual goals and therefore make SRB every body's business and not relegate it to any specific group of employees.
- HR professionals need to play a more proactive role in defining, implementing ,adding value to and monitoring SRB policies and practices, if they are to involve and meet the expectations of the key stake holders is that employees.
- Organizations need to create structure and policies to provide assistance, financial and in kind, as well as contribution of time and expertise, emphasizing on engaging employees in community program.
- The performance appraisal process can also measure the contribution of an employee towards the community development and adequate weightage can be given for providing rewards and promotions.
- A part from employees, SRB activities should also involve business partners, stake holders and customers to amalgamate their involvement and make it inclusive and far reaching.

SUSTAINABLE RESPONSIBLE BUSINESS (SRB)

SUSTAINABLE RESPONSIBLE BUSINESS IN INDIA

Indian companies are now expected to discharge their stakeholder responsibilities and societal obligations, along with their shareholder-wealth maximization goal. Nearly all leading corporate in India are involved in corporate social responsibility (CSR) program in areas like

- education
- health
- livelihood creation
- skill development
- Empowerment of weaker sections of the society etc.

Notable efforts have come from the Tata Group, Infosys, Bharti Enterprises, ITC Welcome group, Indian Oil Corporation among others.

The 2010 list of Forbes Asia's '48 Heroes of Philanthropy' contains four Indians. The 2009 list also featured four Indians. India has been named among the top ten Asian countries paying increasing importance towards corporate social responsibility (CSR) disclosure norms. India was ranked fourth in the list, according to social enterprise SRB Asia's Asian Sustainability Ranking (ASR), released in October 2009.

The companies have on an aggregate, identified 26 different themes for their CSR initiatives. Of these 26 schemes, community welfare tops the list, followed by education, the environment, health, as well as rural development.

Further, according to a study by financial paper, The Economic Times, donations by listed companies grew 8 per cent during the fiscal ended March 2009. The study of disclosures made by companies showed that 760 companies donated US$ 170 million in FY09, up from US$ 156 million in the year-ago period. As many as 108 companies donated over US$ 216,199, up 20 per cent over the previous year.

FACTORS LEADING TO SRB ACTIVITIES

Many factors have led to companies paying attention to the CSR activities.

These include:

- Sustainable development
- Governance
- Communications
- Ethics
- Leadership
- Globalization
- Corporate sector impact
- Finance
- Consistency and Community
- Business Tool etc.

FEW EXAMPLES OF SRB IN INDIA

- ✓ The training of employees through "CSR Living Our Values Learning Tool" at Cadbury Schweppes (Young, 2006), the major global beverage and confectionary organization, has been a good example of partnership between HR and CSR. The company has also included social responsibility in the latest management development initiatives like the global "Passion for People" management skills program.
- ✓ According to a National Geographic survey which studied 17,000 consumers in 17 countries, Indians are the most eco-friendly consumers in the world. India topped about in energy use and conservation, transportation choices, food sources, the relative use of green products versus traditional products, attitudes towards the environment and sustainability and knowledge of environmental issues.
- ✓ IBM has joined hands with the Tribal Development Department of Gujarat for a development project aimed at tribals in the Sasan area of Gir forest.
- ✓ Wipro inculcates CSR values amongst its workforce right at the beginning during the induction process
- ✓ Companies like Wipro, Infosys, Dabur, and ICICI have even framed whistle blowing policy and showing their positive approach towards unethical practices

BENEFITS OF SRB

1) SRB can be used to measure the performance management systems of a company
2) Sustainable responsible business can be a Competitive Advantage in Attracting a Quality Workforce
3) SRB can survive Global economic recession:
4) Creating a Safe and Healthy Workplace
5) From a corporate social responsibility perspective, the implementation of a workplace health
6) Minimizing harm to the environment
7) SRB will not harm human stakeholders

8) Increased production output or innovative production methods
9) Because of SRB HR are less likely to leave the company voluntarily
10) HR may spread word of mouth advertising about how good the company is to work for.

EMPLOYEE ENGAGEMENT

The essence of employee engagement is to provide a positive environment where employees are free to contribute, and desire to contribute, more of their energy, efforts and thought processes in ways that significantly and favorably impact the goals of the organization. The Towers Perrin report further stated that companies who choose to invest time and attention in leadership, management, career development, and relevant rewards would eventually be viewed as employers of choice and more successfully engage their workers. Obviously, such investment doesn't come easy. But ask yourself what it is worth to significantly elevate employee engagement in your organization.

What happens when we have true employee engagement? Each employee has accepted a specific challenge and responds in a favorable way towards achieving a goal. There is a willingness to help the organization achieve its goals. The organizational goal has also become a personal goal for the engaged employee. This blending of goals is what drives successful outcomes because the employee truly cares about attainment of a favorable result.

FACTORS INDUCING EMPLOYEE ENGAGEMENT

There are some nine factors that define employee engagement within a given organization. They are listed in descending order:

- Senior management communicates clear vision for long-term success
- Employees have decision-making input
- Employees have resources needed to perform jobs in a high quality way
- Employees work well in teams
- Company has a reputation as a good employer
- Employees have excellent career opportunities
- Company cares a great deal about customer satisfaction
- Employees have appropriate decision-making authority
- Company provides challenging work
- Senior management has sincere interest in employee's well being

BENEFITS OF EMPLOYEE ENGAGEMENT

- ✓ Increased productivity.
- ✓ Motivational driver
- ✓ Improved employee competency
- ✓ Recruitment of highly qualified staff
- ✓ Retention
- ✓ Enhanced corporate pride
- ✓ Integrate fellowship into HR practice
- ✓ Identify internal champions for change

MANAGERIAL IMPLICATIONS

- The HR department should take the responsibility to develop a formal policy on sustainable practices involving employees.
- The orientation program of newly recruited candidates should be designed in a manner that corporate philosophy about SRB gets highlighted.
- The Training facilities may also be made available to instill the SRB culture among employees.
- Responsible Human Resource Management practices on equal opportunities, diversity management, whistle blowing, redundancy, human rights, harassment shall give credibility to the SRB initiatives of the organization.
- HR should make employees aware that every single person in the society has responsibility to the society they belong irrespective of the job, class, caste or gender.
- The separation of employees during mergers, acquisitions, downsizing etc. should be strategically aligned with the business strategy as well as Corporate Social responsibility.
- The Human Resource department should effectively measure and evaluate SRB activities.
- SRB activities are generally designed by top management. The HR role is only the execution of those plans.
- SRB can be integrated in to processes such as employer brand, recruitment, appraisal, retention, motivation, rewards, internal communication, diversity, coaching and training.
- SRB is a strategic opportunity which is market –led and is restrained by bureaucracy. It needs dynamism, creativity, imagination and even opportunities.
- Indian companies have to be sensitized to SRB in the right perspective in order to facilitate and create an enabling environment for equitable partnership between civil society and business.
- A part from individual efforts, companies as part of the strategy are coordinating with social organizations to take up projects like specialized medical care, blood banks, labs, slum development programs, education endeavors, environment friendly projects etc.

CONCLUSION

SRB activities undoubtedly enhance the reputation, respect and the brand image of the company in the place they operate. This would inevitably improve their profitability, attract, and retain talent, increase savings, institute diversity and establish their strong foothold in their sphere of operation. In a larger sense, they ensure a better world for the generations to come. Moreover, an individual can significantly grow and learn by participating and connecting with the society. Individuals gain self- confidence and self-esteem by helping others. The insights, knowledge and tremendous satisfaction one derives can be more enriching than monetary awards. It is the HR Professionals who can instill, nourish and stress the importance of CSR activities to the employees and management of the organization and make it a reality. Otherwise, like in most companies, SRB unfortunately would only remain in the annals of discussions and presentations.

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JUDGING THE SHORT TERM SOLVENCY OF SELECTED INDIAN AUTOMOBILE SECTOR COMPANIES

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ABSTRACT

This empirical study of ten auto mobile companies in India demonstrates the significance of inferential statistics in analyzing and solving complex business problems. The accounting techniques of ratio analysis have been used in conjunction with the techniques of inferential statistics to draw the inferences regarding short-term solvency of the company selected for the study. Decide the main liquidity ratios, the relevant turnover ratios have also been used to know how quickly different components of current assets are converted into cash so as to maintain liquidity in the business. In addition, statistical tools like mean, Standard Deviation, Coefficient of Variance (CV), Analysis of Variance (ANOVA) and Student's T–test of hypothesis testing has been applied. Thus, this study focuses on the pertinence of statistical tools in evaluating the short-term financial strength of the selected companies in conjunction with the relevant liquidity and turnover ratio. In the end, study offers some meaningful suggestions in order to improve the short-term solvency of the automobile companies selected for this study.

KEYWORDS

Automobile Sector, Liquidity Ratios, Short Term Financial Strength, Short Term Solvency Ratios, Turnover Ratios

INTRODUCTION

Inferential statistics cover those methods which help in drawing inferences on the characteristics of the population, on the basis of a sample (Sancheti and Kapoor, 2007). It is an applied branch of statistics that helps in generalization of facts representing the population. These inferences are drawn for specific purposes, e.g., efficiency of management, strengths and weaknesses of the firm, cost and profit relationship, etc. with inferential statistics, we try to reach conclusion that extended beyond the immediate data alone. For instance, we use inferential statistics to infer from the sample data what the population might think. Or, we use inferential statistics to make judgments of the probability that an observed difference between groups is a dependable one or one that might have happened by chance in this study. Thus, we use inferential statistics to make inferences from data of more general conditions (William, 2006). Liquidity is a prerequisite for the very survival of a business unit. Liquidity represents the ability of the business concern to meet the short-term obligation when they fall due for payment (Vinayakam and Sinha, 2000). The term 'liquidity' implies conversion of assets into cash without much loss (Rao and Subbarayudu, 2000). The creditors of the firm are interested in short-term solvency or liquidity of a firm (Khan and Jain, 2007). The short term debt paying capacity of the firm would be satisfactory, if it is in a position to meet its short-term debts when they fall due. Ratio analysis, ratios are of crucial significance. The importance of ratio analysis lies in the fact that it enables in drawing inferences regarding performance of a company as it shows facts logically on a company in respect of different aspects such as liquidity position, long –term, solvency, profitability, operating efficiency, etc. (Khan & Jain, 2007). Thus, it is used to interpret the financial statements in order to ascertain the strengths and weakness of a firm. The present study analyzes the short-term debt paying capacity aspect of financial performance of ten leading auto mobile companies in India. The study is an attempt to auto mobile companies in India.

OBJECTIVES OF THE STUDY

Following are the major objectives of the study:

- To get overview of Indian auto sector and selected ten leading auto sector companies of India.
- To work out the overall quantum of liquidity maintained and to compare it among the selected companies.
- To evaluate the short-term solvency position of the selected companies.
- To determine the relative position (rank) of the sample companies in order of liquidity maintained by them.
- To find out how quickly different current assets are converted into cash by the selected companies using relevant turnover ratio.
- To infer whether the difference in diverse liquidity ratio between and within the selected sample companies is significant or not by applying the statistical technique of Analysis of Variance (ANOVA)
- To test the significance of the difference in the mean liquidity ratios between two sample companies by employing the student's t-test.

SAMPLE DESIGN

The current study has been carried out by taking a sample of ten leading auto companies in India, viz., Tata Motors, Mahindra & Mahindra, Bajaj Auto, Maruti Suzuki, Hero Honda Motors, Cummins India Ltd., Exide Industries, Bharat Forge, Ashok Leyland, Apollo Tyre. The reason for selecting these companies is that they all maintain their accounts financial year-wise and leading companies in auto sector. On 31st December, 2010 researchers selected companies on the basis of his market capitalization. The relevant data have been mainly gathered from the published annual reports and accounts of the selected auto companies. The other sources which have been used are technical and trade journals, newspapers and other published information. The study covers a period of five years, from 2005-06 to 2009-10.

RESEARCH METHODOLOGY

- The researchers have used a descriptive statistic during the research process to calculate the various ratio analyses.
- The researchers have applied the influential statistic method in the study, i.e. Mean, SD, Coefficient, ANOVA and T-test etc.
- The study is broadly devoted to the application of different techniques of inferential statistics in the analysis of liquidity position of ten auto companies in India.
- Liquidity Ratios used for the study: Current ratio and Quick ratio
- Turnover ratios used for the study: Debtor turnover ratio, Stock turnover ratio, Current assets turnover ratio and Net working capital turnover ratio
- Statistical tools used for the study: Mean, SD, Coefficient of variance ,ANOVA and T-test

HYPOTHESIS

In present era of science, logic and technology, it is not possible to draw any conclusion accurately without proving it objectively. To test the validity of the inferences draw on the basis of liquidity ratios and the relevant turnover ratios used in this research study, statistical technique of hypothesis testing has been applied to determine whether the inferences drawn on the basis of liquidity ratio are true or false at a specified level of significance (Levin I Richard, 1995) Hypothesis testing enable a decision maker to draw inferences more precisely (Elhance, 2007) testing hypothesis and essential part of the study of inferential statistics because it enables the research's to confidently examine the accuracy of their results (Sadhu A N, 1996). Several hypotheses have been formulated and tested statistically to draw conclusion on the liquidity of the selected companies. The following hypothesis has been set and tested in the present research.

H0: There is no significance difference between the diverse liquidity aspects of the selected auto companies.

H1: There is significance difference between the diverse liquidity aspects of the selected auto companies.

LIQUIDITY RATIO AND TURNOVER RATIO

Ratio analysis is an important technique of financial analysis. It is the process of determining and interpreting numerical relationship between figures of the financial statement (Guthman H G, 1995). All the current and quick ratio are the tools for examining the liquidity position of a firm as a whole, another aspect of evaluating the liquidity is to see how quickly different current Asset are converted in to cash. The ratio which measures this aspect are referred to as turn over ratios. As a matter of fact, liquidity ratios are not independent of the relevant turnover ratios. In the present study, liquidity ratios have been calculated along with the relevant turnover ratios to assess the short term financial position of selected companies. Table 1 also present four important turnover ratios - STR, DTR, CATR and NWCTR - to examine the liquidity position of the selected auto companies with respect to the speed with which current assets and its components are converted into cash.

TABLE 1: MEAN LIQUIDITY AND TURNOVER RATIOS

COMPANY	CR	QR	ITR	DTR	CATR	NWCTR
APOLLO	0.976	0.874	8.91	26.506	2.5991	9.183
ASHOK	1.166	0.716	6.258	12.436	2.3954	9.2771
BAJAJ	0.808	0.674	31.572	27.3625	3.4801	-16.2929
BHARAT	1.186	1.336	10.022	7.674	1.109	0.3554
CUMMINS	1.782	1.232	7.608	4.88	2.1155	2.4963
EXIDE	1.108	0.492	7.144	14.396	4.0148	11.6299
HERO HONDA	0.516	0.374	41.628	64.16	9.99	-9.4242
MARUTI	1.3	1.008	23.856	25.316	4.7763	108.867
M&M	1.078	0.856	13.232	14.22	2.7893	17.0825
TATA MOTORS	0.69	0.714	12.464	25.824	2.5446	-2.3257

Source: calculated from the Annual reports of all the selected companies, from 2006 to 2010

- It is clear from Table 1 that the current ratio in Cummins is highest, followed by those of Maruti, Bharat forge, Ashok Leyland, Exide, M&M, Apollo, Bajaj, Tata Motors and Hero Honda during the period of the study. It is around 1:1 in all the ten auto companies selected for this study. Thus, it can be conclude that the liquidity condition of all sample companies is quite satisfactory.
- It is also evident from Table 1 that the quick ratio in Bharat forge highest , followed by those of Cummins, Maruti, Apollo, M&M, Ashok Leyland, Tata Motors, Bajaj, Exide and Hero Honda during the study period. It is around 1:1 in all the ten auto companies selected for this study. It is thus, quit clear that the short term financial strength of all the sample companies is very good.
- It is, however, important to note here that very high liquidity ratios (current and quick) may be considered to be good from the point of view of the creditors, but it may be indicative of slack management practices of a company, as it singles excessive inventories, poor credit standards and lenient collection policies pursued by company and company may not be making full use of its borrowing capacities (Spiller E A, 1977). Thus, a company should always maintain reasonable level of current/liquid assets in respect to its current liabilities.
- It is evident from Table 1 that Hero Honda quite efficiently converts its current assets into cash as, all the four turnover ratios of this company are more than the corresponding turnover ratios of other four sample companies during the period of study. It is thus clear that inventory management, receivables management and overall current assets management of Hero Honda are quite effective and help the company in maintaining a good quantum of liquidity.
- Table 1 also reveals that Bharat Forge is inefficient in converting current assets into cash as all the four turnover ratios of this company are lower than the corresponding turnover ratios of the other nine auto companies. It is therefore concluded that the inventory management, credit management, collection policy and overall current assets management of Hero Honda are quite sloppy and as a result the speed with which the current assets and its component are rotated is slow.
- It can also be observed from Table 1 that the performance of Maruti, Exide, Bajaj, M&M, Apollo, Tata Motors, Ashok Leyland and Cummins in respect of ability to convert current assets into cash is reasonably good, as is clear from the four turnover ratios used for this purpose.

RANKING OF THE SELECTED COMPANIES

In the paper an attempt has been made to evaluate the relative short financial position of the selected ten auto companies. For this purpose, ranks have been provided on the basis of mean liquidity and turnover ratios in descending order. Then, all the ranks given to each company are added and final ranks have been

worked out on the basis of total ranks indicating the relative liquidity positions of the selected sample companies. It is evident from Table 2 that Maruti occupies the first position, followed by M&M, Hero Honda, Apollo, Bajaj, Exide, Bharat Forge, Cummins, Ashok Leyland and Tata Motors, in maintaining their short-term solvency position during the period under reference.

TABLE 2: OVERALL RANKING OF SELECTED COMPANIES ON THE BASIS OF THE CALCULATED MEAN RATIO

COMPANY	CR	QR	STR	DTR	CATR	NWCTR	TOTAL RANKS	RANKS
APOLLO	7	4	7	3	6	5	32	3.5
ASHOK	4	6	10	8	8	4	40	9.5
BAJAJ	8	8	2	2	4	10	34	5
BHARAT	3	1	6	9	10	7	36	7.5
CUMMINS	1	2	8	10	9	6	36	7.5
EXIDE	5	9	9	6	3	3	35	6
HERO HONDA	10	10	1	1	1	9	32	3.5
MARUTI	2	3	3	5	2	1	16	1
M&M	6	5	4	7	5	2	29	2
TATA MOTORS	9	7	5	4	7	8	40	9.5

Source: calculated from the annual reports of all the selected companies, from 2006 to 2010

TWO – WAY ANALYSIS OF VARIANCE

Two – way ANOVA is used to test the significance of difference in the liquidity ratios within a sample company during the study period and also to examine the significance of difference in the liquidity ratios between selected sample companies simultaneously. With two – factor ANOVA, two sets of hypotheses can be tested with the same data at the same time (Gupta S P, 2008). The following hypotheses have been formulated for the purpose:

H01: There is no significant difference in the liquidity ratios within a sample company during the previous years of study.

H11: There is significant difference in the liquidity ratios within a sample company during the previous years of study

H02: There is no significant difference between the liquidity ratios of different companies selected for this study.

H12: There is significant difference between the liquidity ratios of different companies selected for this study.

INTRA – FIRM COMPARISON (WITHIN SAMPLE)

Intra-firm comparison involves comparing the ratios of a company over a period of time. It reflects the relative performance of a company from year to year. Table presents the results of ANOVA along with the conclusion whether the null hypotheses are accepted or rejected. Table show that the calculated-ratios are lower than the critical F-ratios in case of debtor turnover ratio, thus null hypothesis (H01) is accepted at 5% level of significance, which implies that there is no significance difference in debtor turnover ratio during study period in all selected companies. However, the calculated F-ratios are higher than the critical F-ratios in case of current ratio, quick ratio, inventory turnover ratio, current assets turnover ratio and net working capital turnover ratios of all the companies. Thus null hypothesis (H01) is rejected at 5% level of significance, which implies that there is significance difference in current ratio, quick ratio, inventory turnover ratio, current assets turnover ratio and net working capital turnover ratios of all selected companies over the study period.

INTER – FIRM COMPARISON (BETWEEN SAMPLE)

Inter-firm comparison involves comparing the ratios of a company with those of others in same industries. It reflects a company's performance relative to its competitor. It is evident from Table that that calculated F-ratios are lower than the critical F-ratios in case of current ratio, , debtor turnover, current assets turnover ratio and net working capital turnover ratios, thus null hypothesis (H02) is accepted at 5% level of significance, which implies that there is no significance difference between the liquidity position of all the selected companies in term of current ratio, , debtor turnover, current assets turnover ratio and net working capital turnover ratios that used in during study period. However, the calculated F-ratios are higher than the critical F-ratios in case of quick ratio and inventory turnover ratio of all the companies. Thus, the null hypothesis (H02) is rejected at 5% level of significance, which implies that there is significance difference between the liquidity position of all companies in term of quick ratio and inventory turnover ratio, of liquidity used in this study.

TABLE 3: RESULTS OF TWO-WAY ANOVA

Ratios	*Source of Variation*	*SS*	*Df*	*MS*	*F*	*F crit*	*Result h0 is*
CR	Rows	5.56005	9	0.6177833	16.438423	2.152607472	Rejected
	Columns	0.26226	4	0.065565	1.74460065	2.633532094	Accepted
	Error	1.35294	36	0.0375817			
	Total	7.17525	49				
QR	*Source of Variation*	*SS*	*Df*	*MS*	*F*	*F crit*	*Result h0 is*
	Rows	4.124232	9	0.458248	26.5220512	2.152607472	Rejected
	Columns	0.422272	4	0.105568	6.10996643	2.633532094	Rejected
	Error	0.622008	36	0.017278			
	Total	5.168512	49				
ITR	*Source of Variation*	*SS*	*Df*	*MS*	*F*	*F crit*	*Result h0 is*
	Rows	6550.83396	9	727.87044	77.5479633	2.152607472	Rejected
	Columns	131.8556	4	32.9639	3.51200319	2.633532094	Rejected
	Error	337.89844	36	9.3860678			
	Total	7020.588	49				
DTR	*Source of Variation*	*SS*	*Df*	*MS*	*F*	*F crit*	*Result h0 is*
	Rows	12801.56736	9	1422.3964	9.51836566	2.152607472	Accepted
	Columns	966.9782155	4	241.74455	1.61770172	2.633532094	Accepted
	Error	5379.733379	36	149.43704			
	Total	19148.27896	49				
CATR	*Source of Variation*	*SS*	*Df*	*MS*	*F*	*F crit*	*Result h0 is*
	Rows	275.2470771	9	30.583009	24.3624814	2.152607472	Rejected
	Columns	3.253999509	4	0.8134999	0.64803551	2.633532094	Accepted
	Error	45.19196094	36	1.2553322			
	Total	323.6930376	49				
NWCTR	*Source of Variation*	*SS*	*Df*	*MS*	*F*	*F crit*	*Result h0 is*
	Rows	76708.33961	9	8523.1488	2.43536531	2.152607472	Rejected
	Columns	15828.12419	4	3957.031	1.13066383	2.633532094	Accepted
	Error	125990.6912	36	3499.7414			
	Total	218527.155	49				

Note: SS: Sum of squares; MS: Mean Square; and SSE: Sum of squares of Errors

Sources: calculated from the Annual Reports of all the selected companies, from 2005-06 to 2009-10

STUDENT T-TEST

LIQUIDITY RATIOS

The student's t-test has also been applied on both the liquidity ratios (current and quick ratios) by making 45 different combinations of two companies from the selected 10 sample companies, for examining the intercompany liquidity position s and also to determine the significance of difference in current ratio and quick ratio of the companies. For this purpose, total 90 different hypotheses (45 current ratio and 45 quick ratios) have been formulated and statistically tested at 5% level of significance. Table presents the results of this test along with the conclusion whether the null hypotheses have been accepted or rejected.

TABLE 4: RESULTS OF STUDENT'S T-TEST (LIQUIDITY RATIOS)

	AP-AS	AP-BJ	AP-BH	AP-CU	AP-EX	AP-HO	AP-MA	AP-MM	AP-TM
HO	**μa=μas**	**μa=μb**	**μa=μbh**	**μa=μc**	**μa=μe**	**μa=μh**	**μa=μm**	**μa=μmm**	**μa=μt**
H1	**μa>μas**	**μa>μb**	**μa>μbh**	**μa>μc**	**μa>μe**	**μa>μh**	**μa>μm**	**μa>μmm**	**μa>μt**
Critical Value	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**
CV CR	1.370850	1.324666	1.124122	1.768363	0.844736	1.790789	1.027803	0.637763	1.148593
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
CV QR	1.281315	1.411706	1.583561	1.603861	1.718293	1.792792	0.570520	0.177791	0.846889
	AS-BJ	**AS-BH**	**AS-CU**	**AS-EX**	**AS-HO**	**AS-MA**	**AS-MM**	**AS-TM**	**BJ-BH**
HO	**μas=μb**	**μas=μbh**	**μas=μc**	**μas=μe**	**μas=μh**	**μas=μm**	**μas=μmm**	**μas=μt**	**μb=μbh**
H1	**μas<μb**	**μas<μbh**	**μas<μc**	**μas<μe**	**μas<μh**	**μas<μm**	**μas<μmm**	**μas>μt**	**μb>μbh**
Critical Value	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86
CV CR	1.761342	0.140627	1.707426	0.432560	1.860699	0.497089	0.589204	1.507625	1.557948
Result: H0 is	Accepted	Accepted	Accepted	Accepted	**Rejected**	Accepted	Accepted	Accepted	Accepted
CV QR	0.548085	1.726044	1.773998	1.614527	1.771997	1.101421	1.276602	0.012648	1.740465
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
	BJ-CU	**BJ-EX**	**BJ-HO**	**BJ-MA**	**BJ-MM**	**BJ-TM**	**BH-CU**	**BH-EX**	**BH-HO**
HO	**μb=μc**	**μb=μe**	**μb=μh**	**μb=μm**	**μb=μmm**	**μb=μt**	**μbh=μc**	**μbh=μe**	**μbh=μh**
H1	**μb>μc**	**μb>μe**	**μb<μh**	**μb<μm**	**μb<μmm**	**μb>μt**	**μbh<μc**	**μbh<μe**	**μbh<μh**
CV	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**
CV CR	1.817029	1.479671	1.763465	1.344131	1.359072	0.592399	1.610850	0.434670	1.772808
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
CV QR	3.158828	0.450278	3.120001	0.839416	0.776710	0.221899	0.588742	1.796404	1.820014
Result: H0 is	**Rejected**	Accepted	**Rejected**	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
	BH-MA	**BH-MM**	**BH-TM**	**CU-EX**	**CU-HH**	**CU-MA**	**CU-MM**	**CU-TM**	**EX-HH**
HO	**μbh=μm**	**μbh=μmm**	**μbh=μt**	**μc=μe**	**μc=μh**	**μc=μm**	**μc=μmm**	**μc=μt**	**μe=μh**
H1	**μbh<μm**	**μbh<μmm**	**μbh>μt**	**μc<μe**	**μc<μh**	**μc<μm**	**μc<μmm**	**μc>μt**	**μe<μh**
Critical Value	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**
CV CR	0.391578	0.562514	1.440552	1.677994	1.850617	1.243189	1.678412	1.757424	1.765648
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
CV QR	1.069590	1.616814	1.605848	1.830801	1.849546	0.868707	1.651978	1.594866	1.227200
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
	EX-MA	**EX-MM**	**EX-TM**	**HH-MA**	**HH-MM**	**HH-TM**	**MA-MM**	**MA-TM**	**MM-TM**
HO	**μe=μm**	**μe=μmm**	**μe=μt**	**μh=μm**	**μh>μmm**	**μh>μt**	**μm>μmm**	**μm>μt**	**μmm>μt**
H1	**μe<μm**	**μe<μmm**	**μe>μt**	**μh<μm**	**μh<μmm**	**μh<μt**	**μm<μmm**	**μm<μt**	**μmm<μt**
Critical Value	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**
CV CR	0.646075	0.170938	1.351367	1.612336	1.726884	0.837363	0.720731	1.360134	1.278704
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
CV QR	1.482307	1.735214	1.119668	1.593382	1.806583	1.421832	0.648681	0.975023	0.787742
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted

Note: Significance Level 5%; Degree of Freedom (n-1): and Type of test: One Tailed

Source: Calculated From the Annual Report and Account of the Selected Companies, from 2005-06 to 2009-10

It is evident from Table 4 that out of 45 different combinations made for the intercompany comparison of current ratio, in 44 combinations the null hypotheses of no significant difference have been accepted, which implies that the difference in mean current ratio is insignificant at 5% level of significance. In rest of the one combination, the null hypotheses are rejected, which reveals that there is a significant difference in the mean current ratio at 5% level of significance. It can also be seen from that out of 45 different combinations made for the intercompany comparison of quick ratio, in 43 combinations the null hypotheses of no significant difference are accepted, which reveals that the difference in mean quick ratio is insignificant at 5% level of significance. In rest of the two combinations, the null hypotheses are rejected, which implies that there is a significant difference in the mean quick ratio at 5% level of significance.

TURNOVER RATIOS

The Student's t-test has also been applied on four turnover ratios by making 45 different combinations of two companies, for examining inter companies, for examining intercompany liquidity positions and the significance of difference in the turnover ratios of each combination at 5% level of significance. For this purpose, total 180 different hypotheses (45 for each of the four turnover ratios) have been formulated and statistically tested Table present the conclusion whether the null hypotheses have been accepted or rejected.

TABLE 5: RESULTS OF STUDENT'S T-TEST (TURNOVER RATIOS)

	AP-AS	AP-BJ	AP-BH	AP-CU	AP-EX	AP-HO	AP-MA	AP-MM	AP-TM
HO	**μa=μas**	**μa=μb**	**μa=μbh**	**μa=μc**	**μa=μe**	**μa=μh**	**μa=μm**	**μa=μmm**	**μa=μt**
H1	**μa>μas**	**μa>μb**	**μa>μbh**	**μa>μc**	**μa>μe**	**μa>μh**	**μa>μm**	**μa>μmm**	**μa>μt**
Critical Value	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**
CV ITR	1.211943	1.843680	0.373386	0.746632	0.832003	1.864541	1.618232	1.252471	1.335767
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	**Rejected**	Accepted	Accepted	Accepted
CV DTR	1.224124	0.092226	0.066017	1.532846	1.139768	1.173095	0.130131	1.162037	0.070473
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
CV CA T/O	0.501390	1.040235	1.829192	1.494291	1.583261	1.733655	1.286465	0.730944	0.173888
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
CV NWA T/O	0.012864	1.529788	1.329292	1.133108	0.480988	1.691174	0.832468	0.897817	1.167339
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
	AS-BJ	**AS-BH**	**AS-CU**	**AS-EX**	**AS-HO**	**AS-MA**	**AS-MM**	**AS-TM**	**BJ-BH**
HO	**μas=μb**	**μas=μbh**	**μas=μc**	**μas=μe**	**μas=μh**	**μas=μm**	**μas=μmm**	**μas=μt**	**μb=μbh**
H1	**μas<μb**	**μas<μbh**	**μas<μc**	**μas<μe**	**μas<μh**	**μas<μm**	**μas<μmm**	**μas>μt**	**μb>μbh**
Critical Value	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86
CV ITR	1.862222	1.144594	1.129260	0.595993	1.873488	1.696270	1.617404	1.746836	1.811795
Result: H0 is	**Rejected**	Accepted	Accepted	Accepted	**Rejected**	Accepted	Accepted	Accepted	Accepted
CV DTR	1.601458	1.227542	1.544493	0.535880	1.424444	6.260818	0.573425	1.476191	1.758528
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
CV CA T/O	1.137864	1.679365	3.416531	1.579233	1.737620	1.330481	0.925865	0.348393	1.661365
Result: H0 is	Accepted	Accepted	**Rejected**	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
CV NWA T/O	1.508047	1.220930	1.022149	0.400077	1.634797	0.831578	0.842487	1.123606	1.350884
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
	BJ-CU	**BJ-EX**	**BJ-HO**	**BJ-MA**	**BJ-MM**	**BJ-TM**	**BH-CU**	**BH-EX**	**BH-HO**
HO	**μb=μc**	**μb=μe**	**μb=μh**	**μb=μm**	**μb=μmm**	**μb=μt**	**μbh=μc**	**μbh=μe**	**μbh=μh**
H1	**μb>μc**	**μb>μe**	**μb<μh**	**μb<μm**	**μb<μmm**	**μb>μt**	**μbh<μc**	**μbh<μe**	**μbh<μh**
Critical Value	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**
CV ITR	1.859756	1.855383	1.540723	0.713138	2.432109	7.805515	0.841321	0.910834	1.849318
Result: H0 is	Accepted	Accepted	Accepted	Accepted	**Rejected**	**Rejected**	Accepted	Accepted	Accepted
CV DTR	1.791990	1.582234	1.187367	0.360321	1.621442	0.237269	1.631511	1.630450	1.481165
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
CV CA T/O	1.374645	0.617169	1.669683	0.829396	0.878310	1.066990	1.854099	1.815487	1.780352
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
CV NWA T/O	1.428900	1.630622	0.722328	0.990019	1.624807	1.080703	1.734807	1.844302	1.806910
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
	BH-MA	**BH-MM**	**BH-TM**	**CU-EX**	**CU-HH**	**CU-MA**	**CU-MM**	**CU-TM**	**EX-HH**
HO	**μbh=μm**	**μbh=μmm**	**μbh=μt**	**μc=μe**	**μc=μh**	**μc=μm**	**μc=μmm**	**μc=μt**	**μe=μh**
H1	**μbh<μm**	**μbh<μmm**	**μbh>μt**	**μc<μe**	**μc<μh**	**μc<μm**	**μc<μmm**	**μc>μt**	**μe<μh**
Critical Value	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**
CV ITR	1.542279	0.870309	0.802014	0.347092	1.872344	1.669878	1.524930	1.694872	1.870053
Result: H0 is	Accepted	Accepted	Accepted	Accepted	**Rejected**	Accepted	Accepted	Accepted	**Rejected**
CV DTR	1.752700	1.789063	1.680416	1.770194	1.508861	1.791020	1.866449	1.731409	1.403184
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	**Rejected**	Accepted	Accepted
CV CA T/O	1.599494	1.860730	1.790067	1.725696	1.752403	1.426209	1.738373	1.266605	1.651639
Result: H0 is	Accepted	**Rejected**	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
CV NWA T/O	0.891140	1.555443	0.422622	1.820015	1.836121	0.877349	1.481197	0.721539	1.863703
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	**Rejected**
	EX-MA	**EX-MM**	**EX-TM**	**HH-MA**	**HH-MM**	**HH-TM**	**MA-MM**	**MA-TM**	**MM-TM**
HO	**μe=μm**	**μe=μmm**	**μe=μt**	**μh=μm**	**μh>μmm**	**μh>μt**	**μm>μmm**	**μm>μt**	**μmm>μt**
H1	**μe<μm**	**μe<μmm**	**μe>μt**	**μh<μm**	**μh<μmm**	**μh<μt**	**μm<μmm**	**μm<μt**	**μmm<μt**
Critical Value	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**	**1.86**
CV ITR	1.671274	1.513564	1.634839	1.642546	1.155135	1.859763	1.408538	1.490826	0.316175
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
CV DTR	1.532663	0.059867	1.427086	1.227975	1.406400	1.212278	1.583424	0.081717	1.466608
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
CV CA T/O	0.555704	1.526697	1.578843	1.503432	1.726820	1.734620	1.225580	1.298271	0.780866
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
CV NWA T/O	0.816438	0.787461	1.438540	0.951804	1.727194	0.959984	0.777550	0.907014	1.444553
Result: H0 is	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted

Note: Significance Level 5%; Degree of Freedom (n-1): and Type of test: One Tailed

Source: Calculated From the Annual Report and Account of the Selected Companies, from 2005-06 to 2009-10

It can be seen from Table 5 that out of total 180 hypotheses, in 10 cases the null hypotheses of no significant difference have been rejected, and it has been proved that the speed with which the different components of current assets are converted into cash is not equal. In other words, the inventory control, credit standards and collection policies of the companies are not equally efficient. It is, therefore, concluded that out of the selected companies some companies are more efficient than others. In the remaining 170 cases, the null hypotheses of no significant difference have been accepted at 5%level of significance, implying that they are at par and the difference is due to sample fluctuations only. The results of student's t-test are in line with our earlier conclusion drawn on the basis of ANOVA that liquidity management of the ten selected auto companies differs significantly.

CONCLUSION & SUGGESTIONS

Following are the major conclusion & suggestion:

- The mean current and quick ratios obtained are above 1:1, which reveals good liquidity position of all the companies selected for the study. However, it may be a signal of excessive inventories, poor credit standards and lax collection policies followed by the companies. It also indicates that the selected companies did not make good use of their borrowing capacities. It is, therefore, suggested that the sample companies should always keep reasonable level of current/liquid assets in respect to their current liabilities.
- All the mean turnover ratios of Maruti are highest among the selected auto companies, which exhibits the ability of Maruti to efficiently employ its different current assets in order to generate larger amount of sales and also to convert them into cash speedily. The mean turnover of the Cummins is lowest among the selected companies, which proves that the company failed in using its current assets in an efficient manner. It is, therefore, suggested the company should immediately review its inventory policy, credit standards and collections are managing their investments in different current assets satisfactorily.
- It is further clear from the ranking of the companies where Maruti occupies the first position in maintaining short-term solvency, followed by Mahindra and Mahindra, Apollo tyres , Hero Honda, Bajaj auto, Exide, Bharat forge, Cummins India, Ashok Leyland and Tata motors.
- The result of ANOVA make it clear that there are significance differences within a company's accounts and liquidity management practices followed by sample companies over the study period. However there are no significance differences between companies and liquidity management policies pursued by the selected companies. So, we can conclude that all the selected companies manage their liquidity position in different ways and means but use to manage it with Sample Company.
- The results of student's t-test of selected auto companies are managing their short term solvency position in different ways but there liquidity management is somewhat equally efficient.

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INSOLVENCY RISK OF SELECTED INDIAN COMMERCIAL BANKS: A COMPARATIVE ANALYSIS

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ABSTRACT

Financial intermediaries are going through significant changes all over the world under the impact of deregulation, technological upgradation and financial innovations. Indian banks in the new millennium are facing continuous challenges to introduce new and better products and services and provide new ideas and techniques in order to retain the existing customers and acquire new one. In this rapid changing environment banks are compelled to encounter various types of risks. This paper makes an attempt to measure the insolvency risk of selected Indian banks during the period 2000-01 to 2009-10 and also to identify key factors affecting insolvency risk. Z statistic is used to measure the insolvency risk. Findings of the study indicate that Z statistic for all the bank groups shows improvement over the years. Performance of public sector banks is quite satisfactory in this respect. Regarding the factors influencing insolvency risk, size is found to be the most significant influential factor among the variables chosen in this study that negatively associated with insolvency risk for all bank groups. Negative association is also observed between capitalization and insolvency risk for all cases.

KEYWORDS

Insolvency risk, bank specific key factors, Indian banks.

INTRODUCTION

Sound banking system is an important indicator of an economically strong nation. The Indian banking system has played a vital role in the growth and development of the economy (Satish, Jutur and Surendar, 2005). Since independence, banking industry in India has evolved through several distinct phases. During 'Reform Phase', a series of major reformative measures has been undertaken by the Government of India and the RBI on the basis of the recommendations of the Narasimham Committee in order to make the banks economically viable and financially strong. Deregulation of interest rates, introduction of prudential norms relating to income recognition, provisioning and capital adequacy, emergence of new private sector banks, opening up of branches of foreign banks in India, increasing use of technology, continuing mergers & acquisitions, modernizing backroom operation and emphasis on customer satisfaction have changed the whole scenario of the banking functions in recent years. Indian banks in the new millennium are facing continuous challenges to introduce new and better products and services and provide new ideas and techniques in order to retain the existing customers and acquire new one. In this rapid changing environment banks are compelled to encounter various types of risks like credit risk, liquidity risk, market risk, interest rate risk etc. while carrying out their business operations. As the risks are correlated, exposure to one risk may invite another risk. Thus, handling of such risks in a proactive, efficient and integrated manner is very important for maintaining sound financial health. Failure of managing such risks efficiently will adversely affect the financial stability of a bank which in turn leads to probability of insolvency. The recent financial crisis has refocused the importance of measuring bank insolvency risk (Strobel, 2011).

In this backdrop, an attempt has been made here to measure the insolvency risk of selected Indian commercial banks during the period 2000-01 to 2009-10. The specific objectives of the study are:

1. To measure the insolvency risk of Indian public sector banks, private sector banks and foreign banks operating in India
2. To identify the bank specific key factors influencing the insolvency risk of Indian commercial banks

The rest of the paper is organized as follows:

Section II presents the review of existing literature relating to this topic. The database and methodology adopted in this study is described in section III. While section IV is devoted for analyzing and interpreting the empirical observations, concluding remarks are presented in section V.

LITERATURE REVIEW

A popular measure of a bank's insolvency is the Z statistic. The Z statistic as a measure of insolvency risk, suggested by Hannan and Hanweck (1988) and subsequently used by Liang & Savage (1990), Eisenbeis & Kwast (1991), Sinvey & Nash (1993), Naimy (2005), Rahman *et al*. (2009) and Sinha *et al*. (2010), takes into consideration banks' return on assets, volatility of return and the capital base. Inspite of its simplicity, it is widely used as it can be calculated using only accounting information and thus applicable for both listed and unlisted financial institutions (Strobel, 2011).

Bichsel and Blum (2004) conducted a study on the relationship between changes in risk and changes in leverage for a panel of Swiss banks. They used market data for risk and capital over the period between 1990 and 2002. The study concluded that there was a positive correlation between changes in capital and changes in risk i.e. association between higher levels of capital and higher level of risks. But despite the positive correlation, they didn't find a significant relationship between the default probability and the capital ratio.

A study was conducted by Naimy (2005) on overall performance of the Lebanese Banks in terms of profitability and risks for the period 1993 to 2002. He used Du Pont equation to measure profitability and risk index suggested by Hannam and Hanweck (1988) to measure risk of Lebanese commercial banks.

Rahman, Ibranim and Meera (2009) conducted a study to investigate the impact of lending structure on the insolvency risk exposure. For this a comparative analysis between the insolvency risk behavior between the Islamic and conventional banks is made. The findings of this study was that the real estate lending is positively related to the conventional banks' risk, but inversely related to Islamic banks' risk exposure.

A study was conducted by Camara, Lepetit and Tarazi (2010) to investigate the impact of changes in Capital of European banks on their risk-taking behavior from 1992 to 2006. For this study, capital position was categorized into highly capitalized, adequately capitalized, undercapitalized, moderately undercapitalized and strongly undercapitalized. Equity, subordinated debt and hybrid capital are components of regulatory capital. They found that for highly and adequately capitalized banks as well as for strongly undercapitalized banks, an increase in equity or in subordinated debt was associated with an increase in risk. Moderately undercapitalized banks tend to invest in less risky assets when they improve their capital standards by issuing equity and there is a positive association between subordinated debt or hybrid capital and risk.

Yap, Ong, Chan & Ang (2010) identified five key factors – liquidity and interest rate factor, domestic market factor, international market factor, business operation and credit factor, that significantly contributed to banks' risk exposure in Malaysia.

In the Indian context, Sinha, Taneja and Gothi (2010) conducted a study on evaluation of riskiness of Indian Banks and Probability of Book Value Insolvency. To analyze they used a risk index known as Z score developed by Hannan and Hanweck (1988) which was successfully used to measure insolvency risk of Global Trust Bank. For this study, they randomly took sample of 15 Indian banks (Public and Private Sector) to determine the riskiness / probability of book value insolvency over the years (2006-2008) and compare relatively between public and private sector banks in India. Results obtained in the study showed that the probability of book value insolvency of Indian banks had reduced over years and the probability of book value insolvency was lower in case of public sector banks in comparison to private sector banks.

Studies relating to the determinants of bank risk exposure, specifically insolvency risk, are very limited (Rahman, *et al.*, 2009). Madura, *et al.(1994)* and Ahmad & Ariff (2004) examined the factors influencing the financial institutions' risk exposure. Rahman et al. identified key factors influencing the insolvency risk of islamic and conventional banks and observed significant variation of factors affecting risk exposure of conventional and Islamic banking sector.

It is evident from the above that measurement of insolvency risk of large number of Indian commercial banks is very limited. So a study that compares the insolvency risk of different Indian commercial bank groups may be very useful to get an idea about the financial health of Indian banks.

DATA & METHODOLOGY

The present study is based on a sample of 56 Indian commercial banks, of which 26 from public sector banks (PSB), 18 from private sector banks (PrSB) and 12 from foreign banks (FB) operating in India. The relevant secondary data have been collected from 'Capitaline Plus' corporate data base, a reliable data source of Capital Market Publishers India Pvt. Ltd., for a period of 10 years from 2000-01 to 2009-10. For more details measurement of insolvency risk, public sector banks have been segregated into nationalized banks (19 banks) and SBI group (7 banks). On the other hand, private sector banks have been divided into new private sector banks (8 banks) and old private sector banks (10 banks). IDBI Bank has not been considered here for its change in character from new private sector bank to other public sector bank during the period of study. The sample size consists of all the public sector banks except one whose data were not available over the study period. Similarly, some private sector banks and foreign banks operating in India have been excluded due to non-availability of relevant data throughout the period of study. But the sample size is sufficient enough in terms of total business to represent the bank groups during the study period.

Z statistic, suggested by Hannan and Hanweck (1988) widely used by researchers, has been employed to measure the insolvency risk. Z is defined as:

$$Z = \frac{ROA + (Capital\ to\ Asset\ Ratio)}{S.D.\ of\ ROA}$$

Z statistic has been calculated for each bank during the study period considering average value of ROA and capital to asset ratio (CAR). For calculating Z statistic for each bank group during the study period, average ROA and average CAR of each bank have been considered. Similarly, year-wise Z statistic for each bank group has been computed. Higher values of Z indicate lower insolvency risk as high values of Z correspond with higher capital base and lower variability of return.

Probability of book value insolvency (P) has been computed by applying the following formula:

$$P = 1/2Z^2$$

Probability of insolvency is inversely associated with Z statistic. The higher the Z statistic lower is the probability of insolvency and vice versa.

In this tough competitive environment banks are facing various types of risk. Inefficient management of different risks leads to risk of insolvency. Various internal and external factors affect the insolvency risk of a bank. But in the present study only internal factors are taken into consideration. Z statistic is used to measure the insolvency risk and following factors are considered as the determinants of insolvency risk:

Capitalization (CAP): In India, RBI advised all banks to maintain adequate capital base for long term stability. High capitalization is safe from the view point of a bank and consequently lower is the risk of insolvency. Capitalization is used as the determinant of insolvency risk and it is calculated as the ratio of equity to total assets (percent). As high Z statistic indicates lower insolvency risk, a positive association between Z statistic and capitalization is expected.

Credit Risk (CR): Credit risk mainly arises from the non-recovery of loans and advances and hence the ratio of net non-performing loans to net loans and advances is widely used to measure the credit risk. Ratio of total loans to total assets and ratio of provision for loans to total assets are also used by researchers, but in this study the ratio of net non-performing loans to net loans is used as a measure of credit risk. Higher the proportion of non-performing loans in net loans, higher is the credit risk and consequently insolvency risk will also be high. So, theoretically an inverse association between credit risk and Z statistic is expected.

Size (LnTA): Size of a bank may be another determinant of insolvency risk. Generally, higher the size of a bank higher is the risk taking ability [Saunders *et al*. (1990) and Hassan (1993)] and lower is the insolvency risk. Size is measured by the natural log of total assets (LnTA).

Liquidity (LQ): In general, high liquid ratio can be interpreted as having a positive influence on stability. But excess investment on liquid assets may adversely affect the profitability. So, a trade of between liquidity and profitability is desirable. Liquidity is measured by the ratio of liquid assets to total assets. Cash and bank balance, money at call & short notice and short term investment are included in the definition of liquid assets following the classical concept of liquid assets in the bank management literature (Alger and Alger, 1999).

Efficiency (EF): Net interest margin (difference between interest earned interest expended) as a percentage of total assets is often used a proxy for the efficiency of banks and the same is used here as a determinant of insolvency risk as increase in efficiency of the management reduces the bank risk exposure (Angbazo, 1997).

In order to examine the impact of above factors on the insolvency risk of selected bank groups during the study period flowing OLS model is used:

$$Z_i = \alpha + \beta_1\ CAP_i + \beta_2\ CR_i + \beta_3\ LnTA_i + \beta_4\ LQ_i + \beta_5\ EF_i + \varepsilon$$

In order to measure the dependability of the regression results, Durbin – Watson test method is used. According to this method, a rule of thumb is that for a spurious regression R^2 would be greater than the calculated D-W statistic. Another rule of thumb is that the observed D-W statistic should be about 2 for the dependability of the regression result and the absence of first order serial correlation (Gujarati, 1995, p.423).

In order to test multicollinearity, Variance Inflation Factor (VIF) method is used. As a general rule of thumb, if the VIF of a variable exceeds 10 or TOL is equal to zero, that variable is said to be highly collinear with other regressor(s). If the VIF is below 10, multicollinearity will not cause a serious problem.

EMPIRICAL OBSERVATIONS

INSOLVENCY RISK AND PROBABILITY OF BOOK VALUE INSOLVENCY

Table 1 shows the Z statistic and probability of book value insolvency (P) of public sector banks, private sector banks and foreign banks during the period 2000-01 and 2009-10. It is evident from the table that average ROA of both public sector banks (0.00858) and private sector banks (0.00862) is almost equal, but it is

considerably higher in case of foreign banks (0.01257). In case of CAR, significant higher value is observed for foreign banks (0.17125) as compared to private sector banks (0.07296) and public sector banks (0.04452). But Z statistic of public sector banks (28.99985) is much greater than that of other two bank groups – private sector banks (15.16687) and foreign banks (15.28193). The reason is due to the difference in the variability of ROA as measured by the standard deviation. While S.D of ROA is only 0.00187 in case of public sector banks, it is very high of 0.01203 for foreign banks. It is also higher in case of private sector banks (0.00538) as compared to public sector banks. This significant difference in the variability of ROA leads to lower Z statistic despite higher ROA and CAR of foreign banks and private sector banks. Thus, the observed Z statistics indicate that the public sector banks are safer as in comparison to private sector and foreign banks. The probability of book value insolvency as shown in the table also depicts the same. It can be mentioned here that the findings of the present study support the findings of Sinha, Taneja and Gothi (2010).

Among the public sector banks, average performance of state bank group is better than the nationalized banks in terms of maintaining sound financial health. While Z statistic for state bank group is found to be 34.25338, it is 23.12279 for nationalized banks during the study period. By maintaining almost same capital base, SBG could improve its Z statistic by increasing μ (ROA) and lowering variability of ROA. Among the private sector banks, none of the bank groups performed well. Though the probability of book value insolvency is lower for new private sector banks than the old private sector banks, but it is considerably higher than the state bank group. The reason is same. Both new and old private sector banks could not maintain a steady return on assets over the years.

In this context a study conducted by Jordan (1998) may be considered. He found that a failed bank had an average individual Z score of 21.22 and for survivor it was 37.62. In case of bank groups, it was 8.71 for failed banks and 13.33 for non-failed bank. Though the socio-economic conditions, customer expectations, use of technology etc. are not same in case of India and hence the Z score may be different to classify a bank / bank group as failed or non-failed. But for analytical purpose if use the findings of Jordon (1998) as yardstick, then it is evident that none of the bank groups operating in India may be considered as failed bank group.

TABLE 1: Z STATISTIC & PROBABILITY OF BOOK VALUE INSOLVENCY FOR INDIAN BANKS DURING 2000-01 TO 2009-10

Banks	μ(ROA)	μ(CAR)	σ(ROA)	Z stat.	P
Public Sector Banks (PSB)	0.00858	0.04452	0.00187	28.99985	0.00059
Private Sector Banks (PrSB)	0.00862	0.07296	0.00538	15.16687	0.00217
Foreign Banks (FB_I)	0.01257	0.17125	0.01203	15.28193	0.00214
Nationalized Banks (NB)	0.00826	0.04457	0.00228	23.12279	0.00094
State Bank Group(SBG)	0.00943	0.04809	0.00168	34.25338	0.00043
Old Pvt. Sector Banks(OPrSB)	0.00807	0.06937	0.00555	13.95387	0.00257
New Pvt. Sector Banks (NPrSB)	0.00940	0.08613	0.00554	17.23332	0.00168

A look into the top five banks (Table 2) in respect of Z score out of the selected 56 banks for this study reveals that HDFC Bank occupied first position with a very high Z score of 162.58210. Out of the top five banks, three banks are private sector banks, more specifically new generation private sector banks. On the other hand, State Bank of India and Syndicate Bank are public sector banks. From the earlier discussion, it is evident that average Z score of new private sector banks was much lower than that of SBG or NB. This indicates that some of the new private sector banks performed extremely well in the matter of managing sound financial health while others could not. This is also justified from the Table 3 that shows the list of five banks having lowest Z score. Out of five banks, Z statistic of Centurion Bank of Punjab and Development Credit Bank is very low, 3.33793 and 3.84337 respectively. Among the other three banks, Oman International Bank, foreign bank operating in India, obtained the lowest Z score (0.76924). Performance of Dena Bank and Indian Bank, public sector banks in India, was very poor in the matter of financial health.

It is also evident from the table 2 that very high Z score of HDFC Bank is due to lower variability of return [σ (ROA)]. Average ROA of City Union Bank (0.01355) is greater than that of HDFC Bank (0.01253), but the S.D. of ROA of the former bank is considerably higher than the later. Similarly, State Bank of India and Syndicate Bank occupied 3rd and 4th position respectively by maintaining a steady return on assets over the years. Because the average ROA and average CAR of the banks are lower than other three top banks. Table 3 also depicts the same. Out of five banks having lowest Z score, three have negative average ROA and the variability of ROA is also very high.

TABLE 2: LIST OF FIVE BANKS HAVING HIGHEST Z STATISTIC DURING 2000-01 TO 2009-10 (DESCENDING ORDER)

Sl. No	Bank	μ(ROA)	μ(CAR)	σ(ROA)	Z stat.
1	HDFC Bank Ltd.	0.01253	0.07725	0.00055	162.58210
2	City Union Bank Ltd.	0.01355	0.06812	0.00164	49.87134
3	State Bank of India	0.00831	0.05356	0.00136	45.38774
4	Syndicate Bank	0.00807	0.03759	0.00114	39.93682
5	AXIS Bank Ltd.	0.01022	0.05702	0.00181	37.23054

TABLE 3: LIST OF FIVE BANKS HAVING LOWEST Z STATISTIC (ASCENDING ORDER)

Sl. No	Bank	μ(ROA)	μ(CAR)	σ(ROA)	Z stat.
1	Oman International Bank	-0.01732	0.04962	0.04199	0.76924
2	Centurion Bank of Punjab Ltd.	-0.00145	0.04998	0.01454	3.33793
3	Development Credit Bank Ltd.	-0.00521	0.06356	0.01518	3.84337
4	Dena Bank	0.00404	0.03459	0.00748	5.16296
5	Indian Bank	0.00855	0.03711	0.00845	5.40434

Year-wise Z statistic and probability of book value insolvency for Indian banks as shown in Table 4 reveals that gradually Indian banks are moving towards stable financial condition. In case of selected public sector banks Z statistic increased from 6.18527 in 2000-01 to 22.33462 in 2009-10. Indeed from 2005-06 onwards the probability of book value insolvency declined over the periods. In case of foreign banks, it increased from a very low of 4.56213 to 17.56258 during the study period. In case of private sector banks, though increased from 10.23337 in 2000-01 to 13.40755 in 2009-10, shows a fluctuating trend over the years. For instance, highest Z statistic is found in the year 2007-08 (25.95713), but in the immediately preceding year it came down to 13.30720. Overall a positive trend is found for all the bank groups in recent years that indicate a good sign for Indian commercial banks.

TABLE 4: YEAR-WISE Z STATISTIC AND PROBABILITY OF BOOK VALUE INSOLVENCY FOR INDIAN BANKS

Year (End march)	Public Sector Banks		Private Sector Banks		Foreign Banks	
	Z stat.	P	Z stat.	P	Z stat.	P
2001	06.18527	0.01307	10.23337	0.00477	4.56213	0.02402
2002	13.13779	0.00289	10.49397	0.00454	9.44213	0.00561
2003	13.61288	0.00269	17.29352	0.00167	9.58754	0.00544
2004	16.88679	0.00175	12.16516	0.00338	10.71454	0.00436
2005	14.04984	0.00253	10.25357	0.00476	10.56705	0.00448
2006	17.69293	0.00159	10.89587	0.00421	13.29051	0.00283
2007	20.95470	0.00114	12.25659	0.00333	11.24521	0.00395
2008	21.08257	0.00112	25.95713	0.00074	14.25421	0.00246
2009	21.09367	0.00112	13.30720	0.00282	16.59358	0.00182
2010	22.33462	0.00100	13.40755	0.00278	17.56258	0.00162

FACTORS INFLUENCING INSOLVENCY RISK

In order to examine the impact of various internal factors on the insolvency risk, five variables (CAP, LnTA, CR, LQ and EF) have been identified initially. Using these five variables as the determinants of insolvency risk it has been observed that one variable, liquidity (LQ), is highly correlated with other variables. Moreover, insignificant association is found with very high standard error for all the runs of the regression model. To reduce the multicollinearity problem and to obtain more acceptable results, LQ is excluded from the regression model used in this study and the results are reported in table 5, 6 and 7 respectively for public sector banks, private sector banks and foreign banks. Insolvency risk is measured by Z statistic. As Z statistic is a 'safety index', a high Z statistic indicates low insolvency risk exposure. Thus, the association between independent variables and bank insolvency risk exposure is reversed from the sign the tables.

It is evident from the results that size (LnTA) is significantly associated with insolvency risk for all the bank groups. LnTA is positively associated with Z statistic and thus, it is inversely associated with insolvency risk. This implies that the higher the size of a bank lower is the risk of insolvency and vice versa. Capitalization is also negatively associated with insolvency risk for all cases. While significant association is found for both public sector banks and foreign banks, the result is not statistically significant in case of private sector banks. The negative association between capitalization and insolvency risk implies that a bank can reduce its risk of insolvency by maintaining adequate capital base. In India, as per RBI norms, minimum CAR is 9%. From the analysis of the data it has been observed that all types of commercial banks considered for this study have CAR above than the minimum CAR prescribed by the RBI throughout the study period. Very high CAR is maintained by the foreign banks operating in India over the years. This is a good sign for the Indian banks for strengthening the financial health.

One important reason for financial sector reforms in India was to reduce the overdue on loans and advances. For this 'prudential norms' were introduced for all the banks operating in India. Since high level of non-performing loans adversely affect the liquidity, profitability and solvency position of a bank, management of NPAs has got paramount importance for all after the financial sector reforms. It is evident from the result that credit risk, measured by the percentage of net non-performing loans to net advances, is positively associated with insolvency risk for both private sector and private sector banks. But in case of foreign banks operating in India, significant negative association between credit risk and risk of insolvency is found. The reason is that the quantum of net non-performing loans for most of the foreign banks was found to be either nil or very negligible over the study period. But in case of public sector banks and private sector banks the quantum of non-performing loans was not negligible, though significant improvement is noticed. Another explanatory variable, efficiency (measured by difference between interest earned and interest expended) is negatively associated with insolvency risk in case of public sector banks (significant association) and private sector banks. But for foreign banks significant positive association is found. Interest margin in case of foreign banks is found to be low as compared to other two bank groups included in this study.

The observed F statistics are highly significant and R^2s are also quite satisfactory for all runs of the regression model. The observed R^2 and F statistics may, thus, be sufficient to speak in favour of the goodness of the regression model to fit into the present task of identifying the factors influencing the insolvency risk. The observed D-W statistics also strongly advocate in favour of the dependability of the results. Multicollinearity problem was measured by Variance Inflation Factor (VIF), which is the inverse of tolerance value. Low degree of multicollienearity is reflected in higher tolerance value and lower VIF value. As a general rule of thumb, if VIF value is more than ten, there is a multicollienearity problem (Hair, Money, and Samouel, 2007). Based on the value of VIF in Tables, there is very low multicolliearity among the variables.

TABLE 5: RESULTS OF DETERMINANTS OF INSOLVENCY RISK: PUBLIC SECTOR BANKS

Variable	Coefficient	t-statistic	R^2	F-statistic	D-W stat.	VIF
CAP	4.807	3.426*	0.618	10.701*	1.943	1.430
LnTA	4.084	2.054**				1.212
CR	-1.048	-1.900***				1.237
EF	0.489	0.204				1.023
Constant	-44.972	-1.772***				

*, **, *** imply significant at 1%, 5% and 10% respectively

TABLE 6: RESULTS OF DETERMINANTS OF INSOLVENCY RISK: PRIVATE SECTOR BANKS

Variable	Coefficient	t-statistic	R^2	F-statistic	D-W stat.	VIF
CAP	2.870	1.036	0.797	11.792*	2.156	2.035
LnTA	15.316	4.326*				1.425
CR	-4.034	-0.895				1.930
EF	9.915	2.486**				1.432
Constant	-138.232	-2.876**				

*, **, *** imply significant at 1%, 5% and 10% respectively

TABLE 7: RESULTS OF DETERMINANTS OF INSOLVENCY RISK: FOREIGN BANKS

Variable	Coefficient	t-statistic	R^2	F-statistic	D-W stat.	VIF
CAP	0.865	3.502*	0.854	10.240*	1.915	5.361
LnTA	7.356	4.618*				5.415
CR	0.245	1.862***				3.957
EF	-0.077	-3.380**				1.963
Constant	-60.826	-3.333*				

*, **, *** imply significant at 1%, 5% and 10% respectively

CONCLUSION

An attempt is made in the present study to measure the insolvency risk of selected Indian commercial banks during 2000-01 to 2009-10 and also to identify key factors influencing the insolvency risk. For this 56 commercial banks from public sector, private sector and foreign bank operating in India have been selected. Z statistic has been used to measure the insolvency risk. It is observed from the analysis of insolvency risk that public sector banks are less risky as compared to other two bank groups. Among the public sector banks, average performance of state bank group is found better than the nationalized banks in terms of maintaining sound financial health. But an upward trend of Z statistic is found for all the bank groups over the years. If the private sector banks and foreign banks can reduce the variability of ROA, their performance in terms of maintaining sound financial health can be improved significantly. Regarding the factors influencing insolvency risk, size is found to be the most significant influential factor among the variables chosen in this study that negatively associated with insolvency risk for all bank groups. Negative association is also observed between capitalization and insolvency risk for all cases. But in case of credit risk contradictory result is found for foreign banks. However, it may be concluded that Indian banks are gradually improving their financial health. If the banks can reduce the non-performing loans to a very negligible level and can maintain a steady ROA, insolvency risk will not be a matter of serious concern for the selected banks.

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SOCIAL RESPONSIBILITY OF ENTERPRISES IN A GLOBALISED INDIAN ECONOMY - AN ANALYSIS

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ABSTRACT

The paper discusses briefly the scenario that necessitated the evolution of Competition Law in India and the lacunas in the Monopolies and Restrictive Trade Practices (MRTP) Act. Further, the paper examines the various modalities available in the Competition Act for restricting or prohibiting anti-competitive agreements entered into between enterprises. Finally, the drawbacks existing in the enactment are brought to light followed by suggestions to plug the same.

KEYWORDS

Enterprises, Social Responsibility, India.

INTRODUCTION

In this paper the term 'Enterprise' is dealt with to mean 'A company organized for commercial purposes'[10]

In the present day modern society, people predominantly prefer to do business in the form enterprises for the varied advantages such as legal recognition of independent corporate existence, perpetual succession, limited liability, easy transferability of securities, public monetary contribution and creation of floating charge on debenture issues, which are benefits uniquely available only to business enterprises in the corporate sector.

Since 1991 the Government of India has adopted a liberalized economic policy with the aim of increasing the foreign exchange flow into India and towards this end it encouraged Multi National companies (MNC) & foreign institutional investment in India. This changed scenario created by espousing of Liberalisation, Privatisation & Globalisation constrained Indian companies to, all of a sudden, compete with huge enterprises and they weren't on the same footing with the latter corporate, in terms of exposure in the global arena, availability of funds, man power, experience, among other factors. Further this necessitated India to carry out its obligations under World Trade Organization (WTO), General Agreement on Trade & Services (GATS), Trade Related Aspects of Intellectual Property Rights (TRIPS) etc.

The MRTP Act, 1969 was framed primarily to prevent concentration of economic power as amongst companies incorporated & transacting business in India. It was not suited to deal with the aspects of maintain & promoting competition in the commercial sector, which would act as a safeguard in protecting Indian companies from being overridden by MNCs. Further some of the provisions in the said Act were deleted since they posed an obstruction to encouraging private investment from foreign territories as they required prior approval of Central Government in varies matters regarding foreign investment which would significantly decelerate entry of foreign enterprises into India amounting to discouragement. Thus, MRTP Act could not meet the situation created by the incursion of MNCs into the Indian market, in maintaining a balanced operational field for both Indian & foreign enterprises.

Global experience indicates that private monopolies can be detrimental to national economy. Free & healthy competition is mandatory for achieving a vigorous economy.

To perform this mission, the Central Government appointed, in 1999 a Committee (The Raghavan Committee) to survey the Indian economic scene & suggest suitable recommendations for formulating a competition policy. The Committee suggested a new legislation in this regard, for the following reasons.

- The term 'Competition' has been used sparsely in the MRTP Act (only in 2 places);
- Definitions of important terms relating to competition weren't stated in the MRTP Act-dominance, cartel, collusion, boycott, refusal to deal, bid rigging, predatory pricing etc. Without definitions in the Act, it would not be possible to effectively prove such behaviour & penalize the perpetrators. This is likely to; in turn lead to contradictory judicial interpretations.
- The term 'Cartel' which is a major tool used to reduce & finally eliminate competition, not mentioned in the MRTP Act.
- Existing Law inadequate to deal with implementation of the WTO agreements.
- No provisions to deal with merger of enterprises as found in the Competition Laws of other countries. at par with other modern competition Laws.
- Similar provisions relating to unfair trade practices found in both Consumer Protection Act, 1986 & MRTP Act, 1969.

Thus, the Competition Act, was enacted in the year 2002.

On the one hand there needed to be created a balanced atmosphere wherein all companies dealing with identical goods/services will have a fair opportunity to compete in the market. On the other hand, it is mandatory to safeguard consumers' benefit and ensure that they are not adversely affected by the phenomenal growth of the corporate sector due to influx of MNCs resulting in mammoth companies entering into agreements to stifle and ultimately eliminate (local) competition and ultimately monopolizing the market to the detriment of the consumers. Further, unrestricted private monopolies may amount to impairment of the National economy.

The principal objective is to maintain and protect the competitive process since competition promotes efficiency including dynamic efficiency, increases consumer welfare and contributes to the progress of the economy as a whole.[11]

The paper endeavours to examine, with the aid of relevant case Law, the possible adverse effects anti-competitive agreements to manifest the ever growing tendency of enterprises to control and gradually monopolise the relevant markets, how cartels are formed to achieve this and statutory provisions incorporated in the Competition Act in India, to curb and prevent enforcement of anti-competitive agreements and in so doing create a level balanced field of operation for all competing enterprises.

CARTELS

Where two or more enterprises enter into an agreement with the aim of reducing or eliminating competition in the relevant market, they are usually termed as cartels. Section 2(c) of the Competition Act, 2002 as amended by Competition (Amendment) Act, 2007 is very expansive in including any association of producers, distributors, sellers, traders, service providers who, by agreement amongst themselves, limit, control or attempt to control, production, distribution, sale, price of, trade in goods or provision of services.

Cartel is a presumed to be an anti-competitive agreement.

In the following case Laws it has been held that the association or agreement formed results in a cartel.

[10] http://dictionary.reference.com/browse/enterprise (accessed on 14.3.2011)

[11] Competiton Law Today Concepts, Issues & The Law In Practice -edited by Vinod Dhall-pg.3. (accessed on 14.3.2011)

Madras Jewellers & Diamond Merchants' Association, Re –Trade Association asking its members not to sell below the rates announced by it, with a threat of expulsion in the event of non-compliance, was held to be a cartel.[12]

In DGIR v. Modi Alkali[13], it has been observed that the three essential ingredients of cartel are-(i)Parity of prices; (ii)Ag by way of concerted action suggesting conspiracy; (iii)To gain monopoly, restrict or eliminate competition'.

Cartelisation imposes unjustified cost on consumers. Price fixing is illegal per se, therefore, further enquiry on the issue of intent or the anti-competition effect is not required-as held in *Sumitomo Corpn In, Re[14].*

However, not always will an agreement between enterprises be struck down as anti-competitive in nature. For instance, in *Haridas Exports v. All India Float Glass Mfgrs Association*, it was held that protecting inefficient industry is not 'public interest' & in such cases 'cartel' is permissible. Also, by way of Obiter Dicta, it was stated that the MRTP Commission cannot pass an injunction for imports at predatory prices, if the cartel is selling goods to India at lower prices & still making profit, it will not be in the interest of general body of consumers in India to prevent import of such goods. The era of protectionalism is now coming to an end.[15]

HORIZONTAL & VERTICAL RESTRAINTS

Anti-competitive agreements maybe broadly classified into two groups, viz., horizontal restraints which are cartels & vertical restraints.

Vertical Restraints: Any agreement amongst enterprises/persons-at different stages or levels of-the production chain in diff markets-in respect of production, supply, distribution, storage, sale, price of, trade in-goods/services-shall be an agreement in contravention of S.3(1)-If such agreement causes or is likely to cause an appreciable adverse effect on competition in India (i.e., by applying the rule of reason)-S.3(4).

Thus, where the parties to the agreement are in different stages or levels of the production chain, this practice is called a vertical restraint.

In *Wisconsin Electric Co v. Dumore Co (Ohio)[16],* it has been observed that, 'The equitable Doctrine of 'Unfair Competition' is not confined to cases of actual market competition between similar products of different parties, but extends to all cases in which 1 party fraudulently seeks to sell his goods as those of another.'

PRO-COMPETITIVE BENEFITS OF VERTICAL RESTRAINTS

Occasionally, a vertical restraint maybe allowed when proved to be pro-competitive sans causing adversely affective the competitive process. In fact, the restraints may be necessary in certain scenarios, to ensure that the post-sales support to the retailers provided by the manufacturers.

PRESUMED ANTI-COMPETITIVENESS

Any agreement which has any of the under-mentioned effect shall be presumed to be anti-competitive practice.

a) Directly/indirectly determines purchase/sale prices;
b) Limits/controls-production/supply/markets/tech development /investment or provision of services;
c) Shares the market or sources of production/services by way of-allocation of geographical area of market/types of goods/ services/# of customers in the market/any other similar way;
d) Directly/indirectly results in bid rigging or collusive bidding

The onus of proving that the agreement is not anti-competitive, i.e., will not have any appreciable adverse effect on competition in India, falls on the defendant.

But, where a Joint-venture agreements would increase efficiency in production, supply, distribution, storage, acquisition or control of goods/services, it will not be labelled as anti-competitive as it would not only be of advantage to enterprises as it will lead to systematic operations but also will benefit consumers.

RULE OF REASON & PER SE RULE

The two rules that are applied in ascertaining whether an agreement between enterprises is anti-competitive resulting in suppression of competition are rule of reason and per se rule. In the former the facts and circumstances of each case is analyzed in deciding the effect of the agreement, if permitted to be performed.

The rule of reason-explained by U.S. Supreme Court in *Board Of Trade Of City Of Chicago v. U.S.[17]* –"Every agreement concerning trade, every regulation of trade, restrains. To bind, to restrain, is of their very essence. The true test of legality is whether the restraint imposed is such as merely regulates & perhaps thereby promotes competition or whether it is such as may suppress or even destroy competition."[18]

This principle has been accepted by the SC of India also and applied in *Tata Engineering (TELCO) v. Registrar Of Restrictive Trade Agreement[19]*.

The per se rule is applied literally. In U.S. in the early periods in the administration of Sherman Act, 1980-there was a blanket ban of all contracts if in the form of Trust, in restraint of trade/commerce. The reasoning being they were regarded as 'per se' bad.

Therefore it was regarded as unnecessary, to determine whether the agreement or clauses there in, limit or restrict competition, because it has been in the past, well established that the nature of such agreements was to cause anti-competitive effects & can be assumed to be prima facie, anti-competitive, sans going into the intricacies of the matter.

The concept of 'Per se rule' has been explained thus in *Northern Pac. R Co v. U.S.[20]* –"There are certain agreements or practices which because of their pernicious effect on competition & lack of any redeeming virtue are conclusively presumed to be unreasonable & therefore illegal without elaborate inquiry as to the precise harm they have caused or the business excuse for their use."

In India-these 2 rules are applied dichotomously in the Competition Act, 2002:

a) Section 3(3)(a) to (d) – Following clauses in ags presumed to have an appreciable adverse effect on competition-

- (a)Directly or indirectly determines purchase/sale prices;
- (b)Limits or controls-production, supply, markets, technological development, investment and/or services;
- (c)Allocation of geographical area of market/type of goods/services or number of customers in the market or any similar way;
- (d)Directly or indirectly results in big-rigging or collusive bidding.

b) Section 3(4)(a) to (e) – will be examined by applying 'Rule of Reason'-in determining whether they cause or likely to cause an appreciable adverse effect on competition in India.

- (a)Tie-in-ag;
- (b)Exclusive supply ag;
- (c)Exclusive distribution ag;
- (d)Refusal to deal;

[12] (1994) 2 CTJ 198 (MRTPC)
[13] (2002) 51 CLA 12 (MRTPC)
[14] (2001)42 CLA 12 (MRTPC)
[15] AIR 2002 SC 2728
[16] 35 F.2d 555 (1929)
[17] 246 US 231 (1918)
[18] 'Competition Law In India-Policy, Issues and Developments' by T. Ramappa (2nd Edition) pg.75.
[19] (1997) 47 Comp. Cas. 520 (SC)
[20] 356 US 1

- (e)Resale price maintenance.

STATUTORY PROHIBITIONS AS PER COMPETITION ACT, 2002

Apart from presumptions of Law, the inclusion of certain clauses in agreements as between enterprises are likely to adversely affect competition. Some such instances are discussed hereunder.

RESTRICTIONS ON OUTPUT/SUPPLY: EXCLUSIVE DISTRIBUTION AGREEMENT: [S.3(4)-Expln (c)]:

Agreements that limit or control-production, supply, markets, technical development, investment or provision of services is a presumed anti-competitive agreement.

As stated in the MRTP Act it means, agreements which have the effect of restricting or with holding or limiting-output, supply of goods or allocating any market or area/s for the disposal of goods.

DGIR (Director General Of Investigation & Registration) v. Bayer (India) Ltd[21], a condition in agreement with distributor that he will not make supplies to chemists, Doctors & Government or private institutions even though he accepts the order. That the seller will sell directly to these customers without any commission to the distributor was held to be an anti-competitive agreement.

In DGIR v. Titan Industries[22], a clause in an agreement of Titan Industries with a franchisee that the latter will not deal in products of a similar nature for a period of 3 years within radius of 5 Kms from showroom, from the date of determination of agreement, was held to be a restrictive trade practice.

However, in DGIR v. Rajshree Cement[23], a clause that the dealer will concentrate on a particular area was permitted as permissible if there is no prohibition on him from effecting sales in other areas.

TIE-IN-SALE: (OR-FULL LINE FORCING): [S.3(4)-Expln (a)]:

Includes any agreement forcing a purchaser of goods to purchase some other goods or service along with the goods he wishes to purchase, thereby he is constrained to incur unnecessary expenditure. Also, this type of tie-in-sale results in reduced competition in the supply of the tied product.

The product or service required by the buyer is called tying product.

The product or service that is forced on the buyer is called the tied product/service.

In Re, R.P. Electronics[24] –Requiring a customer to sign up for a service contract while buying goods, in *Chanakya & Siddharta Gas Co, In Re*[25] –Making it mandatory for a customer to buy gas stove while giving gas connection, in *DGIR v. SBI* –The Bank asking person to open a fixed deposit with Bank while allotting him a locker, in *Amar Jeevan Public School, In Re*[26] –School making it compulsory to buy uniforms & books only from its own shop, in *United Radio & Television Co, In Re*[27] –Requiring a customer who is purchased a Television set to also buy voltage stabiliser from the seller-were all held to be anti-competitive agreements involving an element of tie-in.

However, in *TCI, In Re*[28] –it was stated that assertion by car manufacturer that, during the warranty period, air-conditioner can be fixed in the car only by authorised dealer to ensure that improper air-conditioner doesn't affect performance of car during warranty; Manufacturer stipulating that distributors shall maintain a minimum quantity of spare parts for machinery & equipment supplied by them in order to ensure prompt service; Carrier of goods charging an additional sum of money for goods to be transported at the carriers' risk, there being no compulsion on customers as they were free to send goods either at owner's risk or at carrier's risk. Hence, charging extra amount by transporter for taking goods at his risk is not tie-in sales.

EXCLUSIVE SUPPLY AGREEMENT: [S.3(4)-Expln (b)]:

Consists of an agreement restricting in any manner the purchaser in the course of his trade from acquiring or otherwise dealing in any goods other than those of the seller or any other person.

RESALE PRICE MAINTENANCE [S.3(4)-Expln (e)]:

Includes any ag to-sell goods on condition that the prices to be charged on the resale by the purchaser shall be the prices stipulated by the seller unless it is clearly stated that prices lower than those prices may be charged.

For instance in *Calcutta Goods Transport Association v. Truck Operators Union*[29] –Association of lorry owners fixing freight rates & not allowing members of association to charge price lower than that fixed by association is RTP.

It was observed in DGIR v. Infar (India) Ltd[30] that if the price mentioned is 'Maximum Retail Price' then it is inherent that the retailers are at liberty to sell the goods at prices below the MRP & hence unnecessary to expressly state this.

As regards Newspapers being the subject matter of the agreement they are exempt from this provision because it is crucial that they should reach speedily the public & permitting retailer to bargain the price would cause a delay, as pointed out in *Registrar v. Bennett Coleman & Co Ltd*.[31]

Nonetheless, if a manufacturer sells goods through his own retail outlets & sets the prices to be charged for his products in the showrooms, it is called direct price maintenance & this is allowed. This is adopted by huge enterprises such as Bata, Gwalior etc.

REFUSAL TO DEAL: [S.3(4)Expln (d)]:

Includes-any agreement which restricts/likely to restrict-by any method-the persons/classes of persons to whom goods are sold or from whom goods are bought.

AGREEMENT NOT ANTI-COMPETITIVE: [S.3(5)(i)]:

The under listed Enactments empower entities to impose restrictive covenants in any agreement they enter into with other enterprises, in order to protect their rights which are conferred upon them by the statutory provisions contained in the various Acts, by declaring that they are not anti-competitive in nature, thereby preventing any infringement of the same. The Legislations which armour the enterprises to include restrictive or prohibitive stipulations are

- ✓ The Copyright Act, 1957.
- ✓ The Patents Act, 1970.
- ✓ The Trade & Merchandise Marks Act, 1958 OR The Trade Marks Act, 1999.
- ✓ The Geographical Indications Of Goods (Registration & Protection) Act, 1999.
- ✓ The Designs Act, 2000.
- ✓ The Semi-conductor Integrated Circuits Layout-Design Act, 2000.

[21] RTPE 121 of 1988 decided on 29.7.1994 – (1995) 81 Taxman 178n(Mag) (MRTPC)
[22] (2001) 43 CLA 293 (MRTPC)
[23] (1995) 83 Comp. Cas. 712 (MRTPC)
[24] RTPE 73/86
[25] RTOE 11/1985
[26] Decided by MRTPC on 01.12.1992
[27] RTPE No.73/1987
[28] (1995) 19 CLA 26 (MRTPC)
[29] 1984 3 CLJ 265
[30] (1999) 35 CLA 250 (MRTPC)
[31] Taxman's Guide To Competition Law, pg.23

RIGHT FOR EXCLUSIVE EXPORT

Section 3(5) (ii) protects the right of any person to export goods from India to the extent to which the agreement relates exclusively to the production, supply, distribution or control of goods or provision of services for such export.

CONCLUSION & SUGGESTIONS

India has come a long way since it decided to adopt a liberalized economy in 1991 & progressively equipped itself to deal with the influx of Multi National Enterprises and the major step in this attempt is the enactment of the Competition Act, 2002 along with the major amendments made to it in 2007. This Legislation has served effectively in reining in & eliminating the multifarious ways in which enterprises have often tried to minimize & ultimately monopolize the relevant markets.

Nonetheless, there are a few glaring lacunas in the Competition Act, 2002. Firstly, if an anti-competitive practice is adopted by an enterprise situated outside India & thus not subject to the jurisdiction of authorities within the geographical limits of India, how are they to be controlled if their activities adversely affect competition within India? The Competition Act wide Section 32 provides for inquiry into situations where-(i)an anti-competitive agreement falling u/s.3 of the Act has been entered into outside India, or any party to such agreement is outside India; (ii)Any party abusing the dominant position is outside India; (iii)A combination or (d)Any other practice arising out of such agreement or dominant position or combination is outside India, if such agreement or dominant position or combination has, or is likely to have, an appreciable adverse effect in the relevant market. The primary flaw in this section is that it is silent as to what further action the Commission is to take once the inquiry is completed. Neither the types of Orders that the Commission may pass nor the means of enforcement of such Orders is stated in the Competition Act. The modes operandi in enforcing the decisions of the Competition Commission against enterprises placed outside the territory of India & that do not operate within India, have not been incorporated into the Act.

As of now there are no provisions, in the Competition Act, for dealing with issues relating to e-commerce Internet trading. As much of the entrepreneurial operations are done with the use of internet, it becomes quit-essential that provisions for regulating the same should be incorporated into the Competition Act.

Another quandary is in relation to the procedural aspects of Competition Act. Section 19(1) sets out the procedure for commencing inquiry into an anti-competitive agreement. It states that the Commission may inquire into any alleged contravention of the provisions contained in Section 3(1) suo motto, or on the receipt of a complaint from any person, consumer, or trade association or on a reference made by the central or a state government or a statutory authority. But, a common man, as a consumer or otherwise would not have the means of knowing about the terms of agreements entered into by enterprises with suppliers, sub-suppliers, agents, distributors, retailers etc at different places in India and their implications on competition. Anti-competitive agreements are pre-dominantly entered into by commercial enterprises, many of them are huge domestic and foreign enterprises involving a network of subsidiaries and their agreements wouldn't be available the public for perusal & will be accessible only to entities concerned with their execution. Sans perusing the agreements it would be unfeasible to detect whether any of the covenants set out in their agreements are in contravention to section 3(1) of the Competition Act, 2002 and without this knowledge it is impossible to initiate any action against such enterprises for eliminating their anti-competitive practices even though adequate measures may be provided in the Competition Act, 2002.

Adequate bilateral treaties such be entered into by India enabling it to reach even enterprises operating outside India but impacting business within the country by having an appreciable adverse effect of competition in India.

In order to enable the public, especially consumers be aware of the terms & conditions of the agreements that enterprises enter into, thus enabling them to know whether they are anti-competitive, major agreements as between manufacturers & retailers, distributors should be made to be published, by Statutory requirement, as in the case of Prospectus of companies inviting public monetary contributions, which has been made a mandatory pre-requisite as per Section 56 of the Companies Act, 1956. Suitable legislations should be made towards manifestation of this.

In conclusion it may be stated that the Competition Act, 2002 as amended in 2007, has equipped India in rising to global standards and streamlining enterprises in fulfilling their social responsibility in operating in a market where a healthy competitive spirit is maintained.

CSR PRACTICES AND RATINGS IN INDIAN BANKING SECTOR

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ABSTRACT

The scheme of CSR was developed as there was a need to make business a part of society and to maximize positive benefits that business endeavor can bring to human and environmental well being and to minimize the harmful effects of irresponsible business. When it comes to social responsibility of banks, the banks need to move beyond a narrow definition of CSR and look at some of the ways to alleviate poverty. CSR is a concept whereby financial institutions not only consider their profitability and growth, but also the interests of society and the environment by taking responsibility for the impact of their activities on stakeholders, employees, shareholders, customers, suppliers, and civil society represented by NGOs. The present paper attempts to study the CSR practices carried out by the selected banks and their ratings in the Indian banking sector.

KEYWORDS
Banking, CSR, CSR Practices, CSR Rating.

INTRODUCTION

The economic globalization resulted in a demand for corporations to play a central role in efforts to eliminate poverty, achieve equitable and accountable systems of governance and ensure environmental security.

Corporate Social Responsibility (CSR) is becoming an increasingly important activity to businesses nationally and internationally. As globalization accelerates and large corporations serve as global providers, these corporations have progressively recognized the benefits of providing CSR programs in their various locations. CSR activities are now being undertaken throughout the globe.

THE KEY DRIVERS FOR CSR

ENLIGHTENED SELF-INTEREST - creating a synergy of ethics, a cohesive society and a sustainable global economy where markets, labour and communities are able to function well together.

SOCIAL INVESTMENT - contributing to physical infrastructure and social capital is increasingly seen as a necessary part of doing business.

TRANSPARENCY AND TRUST - business has low ratings of trust in public perception. There is increasing expectation that companies will be more open, more accountable and be prepared to report publicly on their performance in social and environmental arenas.

INCREASED PUBLIC EXPECTATIONS OF BUSINESS - globally companies are expected to do more than merely provide jobs and contribute to the economy through taxes and employment."

HISTORY OF CSR

'Corporate Social Responsibility', phrase was coined in 1953 with the publication of Bowen's Social Responsibility of Businessmen" (Corporate watch report, 2006). The evolution of CSR is as old as trade and business for any of corporation. Industrialization and impact of business on the society led to completely new vision. By 80's and 90's academic CSR was taken into discussion. The first company to implement CSR was Shell in 1998. (Corporate watch report, 2006) With well informed and educated general people it has become threat to the corporate and CSR is the solution to it. 1990 was CSR as a standard industry with companies like Price Warterhouse Copper and KPMG. CSR evolved beyond code of conduct and reporting it started taking initiative in NGO's, multistakeholder, ethical trading. (Corporate watch report, 2006)

REVIEW OF LITERATURE

Robert Day & Dr. Clare Chambers (November 2009), Contributed to the debate with "The Banking Sector and CSR: an unholy alliance?" Financial Regulation International, both considers whether banks are already fulfilling their social obligations through their ethical policies or whether they could do more to incorporate those who are without financial products. He argues banks are no longer simply corporate entities they have, in fact, due to the growth of industrial society, become part of everyday life to such a degree that they have developed into utility entities, thereby justifying calls for corporate social responsibility (CSR) to be embedded in their actions.

Mahabir Narwal (2007),"CSR initiatives of Indian Banking Industry", Social responsibility Journal, Vol. 3, Issue 4, pp 49-60, highlights the CSR initiatives taken by the Indian Banking Industry which can help them to enhance their overall performance.

Meena & Smita (2010), "CSR in banking sector of India", Marketing from Information to Decision, Issue No.3, explains the different initiatives taken by different banks in India to introduce the CSR for sustainability. Study also reveals that amount which is kept to be utilized for fulfillment of social responsibility, is not utilized. Realistic and operational models of CSR should be framed.

Rojanasak Chomvilialuk & Ken Butcher (April 2010), "Enhancing brand preference through CSR initiatives in Thai Banking Sector", investigated the efficacy of three CSR initiatives on brand preference in the Thai Banking Sector.

Taide Anjali, (2010), "CSR Ratings and Stock Performance: An analysis of Indian companies from 2007-2009", her findings suggested that to extent to which the stock performance of selected companies get affected by the CSR ratings. She also examined that due to the financial losses, scandals and diminished reputation CSR is emerging as a crucial instrument in avoiding and resolving any conflicts with its stakeholders.

Nishi Sharma, (2011), "CSR Practices and CSR Reporting in Indian Banking Sector", IJAEBA, Vol. No.1, Issue No.2, 056-066 analyses CSR Practices and CSR reporting in India with special reference to banking sector.

NEED OF CSR

The CSR in banks is rooted in its Corporate Governance philosophy, which in turn is woven around Bank's commitment to ethical practices in the conduct of its business, while striving in the constant quest to grow with profits and enhance shareholders value and align interests of the shareholders, stakeholders and society through adoption of best international practices and standards. Managing CSR is not viewed as an extra cost or burden but is viewed not only as making good business sense but also contributing to the long-term prosperity of a Bank and ultimately its survival. Being a good neighbour and showing that you care on the one hand and being a successful business on the other, are flip sides of the same coin.

CSR IN BANKING SECTOR

The Bank besides playing its role in economic development of the State and country contributes significantly towards the social cause. The Bank has established its credentials for the poor and needy by donating generously for various philanthropic activities aimed at ameliorating their sufferings. Be it victims of natural calamity, like fire, flood, snowstorm or tsunami and disabled or patients with serious ailment who lack reliable means of survival, the bank has been all through supporting them. The one and a half decades long turmoil in the State of J&K has added to the agonies of people with hundreds of children losing their parents to fend for themselves in this harsh world. The Bank realizing its responsibility of saving the life/ future of these blooming children, adopt several of them by providing financial support either through various orphanages where they are sheltered or directly to the orphans by bearing their educational or other expenditure. The Bank would continue to provide study scholarships to the poor and needy students including students from far-flung areas, who without such support would have been school dropouts. The Bank shall continue donations for the development of infrastructure (computers, books, TV's, prosthetic support etc) to various NGOs, societies, trusts, institutions, etc. involved in socio-economic development of the society. The physically challenged persons belonging to socially and economically deprived classes especially children shall be helped by acquiring prosthetic support by meeting partly or fully cost of surgery with pre and post medication.

In order to enable socially and economically weaker classes to live a healthy life the bank shall endeavor to give financial support to the needy and poor patients, afflicted with dreaded diseases like Cancer, cardiac failure, Kidney failure etc. for their treatment / surgery.

OBJECTIVES OF THE STUDY

1) To study the CSR practices carried by select private sector banks.
2) To study the CSR rating of selected private sector banks.
3) To suggest some improvements for the banks which are lacking behind in CSR

ABOUT KARMAYOG

Karmayog is a unique free platform for the concerned citizens for social and civic issues since June 2004. It provides a networking platform for ordinary citizens and NGO's to engage with each other, and with Government, media, corporate institutions etc. Karmayog provides corporate social responsibility ratings for the largest 1000 Indian companies. As per Karmayog Triple Bottom Line is a concept where by a company will have to look at not just where the company should deploy its profits but how it made its profits in the first place. This implies looking at impacts on all its stakeholders which in essence is the base of CSR. The different parameter employed by Karmayog for CSR ratings are seen in Table no.1 as follows:

TABLE NO 1: KARMAYOG FOR CSR RATINGS

If an undertaking has any CSR activity	Level 1.
If CSR is linked to reducing the negative impacts of company's own products or processes	Level 2.
If CSR initiatives are for the local community	Level 3.
If CSR is embedded in the business operations	Level 4.
If innovative ideas and practices are developed for CSR	Level 5.

Source: http://www.mmbgims.com/docs/abstract/50_Anjali_Taide_ab.pdf

The criteria stated above are only the minimum criteria needed to qualify for a particular rating, apart from this, there were other negative and positive criteria, were also applicable and a combination of these determined the final rating.

METHODOLOGY

The purpose of the study is to analyze the CSR programs carried by bank on one side and the CSR ratings on the other side. For the very purpose five banks are selected depending upon the company type and the sales of the private sector banks rated by Karmayog for their CSR initiatives. Karmayog also identifies the CSR activities of a company under three sections; CSR for employees only, CSR within the vicinity and CSR for the society at large. The selected banks are HDFC Bank, ICICI Bank, Karur Vysya Bank, ING Vysya Bank and Axis Bank.

HDFC BANK

TABLE NO 2: HDFC BANK

CSR Areas	Main CSR Activities
1. Community Welfare 2. Education 3. Environment 4. Poverty Eradication 5. Vocational Training	1. Education 2. Community Welfare 3. Poverty Eradication

Source: http://www.karmayog.org/csr2010/csrall/csrdetails.aspx?id=596

The Bank seeks to achieve its corporate and social objectives by focusing on the following strategic areas:

Environmental Responsibility: Your Bank is aware of its role of an influencer towards the environment, which is embodied in its approach to Carbon Emission Reduction. The Bank demonstrates this commitment to contribute positively to the environment and sustainable development by calculating its carbon footprint and preparing a carbon management plan to reduce it.

In addition, in order to create awareness amongst employees on climate change and the need to reduce and recycle various drives to conserve the environment including tree plantation are organized on a regular basis.

Employee Engagement: The Bank's employees are encouraged to volunteer time and skills through the 'Corporate Volunteering Program: This year your Bank's employees have engaged in activities such as academic support classes, held English speaking courses and helped in organizing special events in order to celebrate festivals with the underprivileged. Additionally the Bank has facilitated employee donations to charities of their choice through' Give India; a donation platform that enables individuals to support social causes by donating to over 200 charities that have been screened for transparency and credibility. The bank makes a donation matching the amounts donated by its employees on a monthly basis.

Community Initiatives: As a responsible Corporate Citizen your Bank strives for community empowerment through socio-economic development of underprivileged and marginalized sections of society. The Bank partners with NGOs across India to support educational initiatives and livelihood training programs.

In the year ended March 31, 2010 the Bank supported a variety of educational programs ranging from educational sponsorships for girls, adoption of state-run schools, running of academic support classes and reading classes. The Bank also supports projects that provide skills training to school dropouts, youth, women and other disadvantaged groups. The Bank's social development programs have so far touched the lives of over 73,000 children and 700 women and youth.

ICICI BANK

TABLE NO 3: ICICI BANK

CSR Areas	Main CSR Activities
1. Community Welfare 2. Disaster Relief 3. Education 4. Environment 5. Healthcare 6. Poverty Eradication 7. Senior Citizens	1. Education 2. Community Welfare 3. Poverty Eradication

Source: http://www.karmayog.org/csr2010/csrall/csrdetails.aspx?id=610

ICICI GROUP CORPORATE SOCIAL RESPONSIBILITY PROGRAMS

Read to Lead: Read to lead is an initiative of ICICI Bank to facilitate elementary education for disadvantaged children in the age group of 6-13 years. An amount of Rs.25.00 million has thus far been disbursed to 100,000 children through 30 NGOs. The balance amount of Rs.75.00 million is planned to be disbursed during the period 2009-2010.

MITRA (ICICI Fellows Program): MITRA is an affiliate of CSO Partners that is focused on addressing the challenge of human resources for civil society organizations (CSOs). In partnership with CSO Partners and MITRA, ICICI Foundation proposes to launch an ICICI Fellows Program. An amount of Rs.55.00 million has been disbursed to MITRA for developing and launching the program over the period 2009-2010.

CARE (Disaster Management Unit): A grant of Rs.5.00 million has been given to CARE in India to enable it to prepare for any future disasters that may strike and respond immediately with the required relief efforts.

Rang De (Micro Enterprise Development): **'Rang** De', which is an affiliate of CSO Partners, has partnered with ICICI Venture to roll out funds for the micro enterprise development in rural and semi-urban locations. The amount of Rs.25.00 million that has been disbursed to them will support micro enterprises to the extent of Rs.15.00 million and the balance amount of Rs.10.00 million will go towards meeting their expenses to build the platform.

KARUR VYSYA BANK

TABLE NO 4: KARUR VYSYA BANK

CSR Areas	Main CSR Activities
1. Disaster Relief 2. Education 3. Environment 4. Healthcare	1. Healthcare 2. Disaster Relief 3. Education

Source: http://www.karmayog.org/csr2010/csrall/csrdetails.aspx?id=587

Table No 4 shows CSR areas and activities by Karur Vysya Bank. The bank has been discharging its role as a corporate citizen to various sections of the society on different occasions. Your bank has undertaken several initiatives in the area of education, health care, environment etc signifying its continued and long standing commitment to social and community welfare. Your banks initiatives in this area are channeled through institutions/ organizations that specialize in these activities.

Some of the initiatives include: Contributions made to the KVBOA Matriculation School, Karur, and provision of ambulance to the St. Margaret Education Society, New Delhi, construction of modern bio-gas crematorium at Udumalpet and construction of open air stadium at Karur.

The bank rose to the occasion when devastation struck Andhra Pradesh in the form of floods in October 2009, the Bank on its own contributed Rs.1 Cr. to the Chief Ministers Relief Fund there.

ING VYSYA BANK

TABLE NO 5: ING VYSYA BANK

CSR Areas	Main CSR Activities
1. Children 2. Community Welfare 3. Disaster Relief 4. Education 5. Environment 6. Rural Development	1. Children 2. Education 3. Community Welfare

Source: http://www.karmayog.org/csr2010/csrall/csrdetails.aspx?id=590

ING Vysya Foundation (IVF) was incorporated in October 2004 to promote Corporate Social Responsibility of ING Group entities in India. The Bank is the substantial contributor to the Foundation every year. The mandate for the Foundation is to promote primary education for underprivileged children. This approach is part of worldwide 'Chances for Children' program (CFC) of ING Group.

During the year, the Foundation has worked with NGO partners, who are engaged in following activities:

(a) Enrolling children (never been to school and out of school) back to school

(b) Preparing children through bridge schools and pre-primary schools for enrolling in formal schools

(c) Retaining and continuing education of the children who are already enrolled.

The partners have different approaches / program to cater to various groups of children. The community learning program helps in attaining the age-appropriate learning skills of children living in slums. The residential program provides an opportunity for the drug addicted children and child labourers living on the streets to be in school. Learning centre models are for children who are living in slums or in rural areas and also children from red-light areas.

Annual Fund raising Campaign - 'I believe I can Fly': IVF launched an annual fund raising campaign during the month of September 2009. The employees of the Bank actively participated in the campaign and helped in raising about Rs.53 Lakh (Rupees Fifty Three Lakh) towards this cause. The amount so collected will be contributed to educate children under the care of existing partners.

Volunteer program: IVF provides opportunities to employees to volunteer for the development and growth of children, living in difficult circumstances, such as children living in slums, child labour, children never been to school, drop outs, orphan children and so on. During the year several volunteer initiatives were

organized under the 'Hope Brigade' program. One such program was the 'Home buddies campaign' aimed to provide a platform for employees to interact with children, under the care of our NGO partners to help develop reasoning and logic, and age appropriate learning skill. Around 50 employees enrolled themselves as volunteers for this program, during the year. Another volunteer program was 'ING Global Challenge - Chances for Children'. In 2007, Asia pacific had launched ING Global Challenge to raise awareness on the 'Chances for Children' program and also to provide its employees an opportunity to volunteer to promote the cause of education for underserved children. This year's edition marked the 20th anniversary of the day the UN adopted the Convention on the Rights of the Child. In India, 1,500 employees from Bank along with 1,200 children in 30 locations across the country had celebrated ING Global Challenge. Musical shows, painting competitions, fun picnic, cricket matches, visit to various historical sites and many more events were conducted all over India.

Contribution towards Karnataka and Andhra Pradesh Flood Relief: The Bank and its employees together had contributed Rs. 66 Lakh (Rupees Sixty Six Lakh) towards the Karnataka and Andhra Pradesh flood relief programs during October 2009.

AXIS BANK

TABLE NO 6: AXIS BANK

CSR Areas	Main CSR Activities
1. Children	1. Education
2. Community Welfare	2. Community Welfare
3. Education	3. Children
4. Environment	
5. Girl Child	
6. Healthcare	
7. Poverty Eradication	
8. Rural Development	
9. Vocational Training	
10. Women	

Source: http://www.karmayog.org/csr2010/csrall/csrdetails.aspx?id=43

As an integral part of society, the Bank is aware of its corporate social responsibilities and has been engaged in community and social investments. For this purpose, the Bank has set up a Trust - the Axis Bank Foundation, to channel its philanthropic initiatives.

The Axis Bank Foundation has committed itself to participate in various socially relevant endeavors with a special focus on education for the special/underprivileged children. The Trustees of the Foundation have focused on education for underprivileged children and: these are largely supported by program grants in order that the projects become replicable. The Bank has decided to contribute up to one percent of its net profit annually to the Foundation under its CSR initiative. During the year, the Foundation partnered with twelve more NGOs, taking the partnership to a total of 42 NGOs, for educating underprivileged children and special children all over India. The Foundation has committed grants for projects running up to three years. Eight hundred and fifty nine education centres, evolving 12 States are covered by the Foundation programs. 55,452 children are covered under the programs that include 27,899 girls and 27,553 boys. The projects supported by the Foundation involves imparting quality education for the underprivileged child (with a special focus on the girl child), focusing on early childhood programs for 2-6 year olds, focusing on projects that encourage 'Inclusive Education' for physically challenged children, teacher training programs that result in competencies to -each pre-primary and primary school children and supporting vocational training centers in slum areas to imparting training to School dropouts.

The Axis Bank Foundation will also play an important role under the Bank's Financial Inclusion initiative. It is proposed that literacy campaigns will be launched by the Bank in all regions where financial inclusion is undertaken where the objective of the Bank will be to impart financial awareness. It will also undertake various other initiatives such as healthcare, vocational training and other community development programs like afforestation and rain-water harvesting in these areas.

CSR ACTIVITIES CARRIED BY SELECT PRIVATE SECTOR INDIAN BANKS

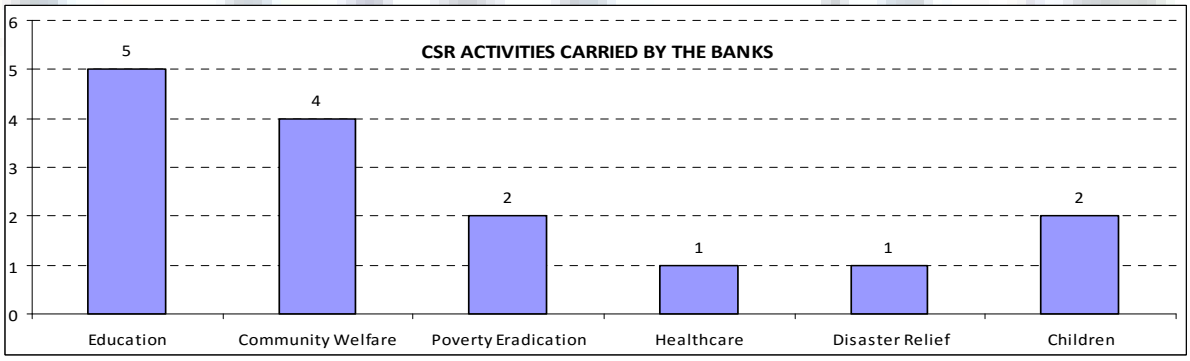
Table No 7 shows the CSR activities undertaken by selected Indian private sector Banks. The CSR main activities focus had been education, community welfare, poverty education, healthcare, disaster relief and children.

TABLE NO 7: CSR ACTIVITIES CARRIED BY THE BANKS

Bank Name	Education	Community Welfare	Poverty Eradication	Healthcare	Disaster Relief	Children
HDFC Bank	1	1	1	0	0	0
ICICI Bank	1	1	1	0	0	0
KARUR Vysya Bank	1	0	0	1	1	0
ING Vysya Bank	1	1	0	0	0	1
AXIS Bank	1	1	0	0	0	1
Total	5	4	2	1	1	2

Source: http://www.karmayog.org/csr2010/csrall/csrdetails.aspx?id=43

GRAPH 1: CSR ACTIVITIES CARRIED BY THE BANKS



Source: http://www.karmayog.org/csr2010/csrall/csrdetails.aspx?id=43

The Graph 1 shows CSR practices of the selected banks represents a wide spectrum of different activities which includes Education, Community Welfare, Poverty Eradication, Healthcare, Disaster Relief, Children. It is clear from the above graph that mostly the private sector banks are focusing primarily on Education, secondly on Community Welfare and then Children followed by the Healthcare and Disaster Relief.

TABLE 8: CSR RATINGS OF SELECTED BANKS

Bank Name	Company Type	Principle CSR Activity	CSR Rating 2007	CSR Rating 2008	CSR Rating 2009
HDFC Bank	Private Sector	Education, Community Welfare, Poverty Eradication	3	2	2
ICICI Bank	Indian Multi National	Education, Community Welfare, Poverty Eradication	3	3	3
KARUR VYSYA Bank	Private Sector	Healthcare, Disaster Relief, Education	N.R.	0	0
ING VYSYA Bank	Multi National	Children, Education, Community Welfare	2	2	3
AXIS Bank	Private Sector	Education, Community Welfare, Children	N.R.	0	3

Source: http://www.karmayog.org/csr2010/csrall/csrdetails.aspx?id=43

From table 8 we can find that CSR ratings of the five samples of banks are selected for the study. The table also provides the different fields in which the banks have taken initiatives to promote their CSR quotient. The CSR rating for the HDFC Bank for the year 2007 is 3 and then there is decreasing trend for the followed years. The rating for the Karur Vysya Bank is not rated in the year 2007 and it is 0 for the followed years. That means they have not at all given importance to the CSR. For the year 2007 & 2008 the ING VYSYA bank is showing the constant rate but in 2009 it showing increasing trend. The Axis bank directed in jumped to 3 in the year 2009 as in 2008 it is 0 and in 2007 it is not rated. ICICI bank is the only bank having a constant rating of 3 through out the period of study. This is also the company which has the most diversified CSR portfolio, next to ING VYSYA bank, Axis bank and HDFC bank.

CONCLUSION

Banking sector in India is showing interest in integrating sustainability into their business models but its CSR reporting practices are far from satisfaction. There are only few banks which report their activities on triple bottom line principles. As a matter of fact, the standards for rating CSR practices are less uniform in comparison to that for financial ratings. Absence of mandatory provisions regarding reporting of CSR practices further cause negligence on the issue of reporting. Further, the study found that among the reporting banks also, some banks are just making false gestures in respect of their efforts for socio-environmental concerns. The adaptation of reporting CSR practices though quite slow in India, still it would definitely get a great pace in near future. In fact there is a great need for enacting some stringent regulatory provisions to ensure the adherence to social responsibility principles.

SUGGESTIONS

It is observed from our study that only few banks are showing interest in CSR activities. The voluntary actions are required to be taken by the financial bodies to ensure the socio-environmental feasibility of projects to be financed. Indian banking sector must also depict their socially responsible behaviour through integrating triple bottom line principle. Banks must also provide appropriate training to its employees on environmental and social risks in lending to ensure that climate change is taken into account in corporate banking decisions. Further regulatory authorities must envisage the regulations for initiating reforms in reporting practices.

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POVERTY, INEQUALITY AND INCLUSIVE GROWTH IN RURAL INDIA: AN ANALYSIS

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ABSTRACT

The approach paper to the Eleventh Plan stresses the importance of more inclusive economic growth. Inclusive Growth focuses on economic growth which is a necessary and crucial condition for poverty reduction. Further, the strategy for inclusive growth is to provide access to basic facilities such as health, education, clean drinking water etc. to the common people. In the short run these essential services impact directly on welfare, in the long run they determine economic opportunity for the feature. But recent trend tells the different story that the high growth rate is unable to reduce the poverty and inequality in India. Increasing inequality in tandem with high growth rate has been a point of growing concern in Indian economy. This paper examine that inclusive growth emphasizes creation of an equal access to opportunities; and that unequal opportunities arises from social exclusion associated with faulty approach and politically motivated policies. Poverty alleviation programmes become have been ineffective and growth generated inequalities in the rural India. This will enable rural India to address the agenda of eradicating extreme poverty particularly in rural areas, and at the same time discuss the development challenges brought about by rising inequalities.

KEYWORDS
Inclusive Growth, Inequality, Poverty, Unemployment.

INTRODUCTION

The relationship between poverty, income inequality and economic growth has received much attention in the economic literature. Inclusive Growth is directly related to the reduction in poverty and income inequality. The main Elements of Inclusive Growth are Poverty reduction and increase in quantity and quality of employment, agricultural development, social sector development, reduction in regional disparities and protecting the environment. The term Inclusive Growth defined in the Eleventh Plan as 'growth process which yields broad based benefits and ensures equality of opportunity for all', it stands for 'equitable development' or 'growth with social justice', which have always been the watch words of development planning in India. In contrast, in the relative definition, growth is "pro-poor" if and only if the incomes of poor people grow faster than those of the population as a whole, i.e., inequality declines. However, while absolute pro-poor growth can be the result of direct income redistribution schemes, for growth to be inclusive, productivity must be improved and new employment opportunities created. In short, inclusive growth is about raising the pace of growth and enlarging the size of the economy, while leveling the playing field for investment and increasing productive employment opportunities.

The common argument is that with the increase in the growth of the economy to 8-9 per cent, ultimately all will benefit. So don't worry about the poor. But the hard reality is that the high growth rate is unable to reduce the poverty and inequality in India. Increasing inequality in tandem with high growth rate has been a point of growing concern in Indian economy. Though perfect equability is probably unattainable, inequality become a problem when a differences in income across section of societies or became self propelling. As far as India's economic growth is concerned it has started growing at the fast rate of 7 per cent per annum, the rich are reaping the benefits of development. The poor are disillusioned since the benefit does not percolate to raise their stander of living (Dutta, & Sundram, 2009).

But due to faulty approaches and often politically motivated policies, growth has generated inequalities; Poverty, in rural areas. Poverty alleviations programmes have been ineffective for want of proper implementation. It is difficult to say how much poverty alleviation and how much due to growth itself (Hasim, S.R.2007). If economic growth is not shared throughout society then development has failed (Joseph.E.Stilglitz).

In the light of above discussion, this paper examines how much the growth process is able to effect on poverty and inequality in the country. We then provide the sufficient Review of literature to support the present study. The subsequent section describes the Growth, inequality and poverty in Indian states. The final section discusses the findings and gives the suggestion for the proper implementation of the poverty alleviations programmes in the country to distribute the fruit of the development among the rural people of the country.

METHODOLOGY

In the present theme, the study is conducted in the following stages. First, an attempt is made to document briefly the approaches and strategies adopted by the government in the field of rural development. Second, to analyses with a brief survey of literature on importance of economic growth, poverty reduction and inequalities in rural India. Third, to access the impact of inclusive growth on poverty and unemployment reduction in urban and rural India.

The analysis used secondary data from variety of sources, including NSS data, Approach to the eleventh plan, Human Development Report, India in Figure 2009 National Nutrition Monitoring Bureau (NNMB) data, etc.

REVIEW OF LITERATURE

Angus Deaton and Jean Dreze, (2002), in his paper "Poverty and Inequality in India: A Re-Examination", presents a new set of integrated poverty and inequality estimates for India and Indian states for 1987-88, 1993-94 and 1999-2000. The poverty estimates are broadly consistent with independent evidence on per capita expenditure, state domestic product and real agricultural wages. They show that poverty decline in the 1990s preceded more or less in line with earlier trends. Regional disparities increased in the 1990s, with the southern and western regions doing much better than the northern and eastern regions. Economic inequality also increased within states, especially within urban areas, and between urban and rural areas. We briefly examine other development indicators, relating for instance to health and education. Most indicators have continued to improve in the nineties, but social progress has followed very diverse patterns, ranging from accelerated progress in some fields to slow down and even regression in others. We find no support for sweeping claims that the nineties have been a period of 'unprecedented improvement' or 'widespread impoverishment'.

Andre Beteille, (2003), in his article, "Poverty and Inequality", discuss that the relationship between poverty and inequality is neither clear nor direct. Poverty and inequality are analytically distinct concepts. They vary independently of each other, and it is misleading beyond a point to treat the one as a marker of the other. The study of both poverty and inequality has been closely associated with an interest in economic and social change. But poverty and inequality do not change at the same pace, and they may even change in opposite directions. It is difficult to make any meaningful statement about the relationship between the two without specifying which conception of poverty and which aspect of inequality one has in mind.

Bhanumurty, N.R, and Mitra Arup, (2004), in his paper "Economic Growth, Poverty, and Inequality in Indian States in the Pre-reform and Reform Periods" assesses the impact of economic reforms on poverty incidence by decomposing the change in poverty ratio into growth/mean effect, inequality effect, and population shift effect for the rural and urban areas of 15 major states and at the all-India level. The growth/mean effect dominates in both periods over the

inequality effect and the population shift effect. The growth effect, which is beneficial for poverty reduction, seems to have gone up in the reform period. The adverse inequality effect also fell during the reform period. States with a greater beneficial growth effect in the reform period also show a fall in the magnitude of an adverse population shift effect in the urban areas, i.e., a relatively smaller increase in the incidence of urban poverty caused by rural urban migration.

Ali Afzal, (2008), in his article, "Inequality in Developing Asia" argues that growing income and no income inequalities in developing Asia pose a clear and present danger to social cohesion, political stability, and therefore the sustainability of growth itself. The rapid creation of productive economic opportunities combined with significantly broadening access to these opportunities, particularly for the bypassed and marginalized, must be ensured. Progressively lifting the well-being of a greater share of the population will contribute toward harmony.

Jha Raghbendra, (2000), in his paper "Growth, Inequality and Poverty in India Spatial and Temporal Characteristics" examines the empirical relationship between economic inequality, poverty and economic growth in the Indian states. Using NSS data on consumption for the 13th to the 53rd Rounds, he compute the Gini coefficient, real mean consumption and the head count ratio for rural and urban sectors and average for 14 major Indian states. The rank concordance index across states does not usually show convergence. Nevertheless, there is (conditional) convergence (in terms of levels) in inequality and poverty measures across states. The coefficients of variation do not show any tendency to fall over time. What is particularly worrisome is that the coefficient of variation of the rural head count ratio seems to be rising over time, indicating greater dispersion in rural poverty across states.

Sen Abhijit, and Himanshu, (2004), in his paper, "Poverty and Inequality in India", examine the 55th round (1999-2000) of the NSS used a different methodology from all previous rounds and arrived at lower poverty estimates. The consensus from earlier NSS rounds, that poverty reduction had been set back during the 1990s, was challenged by this data. This was bolstered by some 'adjustments', which although agreeing that the 55th round had overestimated poverty reduction, claimed that the number of poor had nonetheless fallen by 30-45 million. However, a detailed re-examination shows that these 'adjustments' were not correct. The poverty ratio fell at most by 3 percentage points between 1993-94 and 1999-2000, and it is likely that the number of poor increased over this period. The main lesson is that poverty estimates are very sensitive to both survey design and post-survey analysis.

Thamarajakshi, R, (2003), in his article, "Growth and Poverty in India in the 1990s" discussion recently on the data base for poverty measurement in India, doubts have been raised whether the household expenditure survey data generated by the 50-year old National Sample Survey system currently being used for poverty measurement fully reflects the growth in consumer expenditure and captures the extent of change in the poverty ratio. And when the results of the quinquennial survey for 1999-2000 were released, the change in its survey design threw up yet another controversy about the validity of its results. These two issues have been discussed at length and we shall outline briefly the salient aspects of the discussion and move on to the more substantive question whether conditions of rapid growth and decline in poverty obtained in the 1990s.

Ninan, K. N. (1994), "Poverty and Income Distribution in India" analyzes the global poverty and income distribution pattern, and also causal factors behind rural poverty in India both at the national and state levels... Adopting an alternate model and categorization of the time period of analysis into two phases which is empirically and theoretically justified the paper observes that contrary to the findings of other researchers, not only are there distinct time trends in the incidence of rural poverty in India, but also while these trends were positive and significant. These observations are valid for both all-India and across states, using alternate measures of poverty, i e, the head count ratio and Sen's poverty index. The paper then attempts both a time series and cross-section analysis of the causal factors behind rural poverty in India, especially probing into the role of agricultural growth, inflation, access to subsidised food through the public distribution system, population pressure on environmental resources, rural consumption levels and inequality, and infrastructure development on the incidence of rural poverty for all-India and across states.

By reviewing the literature it has been observed that economic inequality increased within states, between urban and rural areas. It has been also observe that most of the social indicators have continued to improve in the nineties, but slow down in the latter period.

GROWTH, POVERTY AND INEQUALITY

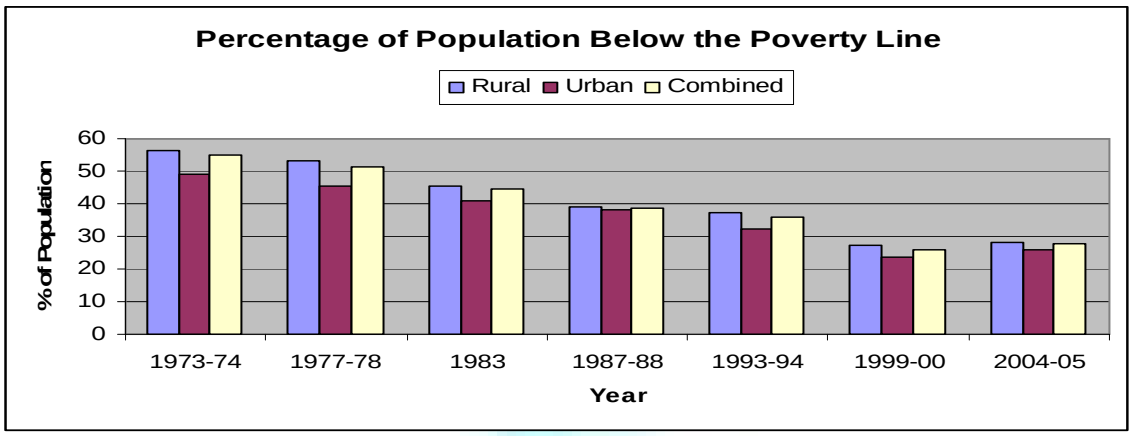
The relationship between income growth and poverty reduction is examined as follows. Poverty remains a serious problem for the country as a whole. On normative grounds, poverty can be declared unacceptable as it violates human dignity and basic human rights. Therefore, the need of its eradication or mitigation has become morally more salient and has sparked a global justice movement (Raimo Väyrynen2005). The percentage of poor has, of course declined from 55 in 1973 to 27.5 per cent in 2004-05 (Fig.-1); it is still a high level of poverty for an economy experiencing high growth rate. As for absolute numbers, there were 321 million poor in 1973-74, 320 million in 1993-94 and 302 million poor in 2004-05. Some of the more detailed features of this level of poverty make it even more a matter of serious concern. The National Sample Survey Organization (NSSO) constructed three income groups - bottom, middle and top; for these groups the per capita expenditure on cereal, non-cereal and total calorie intake for the years 1970 to 1989, 1990 to 1998, to 2000 was estimated. For the bottom income group, particularly resided in rural areas, expenditure on cereals has fallen from 0.10 per cent per annum to -1.38; it is worse for non-cereals where the expenditure has decreased from 2.81 per cent per annum to 0.96 per cent per annum. The figures of different levels of poverty in the above study are useful: Between 1993-94 and 1999-2000, the proportion of extremely poor fell from 2.0 to 0.8, very poor from 11.7 to 8.2; moderately poor from 22.1 to 18.3 and the 'poor' as defined by below poverty line from 36.8 to 26.5Predictably, the percentage of poor in rural areas is highest amongst the agricultural labor, followed by the self-employed. According to National Nutrition Monitoring Bureau (NNMB) data, 37.4 per cent of adult females and 39.4 per cent of males suffer from chronic energy deficiency. NSS data on poverty and alternate estimates by other scholars concluded that poverty reduction was less than 3 per cent between 1993-94 (50th NSS) and 1999-2000 (55th NSS). Under nutrition is particularly serious in rural areas, in the lower wealth quintiles, among scheduled tribes and scheduled castes, and among those without education. Almost half the children under age five are stunted, or too short for their age, which indicates that they have been undernourished for some time. 20 per cent are wasted, or too thin for their height, which may result from inadequate recent food intake or a recent illness. 43 per cent are underweight, which takes into account both chronic and acute under nutrition. More than half the children under age five are underweight in Madhya Pradesh, Jharkhand and Bihar.

TABLE-1: PERCENTAGE OF POPULATION BELOW POVERTY LINE (RURAL+URBAN)

States	1973-74	1977-78	1983	1987-88	1993-94	2004-05
Orissa	66.18	70.07	65.29	55.58	48.56	46.40
Bihar	61.91	61.55	62.22	52.13	54.93	41.40
Madhya Pradesh	61.78	61.78	49.78	43.07	42.52	38.30
Uttar Pradesh	57.04	49.05	47.07	41.46	40.85	32.80
Maharashtra	53.24	55.88	43.44	40.41	36.86	30.70
Karnataka	54.87	48.78	38.24	37.53	33.16	25.00
West Bengal	63.43	60.52	54.85	44.72	35.66	24.70
Tamil Nadu	54.93	54.79	51.66	43.39	35.03	22.50
Rajasthan	46.14	27.42	34.46	35.15	27.21	22.10
Gujarat	48.15	41.23	32.79	31.54	24.21	16.80
Andhra Pradesh	48.86	39.31	28.91	25.86	22.19	15.80
Kerala	59.79	52.22	40.42	31.79	25.43	15.00
Haryana	35.36	29.55	21.37	16.64	25.05	14.00
Punjab	28.16	19.27	16.18	13.20	11.77	8.40
All-India (avg.)	**54.88**	**51.32**	**44.48**	**38.86**	**35.97**	**27.50**

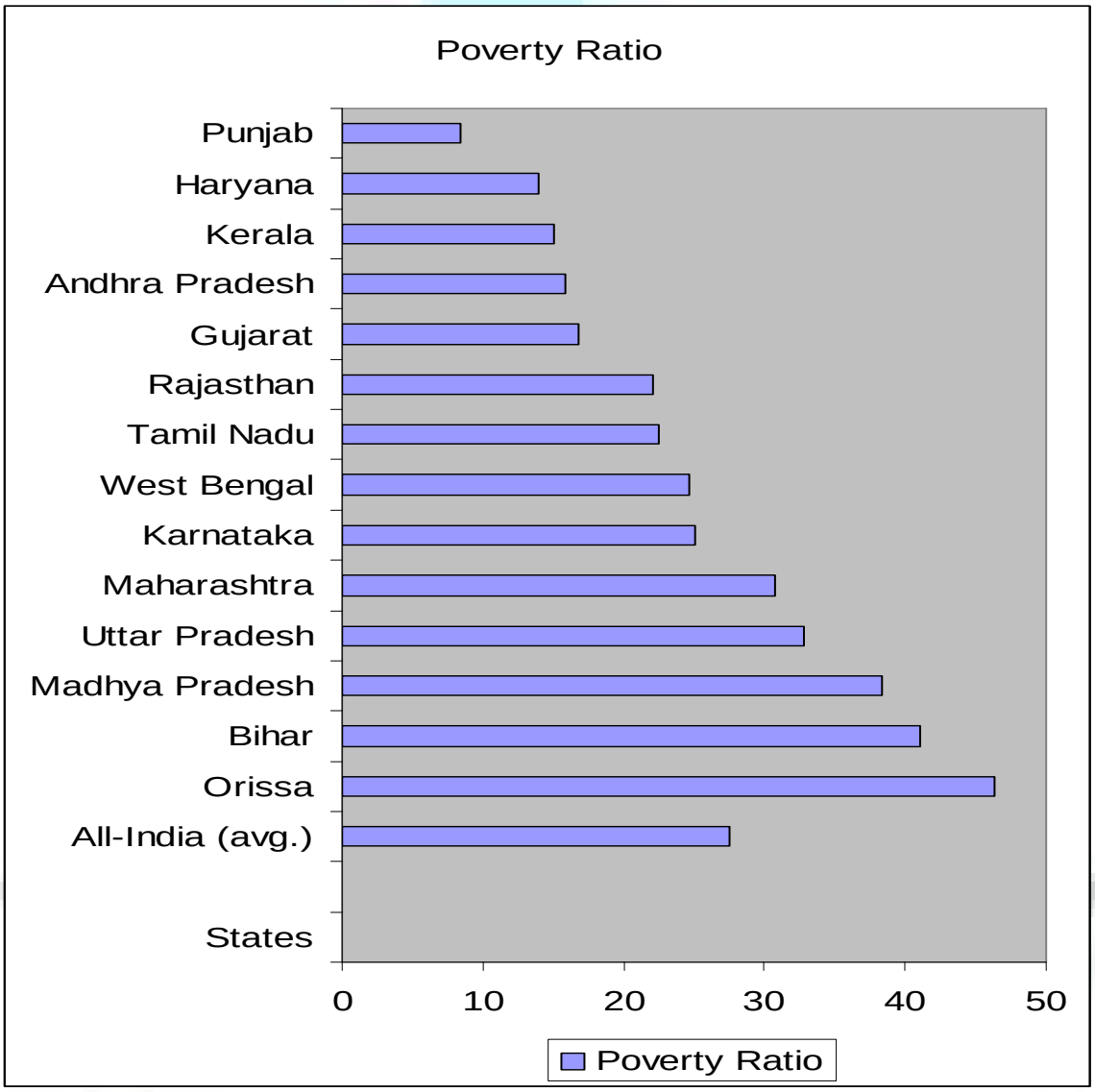
Source: Planning Commission, Government of India.

FIG. 1: PERCENTAGE OF POPULATION BELOW THE POVERTY LINE



Source: Planning Commission, Government of India.

FIG. 2



Source: Planning Commission Government of India.

The above fig. 2 clearly reflects that poverty over the year has got more concentrated in a fewer states. Five states with high poverty ratio 1993-94 were Orissa (49%), Bihar (55% including Jharkhand), Madhya Pradesh (43%) and Uttar Pradesh (41% including Uttarakhand).Rural poverty ratio in these states were even higher. These are also the states which experience the slowest rate of reduction in poverty over the period 1987-88 to 2004-05, with the exception of Punjab, Haryana, Kerala which had already reduced poverty ratio to quite low level i.e. Punjab(8%), Haryana(14%), and Kerala(15%) in the year 2004-05 as against all India poverty ratio of 27 percent.

From poverty, we now turn to inequality. Moreover, the politics of inequality has more nuances than the politics of poverty. When poverty is addressed as a political issue, the focus is primarily on the poor, their vulnerability and suffering, while in the debates and actions on inequality have to focus also on the rich and the outcomes in the redistribution of economic resources. Inequality is a bad thing, not in itself but because of its adverse consequences. Inequality is the

dispersion of a distribution in terms of income, consumption or some other welfare indicator or attribute of a population. Accordingly, spatial inequality refers to uneven distribution of income or other variables across spatial location (World Bank 1999; Kanbur *et al* 2003).

TABLE-2: ECONOMIC GROWTH, INEQUALITY AND POVERTY HEADCOUNT RATIO DURING 1983-2005

	1983	1993-94	2004-05
Per Capita GDP	10,253	13,608	22,120
Gini Coefficient of Inequalities % (in 1999-00 prices)	0.30	0.29	0.31
Poverty Headcount Ratio%	46.5	37.2	27.5

	1983/1993-94	1993/94-2004/2005
Annual Growth Rate of Per capita GDP (%)	2.83	4.42
Annual Change in Gini	- 0.002	0.002
Annual Percentage Point Change in Poverty Headcount Ratio	- 0.89	- 0.77

Source: Ministry of Finance 2008, Himansu (2007)

The above table reflects that the proportions of people below the poverty line- called the "head count ratio" and calculate on the basis of consumption expenditure data from large scale households survey calculated by National Sample Survey Organization (NSSO), has fallen from 46.50 in 1983 to 37.2 per cent in 1993-94 and further 27.5 in 2004-05. What worried about is that the pace of poverty reduction has not accelerated significantly, despite a noticeable rise in in the economic growth of India. The annual average growth rate of real GDP per capita increased from 2.83 during 1983/1993-94 to 4.42 during 1993/94-2004/05, while the average annual reduction in the poverty headcount ratio, expressed in terms of percentage point, has fallen 0.89 in the former period to 0.77 in the latter period. The above also reflects the that the Gini coefficient of income inequality fall between 1983 and 1993-94 but rose back to it pervious level around 0.3 by 2004-05.

RURAL DEVELOPMENT

Rural development in India has evidenced several changes over the years in its emphasis, approaches, strategies and programmes with a view to improving the socio-economic conditions of the people: in providing good infrastructural facilities, support services and employment opportunities. The five year plans give more emphasis to reduce the poverty and increase employment opportunity in the country. The special emphasis is given in the fifth plan to remove the poverty in the country and after that number of poverty alleviations programme and employment guarantee scheme have been initiated in the country such as IRDP, NREP, RLEGP, TRYSEM, DWCRA, NREGA etc. are the few programmes for poverty reduction and rural enlistment. But poverty alleviations programmes have been ineffective in the past due to proper implementation.

No doubt economic growth is important for poverty alleviation, but recent studies indicates that rapid growth creates complexities i.e. mass movement of people from rural area to urban areas, further strain the access the basic services like health, education, housing and water, which affect the poor more adversely than the others, also need to be adequately address. In spite of the advances made, there still remains much to be done to bring prosperity in the lives of the people in the rural areas, thus ending the so-called divide between Bharat and India.

TABLE-3: INCIDENCE OF POVERTY, MALNUTRITION, LITERACY RATE, GDSP RANK AND INFANT MORTALITY RATE IN MAJOR STATES OF INDIA.

States	Rank by GDSP	HDI Rank	Literacy Rate(2001)	Infant Mortality (2003)	Malnutrition Under 3 Year Under-Weight Children (%) (2005-06)	Poverty Ratio Rural+ Urban
Bihar	14	15	47.5	60	58.4	41.0
Orissa	10	11	63.3	83	44.0	46.4
Uttar Pradesh	15	13	57.4	76	47.3	32.8
Madhya Pradesh	11	12	64.1	82	60.3	38.3
Rajasthan	9	9	61.00	75	44.0	22.1
West Bengal	7	8	69.2	46	43.5	24.7
Andhra Pradesh	8	10	61.1	59	36.5	15.8
Karnataka	4	7	67.00	52	41.4	25.0
Tamil Nadu	2	3	73.5	43	33.0	22.5
Haryana	12	5	68.6	59	41.9	14.0
Gujarat	5	6	70.00	57	47.4	16.8
Punjab	16	2	69.9	49	27.0	8.4
Maharashtra	1	4	77.3	42	39.7	30.7
Kerala	3	1	79.9	11	28.8	15.0
All-India (avg.)			**65.4**		**45.9**	**27.5**

Source: United Nation Development Report, 2009.Planning commission Govern ment of India, and Economic Survey 2007-08.

In the above table an attempt is made to assess the food security status and the relative position of states poverty, malnutrition, Literacy rate, Gross State Domestic product, HDI ranks and infant mortality rates estimated from NSS data for 2004-05 in terms of households having inadequate food, is seen to be only affecting a small percentage of households at all-India level at 1.9 per cent (Table-3). It also is concentrated in states like West Bengal, Orissa and Bihar though again in small dimension. The Eleventh Five Year Plan has observed that PDS seems to have failed in making food grain available to the poor as is evident from falling levels of cereal consumption over the last two decades. While poverty rates have declined significantly, malnutrition has remained stubbornly high (xi th five year plan).

Malnutrition, as measured by underweight children below 3 years, constituting 45.9 per cent in children under 3 years of age as per the National Family Health Survey 2005-06 (NFHS 3) has still remained much higher. It has also not significantly declined from its level of 47 per cent in 1998-99 (NFHS 2). Malnutrition reflects an imbalance of both macro and micro level. It may be observed that malnutrition cannot entirely be explained by poverty though it is an important determinant (Table-2). Even Punjab with poverty ratio of only 8.4 per cent has 27 per cent children below 3 years as underweight. Andhra Pradesh, Gujarat and Haryana are some other examples of high malnutrition among children with lower levels of poverty. Hence, there is need to focus on the malnutrition issue in our policies and programmes. While the ability to access such food items depends on household income and is addressed through programmes like NREGS, there are other factors which are equally important but are ignored. Due to unavailability of adequate food, infant Mortality rate is also high again in these states. Orissa, Madhya Pradesh, Rajasthan Uttar Pradesh and Bihar had the highest Infant Mortality ratio in the year 2003.These are also the states that have the experience low economic growth and have been exceptionally inefficient in implementing poverty alleviation programmes.

TABLE-4: POVERTY AND UNEMPLOYMENT AMONG URBAN AND RURAL AREAS AND RURAL URBAN DISPARITIES IN AVERAGE MONTHLY PER CAPITA EXPENDITURE

(As percent total Population and Labour force)

TABLE-POVERTY AND INEQUALITY ACROSS RURAL AND URBAN AREAS							
Year	Poverty Ratio (in %)		Gini index Per capita Consumption		Rural-Urban Disparity in Averae Monthly Per Capita Expenditure	Unemployment	
	Rural	Urban	Rural	Urban		Rural	Urban
1973-74	56.4	49.0	28.7	31.9	1.334	-	-
1977-78	53.1	45.2	29.5	23.7	1.396	7.7	10.3
1983-84	45.7	40.8	30.0	34.1	1.458	7.9	9.5
1987-88	39.1	38.2	29.4	34.5	1.585	5.3	9.4
1993-94	37.3	32.4	28.5	34.4	1.628	5.6	7.4
2004-05	28.3	25.7	30.5	37.6	1.882	3.5	6.75

Source: India in Figure 2009, Central Statistical Organization, Ministry of statistics and programme Implementation, New Delhi and Per capita expenditure at current prices calculated by author.

Table- 4 provides information about population below the poverty line and youth unemployment rate and Gini index per capita consumption in rural and urban areas. The table reveals that unemployment rate traditionally higher in urban areas than in rural areas. As against an unemployment rate of 10.3 in 1987-88 in urban areas, the rural unemployment rate was 7.7 (CDS basis).There was a significant fall in the rural unemployment rate in 1987-88 to 5.3 percent, but the urban unemployment rate was of the order of 9.4 percent, significantly higher. After 1993-9, the period of liberalization rural unemployment rate again increase to 7.2 percent while urban unemployment also marginally increased to 7.7 percent during 1993-94 to 1999-2000.In the period 2004-05 the unemployment rate is continue to very slightly to 3.5 percent in rural areas whereas urban unemployment was declined merely 1 percent to 6.75 percent. Higher level of unemployment in the urban areas could be explain by a large proportion of organized sector unemployment which force people to either remain employed or unemployed. But the increased in unemployment rate in rural areas may be due to the neglect of rural areas in the post reform period.

Although the rural poverty has declined continuously, income inequality increased from 1973-74 to 1983-84, declined from 1983-84 to 1993-94 and increased afterwards from 1993-94 to 2004-05. On the other hand, although urban poverty has been declining continuously, urban inequality has been rising in an uninterrupted manner. Poverty reduction in urban areas has been slightly faster than that in rural areas.

CONCLUSION

This paper assesses the impact of economic growth on poverty and inequality in the states of India. The two time periods are from 1983 to 1993-94 and from 1993-94 to 2004-05, described as earlier and later periods, respectively. The India's economic growth rate in the last one decade has been 7 to 8% per annum. However, the latter period witnessed increase in disparities across regions and social groups and between rural and urban areas. Inequality become widen at the all-India level. However, in the rural areas of a large number of states have shows inequality, even in the urban areas of the states and at the all India level the adverse inequality effect increase considerably in the later period.

There is a need to have a broad based and inclusive growth to benefit all sections of the society. We have discussed challenges in most important elements of inclusive growth: agriculture, poverty and employment, social sector and, regional disparities. Improving decentralization and governance are also part of inclusive growth. It is more challenging for the state to achieve this inclusive growth than getting 7 to 8 per cent growth in GSDP. In other words, there is no trade-off between equity and growth.

Growth may be good for its poor, but due to the relative decline of agriculture and the high and growing importance of services, inequality is likely to increase. We find that final demand growth for community, social, and personal services raises inequality between and within household. Our findings clearly stress that employment creation will not be enough to secure equitable growth. Furthermore, during the decades of nineties and after that the rate of economic growth has gone up significantly. But this growth has not generated enough employment and livelihood opportunities for the poor.

We suggest following measures for enhancing inclusive growth in India.

First, agriculture development should be given priority for more inclusive growth. Stepping up agricultural growth is essential for raising the growth rate in GSDP and for reducing poverty. Second, it has been recognized that better governance is very important for inclusive development. This is important for better implementation of sectoral policies and poverty alleviation programmes. Social mobilization, community participation and decentralized approach are needed. Third, equality of opportunities is also important. Even if we do not follow equitable distribution of assets, every one should get equal opportunity for better education and health. Fourth, inclusive growth is important for raising growth and development. If we reduce rural-urban and regional disparities, growth will increase. If we define equity in terms of empowerment and increase in the participation of the poor, there is no trade-off between inclusive growth and economic growth.

Lastly, investment in infrastructure sector is also important for inclusive growth Therefore, there is a need to develop industry in order to improve employment. Jumping to services is not the solution.

Therefore, we can conclude that economic growth particularly pro-poor growth in terms of concentrating on agriculture and employment are important in order to reduce poverty. However, economic growth alone will not be sufficient to lift some people above the poverty line.

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EMPOWERMENT OF WOMEN THROUGH MICRO FINANCE IN THE UNION TERRITORY OF PUDUCHERRY

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ABSTRACT

This paper examines the role of Microfinance and economic empowerment of women in Puducherry region. It found that most of the rural women had a very low level of education. Their annual income was ranging around twenty thousands. They deposited money mainly in bank. The rural women possessed both productive and non-productive assets, which secure them during household risks and it was concluded that both social and economic better off the sample respondents are increased drastically after their participation in SHG's in Puducherry region.

KEYWORDS

Assets, Empowerment, Income, Microfinance, Self Help Groups

INTRODUCTION

Microcredit is about much more than access to money. It is about women gaining control over the means to make a living. It is about women lifting themselves out of poverty and vulnerability. It is about women achieving economic and political empowerment with in their homes, their villages, their countries".

- **Noeleen Hezyer**

The well being of people is unquestionably the ultimate object of all development efforts and the basic quest of human endeavor is always to seek a better quality of life. The quality of life of the citizens of a nation can be effectively improved only by raising the standards of living of the people on the street and in backward areas. Social empowerment in general and women empowerment in particular is very fundamental in achieving this goal. Worldwide, women and girls are poorer and more disadvantaged than men. "*Increasingly poverty has a woman's face*" (Human Development Report, 1995). The Human Development Reports of UNDP from 1990 onwards attest to the fact of growing feminization of poverty. Issues of poverty among women are quite distinct and complicated. Their general poverty conditions, morbidity, lack of food, drinking water, and sanitation facilities are some of the major issues that need attention. Female members of a poor household are often worse off than its male members because of gender discrimination in the distribution of food and other entitlements within the household. Gender inequality contributes to their vulnerability, with the result that women make up around 70% of the world's poorest people. In terms of every set of indices of development and socioeconomic status, women of all regions and strata have fared worse than men. In work, employment, earnings, education, health status and decision making powers, there is a clear differentiation between male and female entitlements. Women constitute 70 per cent of the world's poor population (1.3 billion). They produce 50 per cent of the food worldwide but receive only 10 per cent of the incomes (Kihali, B, 1995). Women's access to and ownership of resources is less than that being enjoyed by men and even among those women who own some property. In India, the plight of women is no better than their counterparts in other developing countries. As like other third world countries, women in India are still having limited or complete lack of access to education, property and economic rights, many women have few opportunities to lift themselves out of poverty and achieve self-determination. The girl child is under constant risk of being aborted through the misuse of modern technology. She is mostly deprived of schooling for sake of taking care of siblings at home. Since she is to be married off soon, investing in her education is a liability. Despite the fact that women are massively involved in almost all sectors of economy, their work and earnings do not count. Their activities as producers of the household are not reflected in National Income Statistics, thus, making their contribution unaccounted for. The empowerment of women is an essential precondition for the alleviation of poverty and the upholding of human rights, in particular at the individual level, as it helps to build a base for social change (DFID, 2000). The concept of 'empowerment' is complex as its meaning varies depending on the socio-cultural as well as political contexts and hence, it is difficult to furnish a unique definition of empowerment. Empowerment can be defined as the expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them (Kabeer, 2002). It is discussed in literature as a process of gaining power or a condition of being empowered at individual or group level (Dixon-Mueller, 1998). Women's empowerment is the process and the outcome of the process, by which women gain greater control over material and intellectual resources and challenge the ideology of patriarchy and the gender based discrimination against women in all the institutions and structures of society (Batliwala, 1994). Since the early 1980s women empowerment has become a key objective of development. Empowerment has been considered both an end and as a means of development. There has taken place a steady accretion of literature on the subject ever since the concept gained wide acceptance among academics and policy makers. During the recent past, the new type of institutions called microfinance/micro credit has been promoted to meet the credit needs of those groups who have been excluded from formal credit markets. It has come to be recognized and accepted as one of the new development tool for alleviating poverty through social and economic empowerment of the poor, with focus on empowering women. Micro-credit has been claimed to be a solution to integrate marginalized women into socio-economic activities, decision-making and poverty alleviation. Micro finance programmes for women are promoted not only as a strategy for poverty alleviation but for women's empowerment as well (Mayoux, 1996). Microfinance programmes is the leading strategy of poverty eradication through SHG's by raising the small loans to poor people for self-employment projects that generate income and accessing financial services of the poor especially for women beneficiaries. Apart from the economic benefits of women, microfinance are providing the path way for achieving women empowerment in the field of decision making in the family as well as in the society, skill up-gradation, political participation and etc.,

LITERATURE REVIEW

The empirical studies under review are mostly documented evidence in favor of the relationship women empowerment and microfinance. Even though we find large body of research towards examines these relationships, there exist gaps in state level studies which call for a fresh examination of the relationship. Against this backdrop we studied the relationship between women empowerment and microfinance in the Union territory of Puducherry with reference to Koodapakkam village. Kumaraja (2009) attempt to evaluate the performance of self help groups in TamilNadu. The study highlighted the progress of SHGs in India and Tamilnadu. It reveals that there has been steadily progress in the number of and amount of loan sanctioned. The study concluded that the timely and

regular check of micro credit through SHGs will contribute to a healthy progress and to the overall development of rural women. Sankaran (2009) made an attempt to analyze the trends and problems of rural women entrepreneur in India. The study highlighted the conceptual aspects of trends and problems of rural women entrepreneur in India. It concluded that women have creative ability, easy adaptability and ability to cope with setbacks. Shiralashetti (2009) examine the level of women empowerment in the study area and also to analyze women empowerment through SHGs. The study concluded that there is no doubt, the SHG movement in India has been working in the right direction, but it is necessary to empower more and more women in social, cultural, economic, political and legal matters, for the interest of the family in particular and the nation in general. Velmurugan, Ishfag Wani, Mrinalkumardass (2009) studied the economic empowerment of women SHGs engaged in catalyst activities and found that there is a continuous rise in level of income among the SHGs members after joining the groups. Gudanganavar and Gudanganavar (2008) examines the empowerment of rural women through SHGs, and highlighted progress of SHGs in India from 1992-1993 to 2006-2007. They also analyze the region wise progress of SHGs and employment of women through SHGs. They concluded that the development was possible without empowerment of women. Cyril Fouillet & Britta Augsburg (2007) pointed out that the level of spread of SHG with bank linkages in India. For this study used two yardsticks such as, the relative strength of households in SHGs measured by the ration of households in SHGs to total state and district household. They found that the significant variation occurred in the pace of microfinanciarization. Among the Tamil Nadu microfinaciarization was very low in Nilgiris (0.92), Coimbatore (1.80) and Karur (3.47) respectively. Kumar and Shanmugasundaram (2007) examined the Role of Women SHGs in Rural Poverty Alleviation with special Reference to Namakkal District of Tamilnadu. The main objectives of the study were to trace out the status of women in their ordinary business of life, to analyze the role of women SHGs and the promotion of rural employment generation and poverty eradication, to discuss the significance of women development programme in general and to explore the contributions of women SHGs in creating awareness among Indian women. The study found that the sample group members 95% of members were married and 5% are widows. The study also found that only 15% of members were involved in the saving attitude before joined in the SHG, after joined the SHGs all the women were involving in the saving habits. The study suggested Strong partnership between banks and NGOs and SHGs can be helpful to develop the SHGs. Vasimalai and Narender (2007) examined the role of microfinance in poverty reduction and assessed the impact of Kalanjiam model of credit programme through the objective of assess the economic development of the family through credit and non-credit operation, and assess the contribution made by Kalanjiam programme towards empowering marginalized groups of women and family member and social development. They found that around 51 per cent of members completely repay their old debt, the rise in the family income for observed in all the contexts. Nearly 55 per cent of members who existed more than five years in the groups, their housing conditions were improved at the same 48 per cent of members were covered through insurance. And also they found that around 74 per cent of the Kalanjiam members were found to have invested in assets after joining the Kalanjiam. Surajit Kumar Bhagowal (2007) access the success of grameen bank in women empowerment by providing loans, and to study the operational aspects of the centre and groups of the grameen bank. The study pointed out that the women's participation in income generation activities; it has changes their valueless life to meaningful life. Microfinance helps the women to stand their own feet, the broadened the horizons of their thinking and tried to find out ways to come out acute poverty. The study illustrated that even through the money circulation among the poor borrowers the drainage of loan money for health care, marriage, redemption of old debt still prevalent. Smita G. Sabhlok (2006) pointed out that the SHG movement is a microfinance movement, through that the movement can change the gender and power relation among the women. She found the women status was increased in the districts of Sonipat, and Kolar of Haryana and Karnataka states respectively through the field study in 2004.Schuler et al (2005) constructed women empowerment index with the support of various variables freedom of mobility of women ability to make small and large purchases, involvement in major household decisions, relative freedom from domination by the family, political and legal awareness involvement in political campaigning, protest and economic security and contribution to the family support. Littlefield, Murduch and Hashemi (2003) states that access to MFIs can empower women to become more confident, more assertive, more likely to take part in family and community decisions and better able to confront gender inequities. However, they also state that just because women are client of MFIs does not mean they will automatically become empowered. Karmakar (1999) illustrated that the different dimension of microfinance, creates access to income generation for the poor, support to education and training, and social capital, achieved through people organization building, support to people to move from poverty. By providing financial capital to poor person, their sense of dignity is strengthened and this can help to empower the person to participate in the economy and society. Against this background of this paper is made to investigate the impact of micro finance on rural women's economic empowerment.

OBJECTIVES OF THE STUDY

1. To investigate the impact of micro finance on rural women's economic empowerment with special reference to the Union territory of Puducherry.
2. To confer the suggestions to improve the economic empowerment of women.

METHODOLOGY

The study was purely based on the primary data collected from Koodapakkam village in Union Territory of Puducherry. A total of 60 respondents were selected through stratified random sampling method, from 12 SHG's. For sample collection, this study follows two criterions as that the SHG chosen for study has supposed to engage in activities for a time period of minimum 3 years and the respondents must be engaged at least for a period of two years time. Three indicators, such as personal income, savings and assets were considered to measure women's economic empowerment. Simple percentage and ratio methods are used to measure the impact of microfinance on rural women's economic empowerment.

MEASUREMENT OF EMPOWERMENT INDICATORS

Before studying the empowerment indicators, personal profile, the reasons for be a part of SHG's and the total amount of credit received by the respondents are discussed. In addition, debt repayment structure is also studied. Income of the respondents was measured in terms of money generated annually. Savings of the respondents was measured in terms of money saved annually. Different forms of savings, such as cash savings at home, savings in rural co-operatives and savings in bank were considered in measuring savings of the respondents. Asset of the respondents was measured in terms of money value of the assets at the time of interview. Both productive (cattle and goat) and nonproductive (jewellery, TV, radio and furniture) assets were taken into consideration in measuring the asset of the respondents.

RESULTS AND DISCUSSION

PERSONAL PROFILE, REASONS AND REPAYMENT OF LOAN BY THE RESPONDENTS

Data presented in Table 1 show that the respondents were 35 years old on average. They had on average up to three class of education and had three children. About six persons lived together in a single household. The respondents received credit of Rs.12093.72 on average to run different income generating activities. Table 2 explains the reasons why the respondents are joined in SHG's. Entrepreneur activities and loan becomes the major reason for the SHG's participation. The time of repayment of loan discussed in Table 3 which shows that only 15 per cent of respondents are repaying their debts after the duration of debt is over where as the remaining 85 per cent participants made their payment in time or in advance. The advance payment is made to receive more debt from the group, which is possible only if the earlier debts are cleared.

TABLE 1: PERSONAL PROFILE OF THE RESPONDENTS

Factors (units)	Mean
Age (years)	35.68
Schooling (years)	3.03
Children (number)	2.53
Household size (number)	5.97
Credit received (in Rs.)	12093.72

TABLE 2: REASONS FOR JOINING THE SHGs

Factors	In percentage
Entrepreneur activities	53.33
Loan	36.76
Savings	6.67
Others	3.33
Total	**100**

TABLE 3: REPAYMENT OF LOAN BY RESPONDENTS

Repayment schedule	In percentage
In Advance	21.67
On time	63.33
Late	15
Total	**100**

FINANCIAL RESOURCES AND ASSET CREATION OF THE RESPONDENTS

From Table 4, it is visualized that the respondents earned an amount of Rs.20000.00 on an average annually from the various sources. Fish vending contributes a major share in the mean income of the respondents where as tiny hotel and vegetables shops take up the second major source of income. In the literature, it is strongly argued that such kind of economic activities enabled woman to have a better access to basic needs and make important contribution to household decision making and ultimately have positive impact on women empowerment. It is described from Table 5 that annual, on an average, the total of Rs. savings of the respondents a major share of the respondents savings are deposited in the bank (Rs.3018.65) followed by in co-operatives (Rs.840.00), and cash in hand (Rs.743.00) respectively. The respondents used the savings during household risks, children's education and purchasing assets.

TABLE 4: INCOME OF THE RESPONDENTS FROM VARIOUS ACTIVITIES

Activities	Mean (in Rs.)
Idly shop	4050.35
Vegetables	4249.65
Fish vending	9160.10
Flower	1225.30
Milk	1314.60
Total income	**20000.00**

TABLE 5: ANNUAL SAVINGS OF THE SHGS MEMBERS

Annual savings	Mean (in Rs.).
Cash	743.16
Cooperative bank	840.19
Bank	3018.65
Total savings	**4602.00**

In the women studies literature, it is strongly believed that women's asset ownership positively influenced their empowerment at household level. It is suggested that women's involvement in increase their ownership of assets through increasing their own income reduced their vulnerability in several ways. Hence, the status of asset creation of women after their participation in SHG's and the types of assets created is studied in the Table 6 and Table 7 respectively.

From Table 6, it is clear that almost 97 per cent of the sample respondents create new assets after their participation in SHG's. Only a margin of 3 percent doesn't create any new assets after joining in SHG's. It is very clear that asset creation among women is increased after their engagement in SHG's. The type of asset creation, a productive asset or non-productive asset is an important issue. Table 7 provides answer for this question. It is shown here that only 43 percent of productive assets are created and the creation of non-productive assets ratio is recoded as 57 percent. This may be due the classification that made on productive and non-productive assets. As a whole, asset creation in increased among the women after their participations in SHG's.

TABLE 6: ASSETS OWNED BY THE RESPONDENTS

	In percentage
Asset created	97%
No assets created	3 %

TABLE 7: TYPE OF ASSETS

Types of assets	In percentage
Productive	43
Non-Productive	57

CONCLUSION

From the findings and discussion mentioned above, it can be said that most of the rural women had a very low level of education. Their annual income was ranging around twenty thousands. They deposited money mainly in bank. The rural women possessed both productive and non-productive assets, which secure them during household risks. This study provides evidence that economic empowerment of women can be improved through increasing their income, savings

and assets. The results also suggest the need to empower women through education. All together, it was conclude that both social and economic better off the sample respondents are increased drastically after their participation in SHG's.

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