

# INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, ECONOMICS & MANAGEMENT

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## ANALYSIS OF TOMATO MARKETING IN UASIN- GISHU COUNTY, KENYA

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ADMINISTRATOR  
MOI UNIVERSITY  
ELDORET

## ABSTRACT

This research was to examine tomato marketing in the Uasin-Gishu County with specific objectives of identifying factors affecting volume of tomato supply in the County. The study was conducted in Uasin- Gishu County, where both primary and secondary data on tomato production and marketing was collected. A total of 328 farmers and traders were interviewed, with a sample frame of all the tomato farmers and traders in the County. Both systematic random and purposive sampling techniques were used. Tobit and Heckman two stage Econometric Models were used to investigate factors affecting tomato market participation decision and quantity supply of tomato in the County. Sample markets were inefficient, characterized by oligopolistic market structure in Eldoret municipal market. Research findings suggest that an improvement in producers bargaining power through cooperatives is necessary to reduce the oligopolistic market structure. Structure of the markets indicates that licensing and years of tomato trade experience did not hinder entry into tomato market, but education and capital were barriers. Market information is the main problem. Based on the Heckman two-stage model, the study identified the main determinants of tomato market participation decision and its effect on the quantity supply. One of the most important variables influencing the decision to participate in tomato market is tomato production. Consequently, extension work should focus on encouraging farmers to participate in tomato production especially, there is a need to increase new varieties that are disease resistant variety and disseminate these technologies to potential areas. The other factors that adversely affects market participation is crop yield of the households. Keeping their specialization and social role in tomato production potential areas is necessary. Moreover, tomato production and extension contacts are the determinant factors of the quantity of tomato supplied. Therefore, policies that would improve tomato production capacity by identifying new technologies and create stable demand for surplus production would enhance farmers' decisions on marketable surplus. Non farming income and number of livestock affected the quantity of tomato supplied negatively. Thus, stakeholders have to make further investigations on cost and benefit of non-farm income and livestock production of farmers and let them know the result to make their decision. This implies that there is poor market information system, limited bargaining power of farmers, oligopolistic market structure in the tomato market. The findings suggests that, effective market information service has to be established to provide accurate and timely information to farmers and traders on current supply of tomato output, demand and prices at national and County levels.

## KEYWORDS

Heckman, Marketing, Tobit, Tomato, Uasin-Gishu.

## 1.0 INTRODUCTION

The giant berry traded abroad has a colorful history, and the story above is typical of a fruit that originated in one hemisphere, became popular in another, and returned back close to home for intense breeding that produced the tomato now familiar to most people today. *Lycopersicon esculentum* now enjoys worldwide distribution and is integral to the culinary disposition of multiple cultures. Tomatoes belong to the genus *Lycopersicon*, which is in the same family, Solanaceae, as potatoes. The resemblance betwixt leaves and flowers of potato and tomato plants seems to validate this taxonomic grouping. Two members of the genus *Solanum* (the genus which potato is classified in) have been successfully hybridized with members of the *Lycopersicon* genus. These are *S. lycopersicoides* and *S. pennellii*. Wild tomato species have tiny fruits, and only the red ones are edible. Tomato plants do not tolerate frost, and grow as annuals in colder regions. In warmer regions, they are perennial, and flower regardless of day length.

Tomato production in Kenya has increased considerably in the recent past with greenhouse production being adopted in many areas. The tomato (*Lycopersicon esculentum*) is popular with both small and large scale farmers for its edible fruits both for export and local consumption. Monsanto hybrids rank highly amongst the reputable brands associated with tomato production in the country. Tomato Anna F1 (Hybrid Tomato Anna) is an indeterminate hybrid bred and developed by the Monsanto Vegetable Seeds division for greenhouse production.

For a successful crop of Anna F1 tomatoes the grower needs to diligently observe certain practices at each stage notably; field selection, soil environment, land preparation, seed requirement, Nursery management, transplanting and agronomic practices. The two common growing systems in Kenya include Greenhouse and outdoor methods. Anna F1 is ready for harvesting in 70 to 75 days depending on weather. Usually the very first cluster bears the first ready fruits and marketing is done when the fruit is deep red in colour and firm.

## 2.0 LITERATURE REVIEW

## 2.1 MARKET AND MARKETING CONCEPTS

Market is an area in which one or more sellers of given products/services and their close substitutes exchange with and compete for the patronage of a group of buyers. A market is a point, or a place or sphere within which price-making force operates and in which exchanges of title tend to be accompanied by the actual movement of the goods affected (Backman and Davidson, 1962). Conceptually, however, a market can be visualized as a process in which ownership of goods is transferred from sellers to buyers who may be final consumers or intermediaries. Therefore, markets involve sales, locations, sellers, buyers, and transactions.

According to Kotler and Armstrong (2003), marketing is managing markets to bring about profitable exchange relationships by creating value and satisfying needs and wants. Lele and Jain (1997) defined the marketing concept, as philosophy of business, which states that customer's want satisfactions, is the economic and social justification for a firm's existence.

## 2.2. MARKETING SYSTEM

The concept of marketing system includes both the physical distribution of economic input and products and the mechanism of process or coordinating production and distribution (cited in Andargachew 1990). Branson and Norvel (1983) define the marketing system in terms of what is otherwise known as marketing channel. In broad terms, marketing system may be defined as the totality of product channels, market participants and business activities involved in the physical and economic transfer of goods and services from producers to consumers. Marketing system operates through a set of intermediaries performing useful commercial functions in chain formations all the way from the producer to the final consumers (Islam et al., 2001).

## 2.3. MARKETING CHANNEL

The term channel is derived from the Latin word *canalis*, which means canal. A marketing channel can be viewed as a large canal or pipeline through which products, their ownership, communication, financing and payment, and accompanying risk flow to the consumer (Backman and Davidson, 1962). Formally, a marketing channel is a business structure of interdependent organizations that reach from the point of product origin to the consumer with the purpose of moving products to their final consumption destination (Kotler and Armstrong, 2003). Abbot (1958) also define marketing channel as the sequence of intermediaries through which goods pass from producer to consumer.

## 2.4. FACTORS AFFECTING MARKET SUPPLY

The market supply refers to the amount actually taken to the markets irrespective of the needs for home consumption and other requirements. Whereas, the marketed surplus is the residual with the producer after meeting the requirement of seed, payment in kind, and consumption by farmer (Wolday, 1994).

Bellemare and Barrett (2006) estimated factors affecting sell of animals in Kenya and Ethiopia. They observed that the net purchase and net sales volume choices depend on expected market participation. The household head sex (female headed), age, family size, herd size, female TLUs, encumbered males, and small stock (sheep and goat) had significant and negative influence on number of animals sold. Unlikely, assets, land holding, other income, encumbered females, and average price of larger stock (camels and cattle) had correlated positively with number of animals sold.

Singh and Rai (1998) identify factors affecting marketed surplus of buffalo milk in Haryana. They observed milk production and price significantly affected marketed surplus positively while land holding and family size negatively affected.

## 2.5. APPROACHES TO THE STUDY OF AGRICULTURAL MARKETING PROBLEM

The most common approaches in marketing are the functional, institutional, and commodity approaches.

## 2.6. FRAMEWORK FOR EVALUATION OF MARKETING SYSTEM

The development of reliable and stable market system has been an important element in commercialization and specialization in the agricultural sector. In order to study the functioning of markets many researchers have applied the Structure-Conduct-Performance (SCP) paradigm. The SCP approach was developed in the United States as a tool to analyze the market organization of the industrial sector and it was later applied to assess the agricultural system and this framework was to evaluate the performance of industries in the USA (Wolday, 1994). Subsequently, it was applied in the functioning of markets in agricultural sector, and served as a tool to evaluate the performance of the commercial system. The framework distinguishes between three related levels; the structure of the market, the conduct of the market, and the performance of the market. The same approach has been used in the current study.

## 3.0 IMPORTANCE OF THE STUDY

This study covers the tomato production in the supply potential areas, and analyses the performance of the market through the evaluation of the marketing activities along the different marketing channels of the crop, which could be a major input to formulate appropriate marketing policies and procedures. This information would help the farmers, consumers, traders, investors, and Governments agents to make appropriate decisions in boosting the production of the crop instead of relying on imports from Elgeyo- Marakwet and Central Province, yet the County has enormous potential.

## 4.0 STATEMENT OF THE PROBLEM

The high potential areas of Kenya can produce enough tomato to meet the needs of the people in the deficit areas. However, the poor agricultural marketing system, disease, high input prices and unstable price of tomato discourage farmers to produce more. The increasing proportion of the population living in urban centers in the County and rising level of income require more organized channels for processing and distributing tomato. Tomato is a major vegetable crop produced by the few farmers in the North Rift. Despite its significance in the Kenyan economy and current income generating capacity of tomato as compared to its magnificent potential in the country it has not been given due attention by farmers and the Uasin-Gishu County government. In the County, the production of tomato is constrained by variable seasonal conditions. As a result, the variation in its supply on rural and urban market is considerable, hence massive importation from central Kenya and Elgeyo- Marakwet County. These calls for a study to investigate the factors affecting tomato supply to the market in the County of Uasin-Gishu and reducing the information gap on the subject and by contributing to work better understanding on improved strategies for reorienting production and marketing system for the benefit of all.

## 5.0 OBJECTIVE OF THE STUDY

1) To identify factors affecting marketable supply of tomato in Uasin- Gishu County;

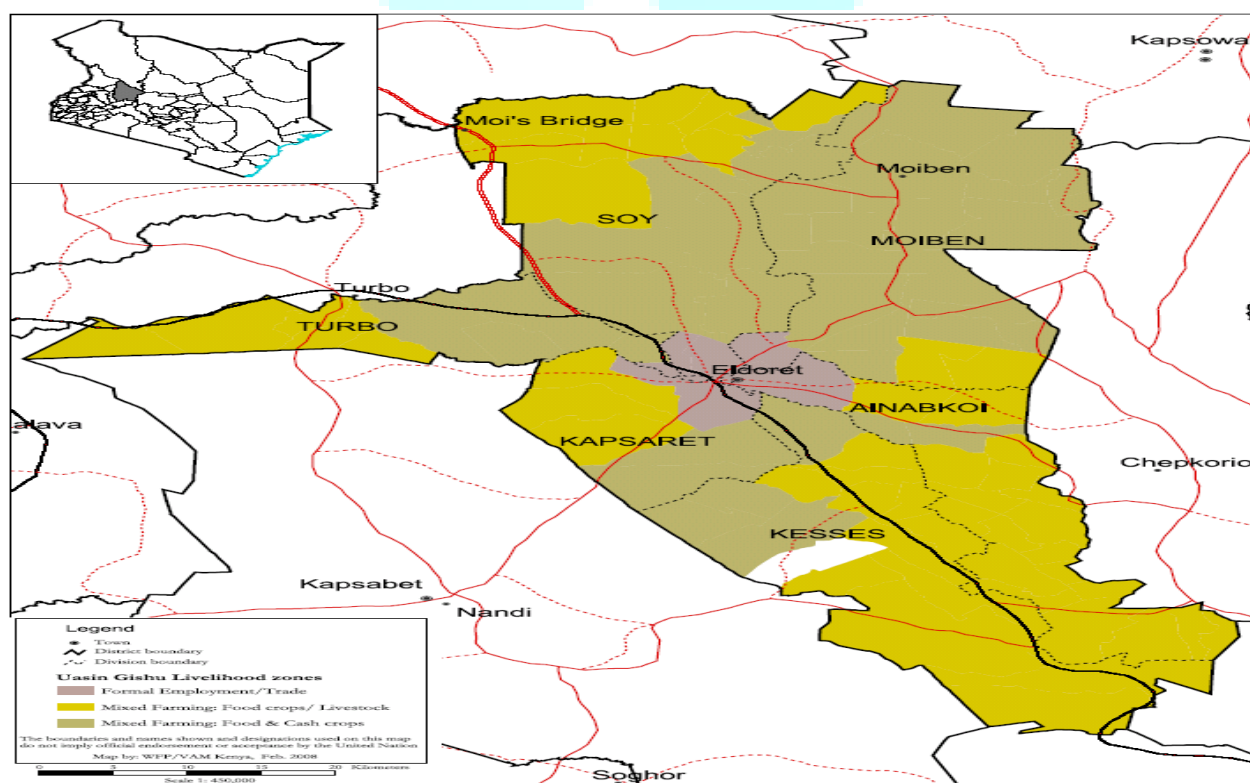
## 6.0. HYPOTHESES

H<sub>01</sub>: There are no problems affecting marketable supply of tomato in Uasin- Gishu County;

## 7.0 RESEARCH METHODOLOGY

### 7.1. STUDY AREA

FIGURE 1.1 MAP OF UASIN-GISHU COUNTY, KENYA



Source: DAO, 2012



## 7.2. SOURCES AND DATA REQUIREMENTS

The study utilised both primary and secondary data. The secondary data on different markets, prices, number of licensed tomato traders at branch offices of Municipal market. Primary data collected from farmers and traders focused on factors affecting market supply, size of output, access to market, market information, and annual income from non farming activities, livestock ownership, land holding, extension service contact, credit access, family size, production of food grain from farmers using pre-tested questionnaire.

## 7.3. SAMPLE SIZE

The sample frame of the study was the list of tomato producer households and traders in the County of Uasin-Gishu which have been documented at the Ministry of Agriculture and Eldoret Municipal market. From the six constituencies (Kesses, Kapseret, Ainabkoi, Moiben, Soy and Turbo) farmers were selected purposively based on the level of production. The household sample size of the study areas indicated below.

TABLE 7.1: NUMBER OF SAMPLE TOMATO FARMERS IN THE COUNTY

CONSTITUENCIES/DIVISIONS	NUMBER OF PRODUCERS	SAMPLE SIZE OF TOMATO FARMERS
Ainabkoi	73	37
Moiben	62	27
Kesses	58	25
Kapseret	66	27
Soy	56	23
Turbo	46	25
Total	361	164

Source: Own compilation, 2012

TABLE 7.2: NUMBER OF SAMPLED TOMATO TRADERS IN THE COUNTY

Markets in the County	Number of Traders	Sample size of Tomato Traders
Eldoret Municipal	134	28
Turbo	64	12
Moi's bridge	49	10
Ziwa	48	10
Langas	80	12
Kapseret	50	10
Huruma	68	12
Kapsoya	56	10
Moi University	48	10
Cheptiret	36	10
Burnt-Forest	38	10
Ainabkoi	34	10
Moiben	26	10
University of Eldoret	48	10
TOTAL	773	164

Source: Own compilation, 2012

The sites for the trader surveys were market towns in which a good sample of tomato traders exists. On the basis of flow of tomato, fourteen markets were selected, as the main tomato marketing sites in the County.

## 7.4. DATA ANALYSIS

Two types of data analysis, namely descriptive statistics and econometric analysis were used in analyzing the data collected from farmers and market surveys.

### 7.4.1 Descriptive analysis

Employed here were ratios, percentages, means, variances and standard deviations in the process of examining and describing marketing functions, farm household characteristics, market and traders' characteristics. The indicators used in this part of the analysis were structure conduct and performance (S-C-P) model.

### 7.4.2. Econometric analysis

In this part the supply function (Tobit and Heckman two stage models) were utilized.

#### 7.4.2.1. Factors affecting market supply

To investigate factors affecting tomato supply (a continuous-valued choice about how much quantity to sell) Tobit model was used. Because of the restrictions put on the values taken by the regressand, this model can be called limited dependent variable regression model. The data have a censored sample as dependent variable, 17.6% of household didn't supply tomato even if they produce tomato from the total of 361 samples, the data are censored, and Tobit estimation is relevant. If zero values of dependent variables were the result of rational choice of farmers, a Tobit model would be more appropriate (Abrar, 2004). Thus, maximum likelihood Tobit estimation (Tobin, 1958) was used in the analysis of factors affecting sales volume. One concern with the model; recall that in a Tobit with left-censoring at zero:

$$Y_i^* = \beta_0 + \sum_{i=1}^m \beta_i X_i + \mu_i, \quad i = 1, 2, \dots, m \quad (7.1)$$

Where  $Y_i^* = Y_i$ , if  $Y_i^* > 0$ ,  $Y_i = 0$  if  $Y_i^* \leq 0$  and  $Y_i = \max(Y_i^*, 0)$ .

Where  $Y_i^*$  = market supply of tomato (dependent variable)

$\beta_0$  = an intercept

$\beta_i$  = coefficients of  $i^{\text{th}}$  independent variable

$X_i$  = independent variable, and 'i' is 1, 2, ..., m

$\mu_i$  = unobserved disturbance term

The model parameters are estimated by maximizing the Tobit likelihood function of the following form;

$$L = \prod_{Y_i > 0} \frac{1}{\sigma} f\left(\frac{Y_i - \beta_0 - \sum \beta_i X_i}{\sigma}\right) \prod_{Y_i = 0} F\left(\frac{\beta_0 + \sum \beta_i X_i}{\sigma}\right) \quad (7.2)$$

Where  $f$  and  $F$  are respectively, the density function and cumulative distribution function of  $Y_i$ .  $\prod_{Y_i > 0}$  means the product over those  $i$  for which  $Y_i > 0$ , and  $\prod_{Y_i = 0}$  means the product over those  $i$  for which  $Y_i = 0$ .

As cited in Maddala (1997), Johnston and Dinardo (1997), proposed the following techniques to decompose the effects of explanatory variables into quantity supply and intensity effects. Thus, a change in  $X$  (explanatory variables) has two effects. It affects the conditional mean of  $Y_i$  in the positive part of the distribution, and it affects the probability that the observation will fall in that part of the distribution. Similar approach will be used in this study.

1. The marginal effect of an explanatory variable on the expected value of the dependent variable is:

$$\frac{\partial E(Y_i)}{\partial (X_i)} = F(Z) \beta_i \quad (7.3)$$

Where,  $\frac{\beta_i X_i}{\sigma}$  is denoted by  $z$ , following Maddala, (1997)

2. The change in the probability of market participation as independent variable  $X_i$  changes:

$$\frac{\delta F(z)}{\delta X_i} = f(z) \frac{\beta_i}{\sigma} \quad (7.4)$$

3. The change in intensity of quantity supplied with respect to a change in an explanatory variable among sellers:

$$\frac{\delta E(Y_i|Y_i^* > 0)}{\delta X_i} = \beta_i \left\{ 1 - \frac{f(z)}{F(z)} - \left[ \frac{f(z)}{F(z)} \right]^2 \right\} \quad (7.5)$$

Where,  $F(z)$  is the Cumulative Normal Distribution of  $z$ ,  $f(z)$  is the value of the derivative of the normal curve at a given point (i.e., unit normal density),  $z$  is the Z score for the area under normal curve,  $\beta_i$  is a vector of Tobit Maximum Likelihood estimates and  $\sigma$  is the standard error. The problem can be overcome using the Heckman's sample selection model where a Probit model for the participation or 'selection' equation is estimated and a regression model, which is corrected for selectivity bias, is specified to account for the level of the amount marketed. In this study, the Heckman's sample selection was also employed. First, the probability of participation was modeled by Maximum Likelihood Probit, from which inverse Mill's ratios were estimated. In the second-stage, the estimated Inverse Mill's Ratio (IMR) was included as right-hand variable in the corresponding tomato supply function. The Probit model is specified as:

$$Y_i = x_i' \beta_i + \varepsilon_i \quad i = 1, \dots, n \quad (7.6)$$

Where:  $Y_i$  is a dummy variable indicating the market participation that is related to it as  $Y_i = 1$  if  $Y_i > 0$ , otherwise

$$Y_i = 0$$

$\beta_i$  are the variables determining participation in the Probit model,

$x_i'$  is unknown parameter to be estimated in the Probit regression model,

$\varepsilon_i$  is random error term.

Then the parameters can consistently be estimated by OLS over  $n$  observations reporting values for  $Y_i$  by including an estimate of the inverse Mill's Ratio, denoting  $\lambda_i$ , as an additional regressor. More precisely selection model is specified:

$$Y_i = x_i' \beta_i + \mu \lambda_i + \eta_i \quad (7.7)$$

Where  $Y_i$  is the volume of supply in the second-step,

$\beta_i$  are the explanatory variables determining the quantity supply,

$x_i'$  is unknown parameter to be estimated in the quantity supply,

$\mu$  is a parameter that shows the impact of participation on the quantity supply,

$\eta_i$  is the error term.

An econometric Software known as "LIMDEP" was employed to run the models (Tobit and Heckman two-stage selection).

## 8.0 RESULTS AND DISCUSSIONS

This chapter deals with the descriptive statistics and econometric models, on identifying factors affecting tomato supply in Uasin-Gishu County.

### 8.1. SOCIO-DEMOGRAPHIC CHARACTERISTICS OF SAMPLE FARMERS AND TRADERS

In this part of the research, socio demographic characteristics of farmers (demographic characteristics, market, extension, credit and information access, farming and non farming experience, income, resource ownership, production and productivity, input used) and traders' demographic characteristics.

#### 8.1.1. Demographic characteristics of sample farmers

The demographic characteristics of farmers defined in terms of sex, religion, marital status, education level, age, and family size of household head are presented on Table 8.1. Sex of the sample households was comparable for the two research areas (Rural and Urban) and 94% of sample household were male. Regarding religion, 98% of the sample households are Christians. However, there is a statistically significant difference in religion in the two areas at less than 10%. With regard to marital status, 90% total sample respondents are married; however, 93% of the sample respondents in rural, which is greater than 84% of Urban are married household head. Table 8.1 shows that the chi-square test for marital status of the two areas was found to be significant at less than 5% significance level.

TABLE 8.1: DEMOGRAPHIC CHARACTERISTIC OF SAMPLE FARMERS (% AND AVERAGE) VARIABLES

Variables	N=64 Urban	N= 100 Rural	N=164 Total	$\chi^2$ /t-value
Sex -Male	95.3	92	94	1.182
-Female	4.7	8	8	
Religion- Christian	99.3	96	98	6.735*
-Muslims	0.7	2	0.8	
-Others	2	-	0.4	
Marital status - Single	2	10	5.2	9.135**
-Married	93.3	84	89.6	
-Divorced	0.7	0.1	0.4	
-Widow	4	-	4.8	
Education- Illiterate (%)	46	40	43.6	18.389***
-Primary (%)	29	43	34.8	
-Secondary (%)	17	2	10.8	
-Post secondary	8	15	10.8	
Age of household head	46 (13.02)	40 (15.4)	42.18 (14.16)	3.218***
Family size	7.71 (2.91)	6.33 (2.62)	6.56 (2.58)	1.041

N=sample size, \*\*\*, \*\* and \* significantly at less than 1%, 5% and 10% significance level, respectively.

Figures in parenthesis indicate standard deviation

Source: Survey result, 2012

The educational background of the sample household heads is believed to be an important feature that determines the readiness of household heads to accept new ideas and innovations. About 35% and 44% of the sample household heads were primary level holders and illiterate respectively. However, in Urban, only 46% and in rural areas about 40% of the sample households were illiterate. About 17% and only 2% had secondary level of education whereas 8% and 15% had joined post secondary school in Urban and Rural areas, respectively. The chi-square test indicates that there is a significant difference between the two areas at 1% significance level in their education.

The average age of the sample households was 42. The mean age of farmers in Urban (46) was less than Rural (40). The independent sample t-test revealed that there is difference at 1% level of significance on mean age of farmers in the two areas. This indicates that urban farmers were older than rurals. The available data indicates that average family size in each household is 7 members.

Table 8.2 depicts that the average years of farming experience for total sampled household were 24 years. The survey result indicates that Rural farmers (27 years) had more farming experience than Urban (23 years) and the independent sample t-test revealed that there was difference at less than 5% level of significance on the mean years of farming experience. The table suggests that farming is the main source of household income in both study areas. The average annual farming income of the sample household for the year 2012 was Kshs 25,000 per household.

TABLE 8.2: EXPERIENCE AND INCOME OF FARMERS

Variables	N = 64 Urban	N = 100 Rural	N = 164 Total	t / $\chi^2$ - value
Years of experience in farming (year)	22.63 (12.58)	26.68 (13.58)	24.25 (13.11)	2.413**
Annual farming income (Kshs)	30,000 (1791)	20,000 (1389)	25,000 (1639)	0.31
Non -farming experience (yes, %)	9	16	12	2.52
Non -farming experience (year)	4.64 (3.34)	5.47 (3.66)	5.35 (3.48)	-0.642
Annual non farming income (Kshs)	16,610 (1493)	7,380 (514)	11,690	2.32**

N=sample size, \*\* significantly at less than 5% significance level, Figures in parenthesis indicate standard deviation

Source: survey result, 2012.

From Table 8.2 one can also see that non-farming is the next major source for 12% of the total sample households. These households had a mean of 5 years on non-farming experience. However, the sample households have annual average of non-farming income of Kshs 11,690 per household. The data in the table shows that the average annual non-farming income (Kshs 16,610/household) in Urban was higher than in rural (Kshs 7,380/household).

This income was obtained from business and salary from working. Analysis of independent sample t- test revealed that there is significant difference on the mean of non-farm income between urban and rural areas at less than 5% level of significance.

The nature and development of markets and development centers for factors of production (land, labour), outputs, and extension service can play a major role in determining patterns of production and sale. Where markets are well-developed and competitive, farmers can be expected to respond largely to the profitability of alternative tomato production and supply options.

With respect to the distance of the markets, about the proximity or distance of, where they sold their tomato, the respondents were asked whether the market place is far or not from their home. Accordingly, the average walking time of total sample household was 1.15 hour.

### 8.1.2. Access to services

Access to service like credit, agricultural extension, and market information, which are the most important factors that promote production and productivity thereby increasing marketable surplus and ultimately farm income are shown in Table 8.3.

TABLE 8.3: EXTENSION AND CREDIT SUPPORT IN 2012

Variable	N = 64 Urban	N = 100 Rural	N = 164 Total	$\chi^2$ /t
Credit need (yes, %)	55.30	70.70	61.2	5.95**
Credit taken (yes, %)	11.30	11.10	11.2	0.003
Amount credit (Kshs)	15,930 (410)	18,180 (682)	16,810 (533)	1.095
Extension contact (yes, %)	63.30	6	40	81.141***

\*\*\* and \*\* Significant at less than 1%, and 5% significance level, respectively, N=sample size, Figures in parenthesis indicate standard deviation

Source: Survey result, 2012

However, from the total of 164 sampled respondents who were asked whether they need credit or not, about 61% of the respondents pointed out that they need credit and only 11% of them had received credit. More of the rural farmers (71%) needed credit than urban (55%) farmers. The chi-square result shows that there is statistically significant difference at less than 5% level on credit need. The average credit taken by 11% of the total sampled household in 2012 was Kshs 16,810 per household. The table shows that only 40% of the total sampled household had extension contact in relation to tomato production. The table makes clear also that more of urban farmers (63%) had extension contact than rural farmers (6%). According to the chi-square test there is a statistically different on extension services between the two areas at 1% level of significance.

TABLE 8.4: FARMERS' ACCESS TO PRICE INFORMATION

Variables	N = 64 Urban	N = 100 Rural	N = 164 Total	$\chi^2$
Information on nearby market price (Yes, %)	62	22	44	3.128*
Information on Eldoret market (Yes, %)	21	2	13	20.57***
Source of Information	Tomato traders (%)	7	24.4	75.03***
	Electronic media (%)	1	0.4	
	On Market (%)	43	19.6	
	Broker (%)	-	1.8	
	Other different Sources (%)	29	20.4	

\*\*\* and \* Significant at less than 1% and 10% significance level, respectively, N=sample size

Source: Survey result, 2012

It is assumed that producers and traders who have market information can decide how much to produce and market. However, Table 8.4 revealed that 44% of the total sampled households had tomato price information about the nearby market price before they sold their tomato. From the table one can see that more of urban farmers (62%) had nearby market information than rural farmers (22%). Only, 13% of the total sampled household was aware of the price in Eldoret municipal market. More urban farmers (21%) had information about market price in Eldoret municipal market than rural farmers (2%). The chi-square tests concerning nearby and in Eldoret municipal market price information indicate that there are statistical significant difference at less than 10% and 1% significance level, respectively. Asked about where they obtain the market price information, 24% and 20% of the total sampled households pointed out that they obtain price information from tomato traders and personal observation on market, respectively. More of the farmers in urban (36%) got information from tomato traders than rural (7%). About 43% of urban farmers pointed out that they checked price information by directly participating in the market themselves while only 4% of the rural farmers participated on the market. The rest of the sample traders indicated that they got information from different sources like neighbors, Radio/ television, brokers, and through the combination of tomato traders, personal observation. The chi-square test indicates that the statistical significant difference on source of market price information at less than 1% level.

### 8.1.3. Demographic characteristics of traders

Table 8.5 summarizes the demographic characteristics of traders in terms of age, family size, Gender, marital status, and religion.

TABLE 8.5: DEMOGRAPHIC CHARACTERISTICS OF TRADERS

Variable	Langas	Ziwa	Moiben	Huruma	Burnt Forest	Turbo	UoE	Moi University	Eldoret	Total	t/ $\chi^2$
Age	31 (8.35)	32 (8.74)	38 (11.61)	23 (3.46)	37 (8.55)	35 (7.78)	32 (7.66)	41 (8.50)	31 (1.41)	35 (8.97)	0.735
Family size	9 (2.64)	9 (5.86)	7 (1.41)	5 (1.15)	12 (14.65)	4 (2.68)	8 (4.73)	7 (4.11)	5 (2.62)	7 (5.83)	4.519
Trade experience	10 (5.42)	5 (1.53)	9 (9.19)	4 (3.21)	8 (3.36)	7 (4.85)	6 (3.63)	10 (4.65)	7 (5.86)	8 (4.83)	0.707
Gender- Male (%)	2	-	2	2	7	-	-	-	7	20	15.77**
- Female (%)	20	7	2	4	4	11	13	9	11	80	
Religion- Muslims (%)	2	-	-	2	2	2	-	2	-	11	48.22***
- Christians (%)	2	7	2	-	9	9	13	7	17	74	
- Others (%)	9	-	-	4	-	-	-	-	-	15	
Marital status- Single (%)	17	7	4	4	9	7	2	9	2	78	18.68
- Married (%)	4	-	-	2	-	4	2	-	4	17	
-Divorced/widows (%)	-	-	-	-	-	2	-	-	2	5	
Education- Illiterate (%)	-	-	2	2	-	4	-	2	-	14	43.4
-Primary (%)	9	2	2	4	4	7	7	7	2	47	
-Secondary (%)	2	2	-	2	7	-	4	-	2	33	
-Post Secondary (%)	-	2	-	-	-	-	2	2	-	6	

Source: Own Compilation

The survey result indicates that the sampled traders were on average 35 years old. Urban assemblers were the youngest of all other traders who were 31 years old on the average. Family size differs across the markets and the average family members are 7.

Traders had 8 years of experience on the average. Wholesalers (urban) are more experienced, and had much exposure to trade. The survey indicates that 80% of the sample traders were Females while 20% of them are males. However, the chi-square test indicates a significant difference at 5% significance level on gender distribution among markets. About 74% of traders were Christians while the remaining were 11% and 15% are Muslims and others respectively. The chi-square result indicates that there is a 1% significance difference on religion distribution among markets. From sample traders 78% were single, and 47% and 43% of the sample traders are within the level of primary and secondary school education, respectively and only 6% of the traders had post secondary level of education.

## 8.2. MAJOR PRODUCTION AND MARKETING CONSTRAINTS

There are a number of highlighted constraints that hamper further development of the tomato sub-sector in Uasin-Gishu County. The following production and marketing problems were the main issues indicated by various respondents.

### 8.2.1. Production and marketing problem of farmers

Given the current production levels and the production of tomato for market as a deriving motive, there appears that the farmers have market problem at certain seasons. However, the less possibility of improved production and expansion of tomato might decrease the amount of tomato sold and create problems in marketing.

Table 8.6 summarizes production issues that impact on tomato trade potential. It shows that primarily, tomato diseases were indicated as the major hindrance of production by 96% of the farmers. Diseases to tomato are also critical problems that affect quality. The other constraints identified were poor access to credit, lack of demand during glut periods and expensive chemicals. About 83%, 73.1% and 72% of sample farmers reported that lack of these respective inputs are causes for low productivity.

TABLE 8.6: PRODUCTION AND MARKETING PROBLEMS OF HOUSEHOLDS (% of farmers)

Variables	N = 64 Urban	N = 100 Rural	N=164 Total
Disease	96.7	96	96.4
Credit	72.0	99	82.8
Chemicals	56.7	95	72
Demand	60	61	73.1
Transportation	12	64	46.3
Price Setting	43.3	79	73.2
Fee	17	45	39
Supply	11.3	51	39.1

N= Sample size

Source: Survey results, 2012

Price setting is the major problem of marketing. Farmers could not set price for their product. The reasons stated by farmers are: usually price set by traders, more unstable tomato price than other crops, and lack of real price information from terminal market and no direct relation with traders. About 73% of the farmers' tomato was set by traders. Farmers had to pay a fee before tomato sold. This forces them to sell at farm gate at low price. About 39% of them responded that tax is the other major problem related to market. About 73% of the sample farmers responded that face is a demand problem, due to low quality of tomato caused by disease, increase in supply in other parts of the country and absence of regular buyers. Transport was also a major problem especially in rural areas during the rainy seasons. 64% of the rural farmers faced transport problems during the months of April to September of every year.

### 8.2.2. Marketing constraints of traders

Table 8.7 indicates the major problems faced by tomato traders: natural quality, capital shortage, fluctuation in demand, government support, supply shortage, access to credit, farmers' reluctance to sell, administrative problems, competition with licensed traders, roads, theft, competition with unlicensed traders, information flow, health, unstable prices, brokers, and perish ability are reported as the problems. Only some of the most important problems are briefly discussed below:

TABLE 8.7: MARKETING PROBLEMS OF TOMATO TRADERS (% of traders)

Problems	N = 100 Rural	N = 64 Urban	N = 164 Total
Natural Quality	94.4	90	89.1
Capital Shortage	94.4	90	87.0
Lack of Demand	83.3	70	78.3
Absence of Government Support	83.3	75	76.1
Supply Shortage	66.7	80	71.7
Access to Credit	72.2	80	69.6
Transport	44.4	75	57.17
Competition with unlicensed	27.8	55	34.8

N= sample size

Source: Survey results, 2012

About 89% of them confirmed that they faced quality problems due to disease and perish ability. From these results about 87% of the traders indicated that they face capital shortage to conduct and expand their business. This is due to lack of friendly lending institutions and most of the traders sold their tomato on credit to their buyers (other traders). About 78% of them reported that they face demand problem due to limited number of buyers, high supply of tomato from other parts of the country, and low quality of tomato due to disease, road and transportation problem, especially in rural markets. Their other problem is unstable price of tomato causes demand problem. The table revealed that 76% of traders complain that the government didn't support, and didn't focus on tomato trade (which is similar to other grain traders) by building refrigerated storage facility and credit facility. About 72% of them face supply shortage during certain months of a year due to many farmers relying on rain fed agriculture.

According to the traders, disease of tomato plant, drought and large number of buyers in the specific market are also the cause of supply shortage.

Access to credit was reported by the sample traders as limiting factor in operation and business expansion. The problems in acquiring loan occur from lack of collateral for micro finance and banks. Even if there is an access to credit, the complexity of process to get credit from micro finance, and high interest rate discourage loan. Tomato trade is seasonal and its profitability is doubtful for informal lenders. Therefore nobody wants to lend for tomato traders. Despite the fact that 70% of those interviewed reported did not obtain any credit.

The other infrastructural problem is that village markets are connected with the urban markets by poorly paved roads. Human portages and pack animals are the most frequently used to transport larger loads. Many of the roads to the village markets are difficult for vehicles during rainy season. In town, varieties of forms of transport are hired to get bags of tomato from farmers to wholesale points, including donkeys and trucks.

However, 52% of the traders reported that there was transport problem. Roads in Kesses, Kapseret, Soy, Moiben, Ainabkoi and Turbo constituencies are inaccessible for vehicles for 4 to 6 months. It was observed that tractors and donkeys are the only and best means of transport for traders and to move goods from place to place. From April to September tractors go to the market with winged, which help them to take out the trucks from mud. If the road is muddy, trucks will stay up to 3 days with their load in the road. Under such cases traders are forced to pay high transportation cost to cover the time cost.

All sample traders from rural markets reported that they could get transport only on market days and contract. Because of transportation problems, mobile traders couldn't reach to the market on time. Under such circumstance, farmers will be unable to sell their product and return it back home from the market.

The study indicates that lack of a uniform mechanism to enforce licensing requirements with regard to all traders is the most important problem in the tomato markets. About 35% of the traders reported that the absence of government control on un-licensed merchants. Although the law requires merchants to acquire a license from the municipal authorities in order to engage in tomato trading, licensed traders allege that this is not well enforced and provides an un-even playing field in tomato trading.

### 8.3. BARRIER TO ENTRY

**Capital:** Traders were constrained from receiving credit from micro finance for lack of guarantor and complicated process to get credit. In the survey about 87% (Table 8.7) of the sample traders respond that major problem to run their business was lack of capital. In interviews, they stated that their greatest constraint is access to finance, which they view as a constraining factor in expanding their scale of operations and achieving greater efficiency needed. In these cases, capital requirement discourage entry into tomato trading.

**Level of Education:** As indicated in Table 8.3, 47%, 33% and 6% of sample traders had received primary, secondary and post secondary schooling, respectively. About 14% were illiterate. This indicates that the level of formal education seem to be a barrier to entry because majority of tomato traders had primary level of education.

**Lack of experience:** From survey result more than 50% had been in tomato trading business for more than 5 years. Survey result reveals that, 43%, 35%, 13% and 9% of traders had 1-5, 6-10, and 11-15 and 16-20 years of experience, respectively (Table 8.9). The majority of traders found in over all markets that had 1-5 and 6-10 years of experience. There appears relatively high variation within a sample that it is from 2 to 20 years of experience. This may explain that there is no barrier to entry in tomato trade with respect to years of experience.

TABLE 8.9: EXPERIENCE IN TOMATO MARKETING

Years range	N=164 Total	Percentage (%)
1-5	70	43.5
6-10	57	34.8
11-16	22	13.0
16-20	15	8.7

Source: survey result, 2012

### 8.4. FACTORS AFFECTING TOMATO MARKET SUPPLY

The hypothesized determinants of tomato market participation and marketable surplus are summarized in Table 8.10, where 9 variables are continuous and the remaining 7 are dummy variables. The Tobit, Probit and Selection models results are depicted in table 8.11, 8.12 and 8.13, respectively.



TABLE 8.10: DESCRIPTION OF VARIABLES USED IN THE TOBIT AND HECKMAN SELECTION MODELS

Variable	Description	Types	Values
SOLDQUAN	Quantity supplied	Continuous	Amount of Tomato sold in kg
SOLMKTDI	Access to the market	Continuous	Walking minutes
AGE	Age of household head	Continuous	Number of years
T_TOMATO	Size of output (Tomato)	Continuous	Tomato production (kg)
T_LAND	Size of land holding	Continuous	Total land obtained in hectares
PRICE	Price of Tomato in 2012	Continuous	Average annual lagged price (Kshs)
FAM_SIZE	Family size	Continuous	Man equivalent
TLU	Number of livestock	Continuous	TLU exclude number of oxen
CROP_YIE	Productivity of food crops	Continuous	Bags per hectare
MKT_PART	Market participation	Dummy	1= sale, 0=otherwise
GENDER	Gender of household head	Dummy	1=male, 2=female
EDU_CAT	Education of household head	Dummy	1=yes, 0=otherwise
NONF_INC	Income from non-farming	Dummy	1=yes, 0=otherwise
CREDITOT	Credit access	Dummy	1=yes, 0=otherwise
EXT	Extension service	Dummy	1=yes, 0=otherwise
INF_NEA	Market information	Dummy	1=yes, 0=otherwise

Source: own computation, 2012

**8.4.1. Tobit result**

The Tobit model estimated results of the variables that are expected to determine quantity tomato supply are presented in Table 8.11. Out of 15 variables, 4 were found to significantly influence the quantity of tomato supplied to the market. Accordingly, market distance, production of tomato, extension contact and market information significantly affected the quantity of tomato supply.

**Access to market (SOLMKTDI):** Distance to market was expected to adversely affect total sales (both volume and participation). However, the opposite has been observed in the result. Access to the market was significantly and positively affected marketable surplus. An increase in one minute walking time indicated on increase in the quantity supplied by 0.0234 kg among the whole sample and 0.0233 kg among the seller group. As distance increased by a minute a probability of quantity supplied increased among non-sellers group by 0.0002%. The assumption that farmer who has nearest market that the positive impact on market supply, because markets tend to be important to make other business would entail expectation that quantity sale would decrease, with distance. However, it is likely that better non-farm employment opportunities in addition to farming activity for households close to the markets may account for their smaller reliance on tomato sale.

**Production of tomato (T\_TOMATO):** As hypothesized the regression coefficient of tomato production variable was positively related with quantity supplied and significant at 1% probability level. The marginal effect of output on quantity supplied was 0.9782 kgs among the whole groups and 0.9742 kgs among the seller group. Each additional kg of tomato production led to increase in the probability of quantity supplied among non-sellers group by 0.006%. The implication is that since tomato is the major horticultural crop for the majority (88%) of farmers, markets seemed the most important factor motivating farmers to produce and supply.

TABLE 8.11: MAXIMUM LIKELIHOOD ESTIMATES OF TOBIT MODEL AND THE EFFECTS OF CHANGE ON THE SELECTED EXPLANATORY VARIABLES ON INTENSITY OF QUANTITY SUPPLIED

Explanatory Variable	Estimated coefficient	Std. Error	t-ratio	Change among the whole	Change among tomato sellers	Change in Probability
CONSTANT	-1.9061	10.1576	-0.188	-1.9055	-1.8977	-0.00013
SOLMKTI	0.0234	0.0111	2.111**	0.0234	0.0233	1.54E-06
GENDER	-3.5102	4.2684	-0.822	-3.5091	-3.4947	-0.0002
AGE	0.0651	0.0776	0.840	0.0651	0.0649	4.28E-06
EDU. CAT	2.2348	2.2543	0.991	2.2341	2.2250	0.0001
NON. INC	-4.2804	2.882	-1.48	-4.2796	-4.2620	-0.0003
CREDITOT	0.0334	0.1385	0.241	0.0334	0.0332	2.19E-06
T_TOMATO	0.9785	0.0075	129.914***	0.9782	0.9742	6.43E-05
T_LAND	-1.7967	1.3743	-1.307	-1.7962	-1.7888	-0.0001
EXT	5.8791	2.0154	2.917***	5.8774	5.8532	0.0004
INF_NEA	5.8041	2.1655	2.680***	5.8023	5.7785	0.0004
ACTIV_LA	0.1635	0.8893	0.184	0.1634	0.1627	1.07E-05
TLU	-0.2663	0.3559	-0.748	-0.2662	-0.2651	-1.7E-05
OX	-1.9939	1.3075	-1.525	-1.9933	-1.9851	-0.0001
CROP_YIE	-0.2903	0.2226	-1.304	-0.2902	-0.2890	-1.9E-05
PRICE	-0.5653	0.9780	-0.578	-0.5652	-0.5628	-3.7E-05

Log likelihood function = -853.0278

Z= 0.0009

F(z)=0.9997

f(z)= 3.39

Sigma = 13.6957

Number of observations 164

\*\*\* and \*\* represents level of significance at 1% and 5%, respectively.

Source: own computation, 2012

Extension contact (EXT). As hypothesized, contact with extension agents positively influenced the quantity supplied and was significant at 1% significance level. On average, change in the extension contact of the household on the quantity of tomato supplied was 5.8774 kgs among the whole group and 5.8532 kgs among the sellers group. Extension contact of household heads increased the probability of quantity supplied among the non sellers by 0.04%. This suggests that access to extension service improved production and farmers could be aware of the various aspects of the production and productivity of tomato.

Access to market information (INF\_NEA): Information access is also another factor, which positively affects quantity supply at 1% significance level. On the average, the change in having market information of farmers on quantity supplied was 5.8023 kgs among the whole group and 5.7785 kgs among the sellers. Having market information increase the probability of quantity supplied among non-sellers by 0.04%. The implication is that obtaining and verifying information helps to supply more.

**8.4.2. Heckman two-stage result**

Tobit model implies that all producers are potential suppliers of tomato i.e. sellers may not be drawn randomly from the population and introducing a selectivity bias into the supply equations and that supply levels and market participation are influenced by the same variables and in the same way. However, if two decisions are involved, such as participation and volume of supply, a Heckman is desirable. This model allows the supplier to choose whether or not to participate in a particular market, and if so, to choose the volume of supply. Thus, a Heckman (1979) two-stage procedure is used in which the inverse Mill's Ratio is calculated from a Probit estimation of the decision to sell and introduced into the supply equations.

**8.4.2.1. Determinants of tomato market participation decision**

Results of the Probit model are summarized in Table 8.12. In the first stage, households decide whether they will be sellers, or not. The decision to participate in the tomato market was estimated by Probit maximum likelihood method. Of the potential variables i.e. a total of 12 potential predicted variables (5 dummy and 7 continuous) were selected and entered in to the Probit model. The Probit model was highly significant with a  $\chi^2$ -value of 213.1239 and correctly predicted 95% of the observed outcomes. The significant variables described as follows:

Production of tomato (T\_TOMATO): As hypothesized, tomato production influenced the farmers' decision to participate in tomato market positively. This is explained by the fact that tomato is the major horticultural crop for small farmers and shows that the higher the output, the higher is the farmer willing to participate in the market.

Productivity of food crops (CROP\_YIE): The productivity of food crops influenced tomato market participation negatively. The implication is that the low productivity of food crops increases tomato market participation, which is in line with the expectation that a family who faces low productivity in grain production will face food grain shortage that needs to be compensated through purchase of food grains. The cash source in turn can be from the sale of cash crops like tomato.

**TABLE 8.12: MAXIMUM LIKELIHOOD ESTIMATES OF PROBIT MODEL**

Variables	coefficients	t-ratio	Marginal effect
Constant	0.8772	0.524	4.498E-05
GENDER	-0.6341	-0.867	-1.015E-05
AGE	0.0008	0.078	4.307E-08
EDU_CAT	0.0388	0.097	2.067E-06
NONF_INC	-0.4552	-0.896	-8.546E-05
CREDITOT	0.0026	0.246	1.330E-01
T_PTOMATO	0.0649	6.233***	3.329E-06
T_LAND	-0.1959	-0.754	-1.004E-05
EXT	0.4788	1.218	2.556E-05
FAM_SIZE	-0.1022	-0.720	-5.242E-06
TLU	-0.0319	-0.658	-1.637E-06
CROP_YIE	-0.1174	-2.466**	-6.018E-06
PRICE	0.0113	0.073	5.801E-07

Log-likelihood function -9.756451

Restricted log likelihood -116.3184

Significance level 0.0000000

\*\*\* and \*\* indicate statistically significant at 1%, and 5% respectively

Chi-squared 213.1239

Predicted Success 95%

Number of observation 164

Source: own computation, 2012

**8.4.2.2. Factors affecting quantity of tomato sold**

The second stage estimation is summarized in Table 8.13 and it indicates that the decision of how much households sell. Each decision has been studied by using a selection model which included the inverse Mill's Ratio calculated from a Probit estimation of the decision to sellers into the supply equations. There are 14 potential explanatory variables (8 continuous and 6 dummy) including inverse Mill's Ratio (LAMBDA). Out of these 5 variables, production of tomato (T\_TOMATO), non farming income (NONF\_INC), extension contact (EXT), livestock (TLU) and inverse Mill's Ratio (LMBDA), had significant effect on quantity of tomato supplied. The F-test value 5.11 for the selection model was highly significant and the adjusted R2 was 99.07%.

Non-farming income (NONF\_INC): As hypothesized, non-farm income of the household heads negatively affected quantity supplied. On average, if a tomato producer gets non-farming income causes a 4.55 kgs reduction in the quantity of tomato supply. This may be explained by the fact that farmers who have better non-farm income will not tend to generate cash from sell of agricultural commodities (tomato) rather from their non-farm income.

Production of tomato (T\_TOMATO): As hypothesized the regression coefficient of tomato production variable was positively related with quantity supplied and significantly at 1% probability level which is the similar significance level. The result shows that a one kg increase in the tomato production causes a 0.9710 kgs increase in the amount of marketed supply. Total tomato production influenced the amount of marketed supply of tomato positively showing that farmers who produce more sell also more, which is consistent with the general expectation.

**TABLE 8.13: ESTIMATES OF SELECTION MODEL**

Variables	Coefficient	Standard deviation	t-ratio	Marginal effect
Constant	-5.5281	8.2933	-0.667	-5.5281
SOLMKTDI	0.0040	0.0096	0.419	0.0040
GENDER	-1.4928	3.7463	-0.398	-1.4928
AGE	0.0621	0.0667	0.932	0.0621
EDU_CAT	2.1165	1.9876	1.065	2.1165
NONF_INC	-4.5428	2.5851	-1.757*	-4.5428
CREDITOT	-2.5770	2.6278	-0.981	-2.5770
T_TOMATO	0.9710	0.0072	135.078***	0.9710
EXT	4.8113	1.7743	2.712***	4.8113
INF_NEA	-0.8691	1.9392	-0.448	-0.8691
FAM_SIZE	0.1661	0.7568	0.219	0.1661
TLU	-0.4932	0.2070	-2.383**	-0.4932
CROP_YIE	-0.2137	0.1898	-1.126	-0.2137
PRICE	0.0892	0.8135	0.110	0.0892
LAMBDA	7.7730	3.7503**	2.073**	7.7730

Inverse Mill's Ratio (LMBDA): The inverse Mill's Ratio affects the quantity supplied positively with 5% significance level and it indicates that in Heckman two-stage model, the correction for selectivity bias is significant.

The results of the Tobit differ substantially from those of the Heckman two-stage model. Many of the more sensitive results only emerge from the more general estimation method used. For example, market access and market information and these overloaded appear only in Tobit specification. Non-farming income,

crop yield and livestock ownership significant in the more general, in Heckman two-stage model. All of these qualitative differences suggest that the estimator the study introduced indeed adds real value.

## 9.0 FINDINGS

The finding reveals that there is poor market information system, limited bargaining power of farmers, oligopolistic market structure in the tomato market. Barrier to entry were education and capital. Market information system was not transparent among farmers and traders. However, all traders have information from different informal sources. Regarding the conduct of tomato market, pricing strategy of the traders indicated that 50% of traders set their purchase price. This indicates clearly that the tomato market is oligopolistic in nature. The result of this study has shown that the increase in size of livestock and farmers non-farming income affected the quantity supply of tomato negatively.

Tomato production is the most important and significant variable influencing the decision to participate in tomato market positively. However, food crop yield adversely affected tomato market participation. Moreover, tomato production and extension contacts are the significant determinant factors of the quantity of tomato supplied positively. However, non farming income and number of livestock are the significant determinants of the quantity of tomato supplied negatively. The coefficient associated with the inverse Mill's ratio was significant, indicating that the influence of unobservable factors in the farmers' decisions to participate was significant.

## 10.0 RECOMMENDATIONS

The following policy measures could be; enhancement of tomato producers' bargaining power through cooperatives, hence reducing the oligopolistic market structure in the municipal markets. Such measure also facilitates the regular supply of tomato at reasonable price to consumers.

To promote tomato market participation in a sustainable way, some policy implication is suggested to be addressed by those stakeholders (extension agents and juice extraction factories). A policy that would improve tomato production capacity by identifying new technologies and the causes of diseases problems. Creating stable demand for surplus production would enhance farmers' decisions on tomato production. There is need to improve extension system and technical supervision and follow up must be strong. Strengthening of market extension (linking farmers with markets, building marketing capacity of farmers, etc.) is necessary. Here, the stakeholders should further evaluate critically farmers cost incurred and benefit obtained from the livestock, none farming income and tomato production and then, let report them the result. Then, the farmers can decide where to invest by comparing and contrasting the results of the evaluation. Competitive market and market information services have to be established or strengthened to provide farmers and traders accurate and timely information on current supply, demand and prices at national and county levels.

## 11.0 CONCLUSION

Both farmers and traders should form strong cooperative societies to enable them to access credit and have a bigger bargaining power in marketing the produce for the benefit of all players. In times of glut production, the same co-operative societies should establish processing plants for value additions to reduce wastage and other losses in the sub-sector. Barriers to entry need to address to make the market more competitively.

The county government needs to upgrade major rural roads in all the six constituencies to ease transport problems in accessing the market. The main determinants of the quantity supply of tomato were analyzed using Tobit model. However the problem with the Tobit model is that it assumes that all producers are potential suppliers of a good and that volume of supply and market participation are influenced by the same variables in the same way. This may introduce a selectivity bias.

## 12.0 SCOPE FOR FURTHER RESEARCH

A research study needs to be done in the neighbouring Counties to establish the potential of Horticultural food market so as to utilize the Eldoret International Airport for exports.

## 13.0 ACKNOWLEDGEMENT

First and foremost let me praise and honour the almighty God for the opportunity and capacity given to me to realize my aspiration. Secondly, I am deeply grateful to the Ministry of Agriculture staff in Uasin- Gishu County and the agents of the various markets that facilitated the collection of primary data. Lastly, my sincere appreciation and thanks also goes to all my friends and relatives.

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**INDIAN DISINVESTMENT PERFORMANCE EVALUATION BETWEEN NDA & UPA GOVERNMENTS**

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**ABSTRACT**

*This study is aimed to identify and evaluate difference between two alliance governments in terms of Disinvestment implementation and performance, if difference persists what is the degree of that difference, study aims to identify challenges and methodologies adopted for Disinvestment implementation. Disinvestment Performance evaluated using multiple parameters like Disinvestment Target Taken, Methods used, Number of PSU's considered, percentage of target considered against Budget and fiscal deficit. Even though two different Indian political alliances are pursuing similar economic policies, interesting demarcation is found while implementing same economic policies and the degree of implementation. The aim of this article is to analyze the performance of privatization between two political alliances.*

**KEYWORDS**

Analysis of Indian Disinvestment, Indian Privatization, NDA disinvestment, Summary of Indian disinvestment, UPA disinvestment.

**INTRODUCTION**

Since 25 years India is run by group of political parties rather than one political party, India possess such two major alliances one is United progressive alliance led by "Indian National Congress" and other one is "National Democratic alliance" Led By "BharatiyaJanata Party". UPA alliance government is completing 10 years in the office as a ruling party. Even both alliances are different; Economic Policy such as Privatization is implemented by both the alliances, this study aimed at analyzing UPA's Disinvestment performance vis-a-vis with NDA government.

For analysis purpose, this article considered NDA's 5 years government during "1999-2004" versus UPA's "2009 – 2014" government, this study has not considered UPA-1 government disinvestment performance during 2004 to 2009 because of UPA's internal challenges from Left front parties against disinvestment. UPA-1 disinvestment track record is abysmal during 2004-2009. Common Minimum Program prepared by UPA-1 (i.e. 2004-09) is unfavorable to Privatization.

**PUBLIC SECTOR ENTERPRISES IN INDIA**

Since Independence, India has invested large amount of its revenue resources into building commercial enterprises. Over the period, India has built large commercial enterprises in various forms.

As per the Comptroller and Audit General of India (C&AG) report 2004-05

1. About 1200 public commercial enterprises controlled by union and state governments
2. Around 400 non commercial autonomous bodies and authorities owned or controlled by union or state governments.
3. Over 4400 authorities and bodies substantially financed from union or state revenues

**SIGNIFICANCE OF THE STUDY**

Since 35 years world is undergoing major economic reforms, specially reforms in terms of Business liberalization, Globalization and Privatization. Economic research has shown that economic reforms have helped in alleviating poverty (Himanshu). Many of the developing countries have aggressively persuaded LPG policy since 1980. India has started economic reforms in 1991 and shown faster economic growth compared to previous decades. However gap found in certain areas like disinvestment against assumed target.

This study gives knowledge on achievement of Indian Disinvestment and relative performance of two different governments. This helps economist to predict government disinvestment behavior and such behavior may be used during investment decision making.

**EVOLUTION OF PRIVATIZATION**

Even though privatization examples can be noticed during Nazi government in Germany, The credit of modern privatization goes to Margaret Thatcher government, Government of England has started privatization in 1979 with BP (British Petroleum), British Aerospace (1981), National Freight Corp (1982) and so on...Then the advantage of Privatization spread across the world and the privatization aggressively persuaded by south American countries like Chile, Brazil, Argentina. The advantage of privatization even spread to communist countries like USSR and China. In the last 35 years world has seen more than 1,00,000 firms undergone privatization (John Nellis, 2005). Even though Nazi government has started the privatization, It was more of Political in nature rather economic oriented (GermaBel), Thatcher government privatization was economic oriented not political one.

Indian Disinvestment (privatization) started because of the economical compulsions instead of economic vision policy. Economical compulsions such as high Fiscal deficit, Balance of payment crisis, current account deficits and International institutions are reason behind the economic reforms and privatization. The credit of initiating privatization in India goes to Shri P V Narasimharao government, government started privatization by selling 31 companies in its first attempt.

**PRIVATIZATION METHOD IN INDIA**

This study noticed interesting observations on usage of disinvestment method in India. Surprisingly, India follows a relatively different strategy to implement privatization. The first noticeable difference is in its name, India replaced internationally known "Privatization" word by "Disinvestment". As per the dictionary, the meaning of Disinvestment is withdrawal of Investment.

Internationally privatization implemented through various methods, among such methods, most popular are (RankoJelic – 2003), (ArbenMalaj – 2003)

1. Public Offers
2. Strategic Sale



3. Voucher privatization
4. Management Employee buyout (MEBO)
5. Sale through mutual funds and Financial Institutions

India mainly followed first two methods to implement privatization, in the beginning, government started privatization by issuing shares to mutual fund companies, later government adopted public offer model. During NDA regime, government adopted strategic sale method to implement privatization.

“Strategic Sale” is a sale which gives special importance to identifying appropriate private company to purchase and manage “Public Sector Enterprises” so that future of “Public Sector Enterprise” is secured and well managed.

“Public Offer” Sale is a sale where in government sell “Public Sector Enterprises” through initial public offer and sometimes selling shares in bulk quantity to financial institutions.

### INDIAN DISINVESTMENT PROCESS

Government Of India has maintained Disinvestment Process relatively more Transparent, any disinvestment proposal first need to get approval from CCD (Cabinet committee on Disinvestment” Then proceeded to Selection of advisor by competitive bidding advertisement, preparing information memorandum, signing of confidentiality agreement selected bidders, preparing draft share purchase agreement with the help of legal advisors, Preparing final draft with the consultation of Inter Ministerial Group, conducting Due diligence, conducting valuation, coordination with respective departments, inviting final binding financial bids.

After examination, analysis and evaluation, the recommendation of the IMG are placed before the core group of secretaries on disinvestment (CGD), whose recommendations are placed before the CCD for a final decision regarding selection of strategic partner, signing of the share purchase agreement and shareholders agreement and other related issues..

The disinvestment process has been guided by recommendation made by committee on disinvestment set up in 1993. In the year 1996, government set up disinvestment commission to design and executive the privatization of PSU's. Disinvestment process made more transparent, the department sends all its records to CAG for verification, as on date it is pool proof from corruption however issue are raised with respect valuation.

### NDA & UPA ALLIANCE GOVERNMENTS

#### NDA GOVERNMENT

National Democratic Alliance (NDA) led by BharatiyaJanata Party (BJP) was formed soon after 1998 general elections (12<sup>th</sup> Lok Sabha) to claim government formation at central level. The defeat of Indian National congress and Third front parties (A group of State level political parties and communist parties) resulted formation of NDA alliance. The NDA government lasted for 13 months until mid-1999 when the AIADMK withdrew its support to government.

The fall of NDA government resulted to 1999 general elections (13<sup>th</sup> Lok Sabha). In the 1999 general elections, the BJP led NDA won 303 seats out of 543 seats in the Lok Sabha, there by securing comfortable and stable majority. On 13<sup>th</sup> October BJP Leader Shri Atal Bihari Vajpayee took oath as Prime Minister of India third time and led the government until 14<sup>th</sup> Lok Sabha elections held during April-May 2004.

#### UPA-1 GOVERNMENT

United Progressive Alliance (UPA) led by Indian National Congress was formed soon after 2004 general elections (April-May 2004) to claim government formation at central level. UPA formation triggered because of electoral defeat of ruling BharatiyaJanata party led NDA government. UPA won 222 seats against NDA's 169 in the 543 member parliament. Left parties played a vital role in formation of UPA alliance; left front had 59 MP's (includes CPM, CPI, Forward Block and RSP). The other parties which supported UPA governments were Samajwadi Party - 39 MP's, Bahujan Samaj Party - 19 MP's...

The UPA-1 government was dependent on crucial support of Left front which had 59 MP's in the parliament, may be this was the reason behind not taking any disinvestment target during 2004 to 2009. Common Minimum Program – 2004 stated unfavorable to privatization. Left front has withdrawn its support due to nuclear agreement with USA. In the subsequent election, UPA developed an alliance with “Trinamool Congress” in the left front parties dominant west Bengal.

#### UPA-2 GOVERNMENT

The UPA-2 got re-elected in the 2009 general elections with the increment of 56 parliament seats. The other major highlights of 2009 general elections are NDA alliance support further dwindled, BJP's total parliament seats decreased to 112 from 138. The other important development is decline of Left Front from 59 seats to 24. The 2009 general elections gave a comfortable majority to UPA alliance. The absence of Left front in the UPA, encouraged government to carry on much needed economic reforms. UPA government started Disinvestment by taking yearly target in the annual budget.

#### PRIVATIZATION PERFORMANCE

Year	Number of PSE's considered per year	Dis't Target Budget Estimates	Actuals Disinvest -ment	Dis't Target, Percentage of Budget	Dis't Percentage of fiscal deficit	Budget Estimates (Actuals)
1991 – 92	47	2500	3038	2.2	8.0 (37792)	113102 (RE)
1992 –93	35	2500	1913	2.0	5.2 (36722)	124726 (RE)
1993—94	6	3500	Proceeds received in 94-95	2.43	0 (58551)	143872 (RE)
1994 -95	13	4000	4843	2.46	7.9 (61035)	162272 (RE)
1995-96	5	7000	361	3.9	0.6 (60243)	178275
1996-97	1	5000	380	2.48	0.6 (66733)	201007
1997-98	1	4800	910	2	1 (86345)	232068
1998-99	5	5000	5371	1.79	4.7 (113348)	279366
1999-00	4	10000	1860	3.3	1.7 (104717)	298084
2000-01	4	10000	1871	3	1.6 (118816)	325611
2001-02	10	12000	5658	3.3	4 (140955)	362453
2002-03	6	12000	3348	2.89	3.3 (145466)	414162
2003-04	9	14500	15547	3	12.2 (127149)	471368
2004-05	2	4000	2765	0.8	2.1 (126483)	497682
2005-06	1	No Tgt	1569	0	0.89 (174783)	506123
2006-07	0	No Tgt	----	0	0 (183518)	583387
2007-08	3	No Tgt	4181	0	2.6 (154966)	712671
2008-09	0	No Tgt	----	0	0 (457498)	883956
2009-10	5	No Tgt	23553	0	5.4 (432742)	1024487
2010-11	6	40000	22762	3.6	6.0 (373892)	1108749
2011-12	2	40000	13894	3.0	2.6 (516290)	1304365
2012-13	8	30000	23956	2.0	4.5 (521225)	1430825
2013-14	9	40000	5591	2.4	1.0 (542499)	1665297

(Note: for the year 2009-10, Disinvestment target assumed average percentage of 4 years of remaining period, i.e. 2.75% of budget actuals. Hence disinvestment target of 2009-10 is assumed as 2.75% of Rs 1024487 crores i.e. Rs 25612 crores. For calculation purpose)

(Dis't = Disinvestment, Govt = Government, Cr = crores, yrs=Years,)

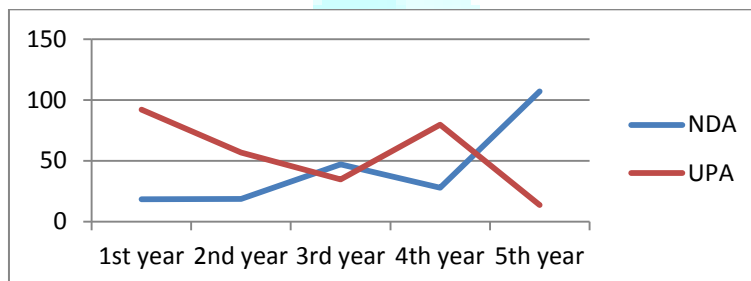


Type of Govt	No of co's for 5 yrs	Dis't Target Taken (in cr)	Dis't Target achieved (in cr)	Percentage Achievement Against Target	Average percentage of target of budget ( of 5 yrs)	Percentage achievement of fiscal deficit for 5 years
NDA 1999-00 to 2003-04	33	58500	28284	48.34%	3.098%	4.439% (5 yr deficit Rs637103cr)
UPA 2009-10 to 2013-14	30	175612	89756	51.10%	2.75%	3.76% (5 yr deficit Rs2386648cr)

### DISINVESTMENT TARGET FIXING

Either of the two different governments has not taken fixed percentage of disinvestment target against budget or fiscal deficit. NDA government has taken average of 3.098% disinvestment target of the budget for 5 years. UPA government has taken average 2.75% as a disinvestment target against the budget (average of 4 years). NDA government has taken 0.348% more target than the UPA government; however both the governments have preferred more targets in the initial years and gradually decreased the target as term approaches. It is not clear weather disinvestment target taken using the budget figures or estimated deficit.

### UPA and NDA Disinvestment implementation during ruling tenure:



Note:- X axis indicates percentage of achievement, y-axis indicates year in the given term. The behaviour of two governments, disinvestment achievement is different. In case of UPA, government has preferred achieving higher disinvestment in the initial years, while NDA has gradually moved from lower achievement to higher percentage of achievement as their term approaches. Performance Behaviour found opposite in nature.

### DISINVESTMENT METHOD USED BY UPA & NDA GOVERNMENT

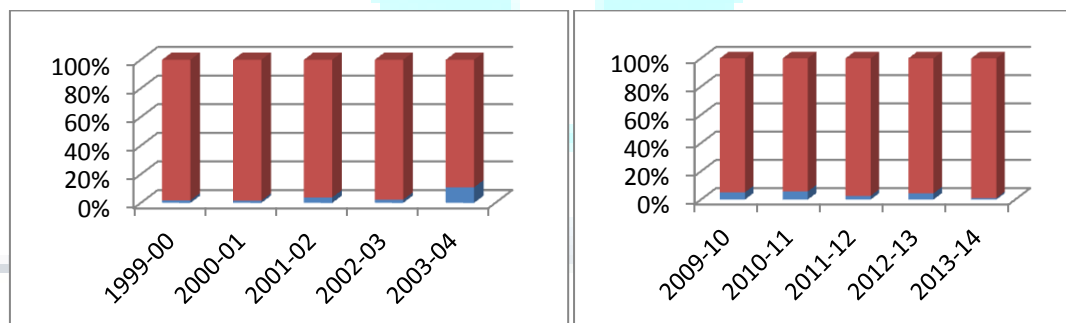
Disinvestment method used	NDA Alliance Government	UPA Alliance Government
Strategic Sale Method	12 + ITDC Properties	0
Public Offer, Bulk share sale to financial institution.	21	30
Total	33	30

**Companies Sold Through "Strategic Sale Method":** MFIL, BALCO, LJM, CMC, HTL, VSNL, IBP, PPL, HCI, HZL, IPCL, JCL and ITDC hotel properties.

NDA government used "strategic sale" method to sell 12 public sector enterprises and ITDC hotel properties located in different cities, apart from public offer method.

UPA government has not used strategic sale method to sell any "Public Sector Enterprise", It has sold public sector enterprises through only "Public offer" method.

### DISINVESTMENT PERFORMANCE INTERMS OF FISCAL DEFICIT



Both the alliance government as shown large dissimilarity in terms of disinvestment against fiscal deficit, large variation between each year found, NDA government has achieved 12.2% disinvestment against Fiscal deficit in the last year of its government term and it is ever highest percentage achievement against fiscal deficit since beginning of disinvestment. UPA government disinvested higher in the initial years of its government, it has disinvested 5.4 and 6% against fiscal deficit in the FY 2009-10 and 2010-11 respectively, later its performance gradually decreased against fiscal deficit.

### RECOMMENDATIONS

- This study identifies lack in any specific methodology followed to decide Disinvestment target. Our recommendation is Government required to adopt certain Disinvestment Target fixation methodology in terms of percentage either against estimated budget or estimated fiscal deficit.
- This study identifies a continuous gap in disinvestment achievement versus set target since 24 years irrespective of any kind of government. Hence our recommendation is setting up an "Expert committee" to design better and acceptable methodology and process for successful disinvestment implementation.

### LIMATATION

- This study has considered only 5 years of 2<sup>nd</sup> term of UPA government and excluded 1<sup>st</sup> term of UPA ruling.
- FY 2009-10 Disinvestment target is assumed as 2.75%, by taking average of balance 4 years UPA-2 government's target.

3. This article submitted on March 21, 2014, assuming that no more disinvestment is possible in FY 2013-14 due to official announcement of General Elections and model code of conduct from 5<sup>th</sup> March 2014.

## CONCLUSION

Some of the straight conclusion what we can draw from the above disinvestment performance of different alliance is, Left Front participation in the government will hold back disinvestment. Looking at the performance, NDA alliance is relatively more aggressive than the UPA alliance government. NDA government has used Strategic Sale method along with public offer sale however UPA government has preferred only public offer method. In terms of taking the target UPA government is lagging by 11.23% with the NDA government. Important point is the degree of disinvestment implementation differs between two different alliances but not policy.

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**DEVELOPMENT OF SUSTAINABILITY REPORTING: CASE STUDY IN PT TIMAH (PERSERO) TBK**

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**ABSTRACT**

*PT Timah (Persero) Tbk is one of company who produces sustainability reporting. Timah uses GRI Guidelines for its sustainability report since it published for the first time in 2006. The purpose of this research is to understand the development of sustainability report in PT Timah. This research used interpretive content analysis to analyse content of reports through meaning of words and sentences. The development of sustainability reporting can be seen through Institutional theory point of view, in order to see the symptoms. Data were acquired through documents and interviews. The interview was carried out with the actors who related directly into the process of producing sustainability report in PT Timah. The research shows that the implication of sustainability reporting for PT Timah: 1) data organization; 2) initiative and innovative; 3) more careful; 4) system recovery; 5) improve internal thinking. Through the lens of institutional theory, the main symptom that appeared in the process of sustainability reporting was Mimetic isomorphism (imitate other companies). Another symptoms, Coercive isomorphism signed by adherence to regulation, and normative isomorphism arises because there was influence by the professionals.*

**KEYWORDS**

Sustainability reporting, environmental accounting, interpretive content analysis, institutional theory.

**INTRODUCTION**

nowadays in Indonesia, as generally happen, natural resources are managed based on investment needs in order to achieve economy recovery. The management of natural resources is implicitly understood in the context of economic sense not in ecological and sustainable sense. Company activities that directly affect environment and natural resources do not pay attention to vulnerability aspect and the limitless of natural resources, society prosperity, workers, and environmental damage.

Explicitly, company should realize that environment is under threat. It is therefore company must have responsibility to work in a more extensive network for social environmental, economy and environmental system (Jones, 2010). Further, Suttipun and Stanton (2012) state that economic development have resulted environmental effect. Most companies have taken responsibility of environmental damage and responsibility by disclosing environmental activity and its implication to public. Ife and Frank (2008) indicate that crisis in nation is the result of unsustainable social system, economy, politics and reach the point of ecological crisis. These phenomena are serious problem that should be able to solve, for every side and disciplines, mainly for accounting.

Company needs information as a consideration to make decision, to be a going concern company. Information that needed not only related with financial, but also social and environmental activity. Companies should disclose their environmental activities through social and environmental disclosure as a result of their commitment for the environmental around their operation area. This paradigm is giving a meaning that company is not only a selfish entity and exclusive from society, but company is an entity that mandatory adapted to social cultural where they belong to. Company's concern is coming from its commitment to be responsible for any impacts of activities to social and environment.

Companies reported social and environmental activities in annual report, CSR report, or sustainability report. Eipstein and Freedman (1994) find that majority of shareholders want the company to disclose and report on corporate ethics, employee relations, and community involvement.

Sustainability report is a social and environmental activity disclosure that is provided separately from annual report. This report describes performance of the company while doing their activity for economy, social, and environment. Social and environmental information disclosure in sustainability report is a process to communicate information that related with environmental activity to shareholders. Externally sustainability report is one of commitment to create accountability for company to stakeholder. Internally, sustainability report is used to trigger improvement continually in company in order to guarantee company's sustainability.

**CONTENT ANALYSIS AS A WAY TO UNDERSTAND THE DEVELOPMENT OF SUSTAINABILITY IN PT TIMAH**

The research on social and environmental disclosure through sustainability and annual reports are indicated year-by-year, equal with number of companies that disclosed and the information they reported (Deegan, Rankin, and Tobin, 2002). This study is aimed PT Timah (Persero) Tbk, which is disclosure any social and environmental performance and report to public through sustainability report. As well as high quality disclosure should provide information explicitly for managerial judgments, assumption and estimation related with valuation and relevant projection model (Iatridis, 2003).

Furthermore, if environmental information disclosure is to be accepted and gives much relevant information for internal and external, it should have reliable quality. Quality of environmental information can be measured by environmental measure technique. Method or technique that mostly use in previous research is by content analysis and disclosure index.

**SUSTAINABILITY REPORTING IN A PERSPECTIVE OF THE INSTITUTIONAL THEORY: AN ADDITIONAL UNDERSTANDING**

Institutional theory explained the dynamics that happen in an organization which consist of group of people. The point of this theory is explained organizational behavior or decision will try to adapt with pressure from outside to maintain its existence.

DiMaggio and Powell (1983) identify three mechanisms of Institutional isomorphic change with the symptoms on it: 1) coercive isomorphism that comes from political influence and problem of legitimacy; 2) mimetic isomorphism resulting from standard responses to uncertainty; and 3) normative isomorphism, associated with professionalization.

The implementation of sustainability reporting in PT Timah was not separated with the dynamic inside organization. As DiMaggio and Powell (1983) explain about the mechanisms of Institutional Theory, PT Timah had experienced the symptoms of Institutional isomorphism. The aim of this research to understand the symptoms that appeared while Timah tried to implement Sustainability Reporting through interviews. Institutional Theory in this research is not aim to be a method analysis, but as additional information that in the development of sustainability reporting cannot be separated from these symptoms of Institutional Theory. Through this research, actually gives a deep understanding on how sustainability reporting can be seen from Institutional Theory, beside Legitimacy Theory and Stakeholder Theory.

### ON THE SIGNIFICANCE OF DEVELOPING SUSTAINABILITY REPORTING

CSR issues are accusing companies to disclose environmental and social performance for public in the form of social and environmental responsibility. Company's management realizes that company depends on harmonious relationship between company and community. Social and environmental responsibility is generally defined as sustainable commitment from company to take responsible for economics, legal, ethics and voluntary to the impact that appear from economic activity. Companies in Indonesia such as governmental and private companies have implemented three responsibilities (economic, social, and environmental) integrally in doing their business. Lako (2011) finds two motivations of company to disclose CSR. Firstly, business face pressures from external stakeholders that wanted companies in Indonesia applied Corporate Social Environmental Reporting (CSER) in their business and disclose their performance in company report. Secondly, companies start to realize for sacrifice economic resources to implement CSER program.

In implementing CSR programs, many companies use Sustainability Report as a way to communicate with stakeholders and public.

Global Reporting Initiative (GRI) defined Sustainability Reporting framework as a reporting system that enables all companies and organizations to measure, understand and communicate this information. Then Sustainability Reporting itself is the practice of measuring, disclosing, and being accountable to internal and external stakeholders for organizational performance towards the goal of sustainable development. Sustainability reporting also benefits companies whether for internal and external as explain below in Table 1.

**TABLE 1: INTERNAL AND EXTERNAL BENEFITS OF SUSTAINABILITY REPORTING**

Internal Benefits	External Benefits
<ul style="list-style-type: none"> <li>Increased understanding of risks and opportunities.</li> <li>Emphasizing the link between financial and non-financial performance.</li> <li>Influencing long term management strategy and policy, and business plans.</li> <li>Streamlining processes, reducing costs and improving efficiency.</li> <li>Benchmarking and assessing sustainability performance with respect to laws, norms, codes, performance standards, and voluntary initiatives.</li> <li>Avoiding being implicated publicized environmental, social and governance failures.</li> <li>Company performance internally, and between organizations and sectors.</li> </ul>	<ul style="list-style-type: none"> <li>Mitigating or reversing negative environmental, social and governance impacts.</li> <li>Improving reputation and brand loyalty.</li> <li>Enabling external stakeholders to understand the organization's true value, and tangible and intangible assets.</li> <li>Demonstrating how the organization influences and is influenced by, expectations about sustainable development.</li> </ul>

Source: Global Reporting Initiative G3.1 (2011)

Kolk (2004) explains about company's motivations for reporting sustainability report. According to Kolk (2004), the motivations are not only come form internal, but mostly credibility from grater transparency and reputational benefits has an important role.

Timah as largest tin mining company in Indonesia also has its motivation in reporting sustainability report. It comes from internal and external of PT Timah and mostly affected by other companies in many countries that already implemented sustainability reporting. According to Kolk (2004) that one of reason why company reporting is has ability to communicate efforts and standards. Timah prove it by deal with GRI Guidelines for the report framework and also other regulations related to disclose environmental and social performance through sustainability report.

### OBJECTIVES OF STUDY

The objective of this study is pointed out to requirement for PT Timah to disclose social and environmental performance through sustainability report, which related to activities that done by company directly affected natural resources, social and environment. Based on views laws, regulation and standard related to social and environmental disclosure, main purpose of this study is discovering and understanding progress of social and environmental disclosure through sustainability report of PT Timah. Sustainability reports are examined from released year and laws, and compared with sustainability report released by PT Timah.

### RESEARCH METHODOLOGY

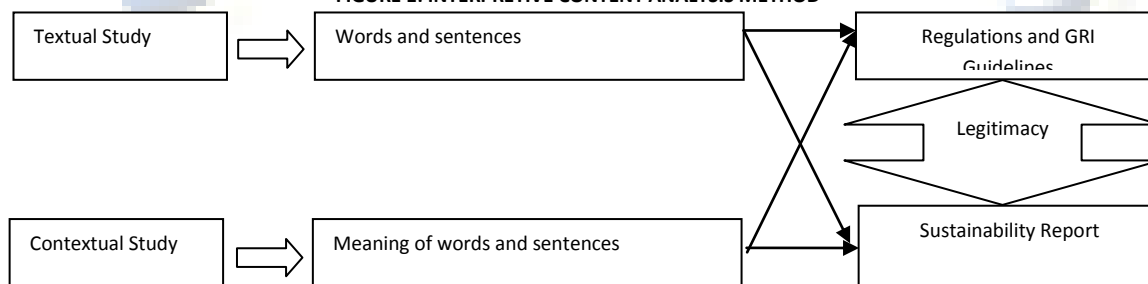
This research is a qualitative study with interpretive approach. Interpretive paradigm used to understand more about the development of sustainability reporting in PT Timah, when the publication of laws related to the implementation of CSR and when PT Timah began publishing sustainability reports for the first time. Case study research conducted in the interpretive paradigm when researcher looked at the object examined is unique and contains the original truth, thus positioning it as the case.

Researcher uses sustainability reports of PT Timah in period of 2006 and 2012. This research uses longitudinal study to see the period of regulation related to CSR and coincide with sustainability report that released by PT Timah. I also use interviews as other data source in order to get deep understanding on manage environment and get qualified information about the development of sustainability reporting in PT Timah.

In order to understand about the development of sustainability reporting in PT Timah, I use Interpretive Content Analysis. The way to process the data can be seen in Figure 1.

There are several stages conducted by researcher in analyzing sustainability reports of PT Timah by using Interpretive Content Analysis. Firstly, I examine the words and sentences that related to CSR disclosure in regulation and GRI Guidelines version 3.1. Secondly, I discover sustainability report and find the meaning of words and sentences, which is related to regulation and GRI Guidelines. Thirdly, I analyse the development of sustainability reporting from the meaning of words and sentences that I found.

**FIGURE 1: INTERPRETIVE CONTENT ANALYSIS METHOD**



**DISCUSSION****DEVELOPMENT OF SUSTAINABILITY REPORTING IN PT TIMAH**

In order to understand more about development of sustainability reporting in PT Timah, it can be seen through Interpretive Content Analysis method. As what will explain below, I see the phase of development according to years, which is in every year of reporting, has different themes.

Timah released sustainability report in 2006 for the first time. Timah is started to do their Corporate Social Responsibility before the CSR issue introduced. When Timah established, they have two missions, such as being economy agent and development agent. Related to the meaning of both economy and development agent, in message from President Director in sustainability report 2006: "The core of understanding, that in addition the Company has a business mission also has a mission to build a community on an ongoing basis in various aspects."

In 2004 and 2005, Timah actually had CSR report but without used GRI Guidelines. The reason for producing sustainability report separately can see in the interview result below with an informant who directly involved in the process of developing sustainability report in PT Timah.

*"The reason why Timah then start making sustainability report in 2006 is best practice. This is to follow what is in other places and look forward that sustainability report is an obligation and why not begin now, as well as a pioneer"* (Ali Darwin).

One of the requirements to achieve best practice in corporate sustainability report is in disclosing social and environmental responsibility to follow GRI Guidelines. Timah started to prepare its 2006 sustainability report was already use the guidelines from GRI.

In the beginning of publishing sustainability report in 2006, Timah also established CSR Committee. CSR Committee is responsible for the implementation of partnership programs with the aim of economic empowerment in Timah.

Small-scale mining is a recurring topic in every sustainability report in PT Timah. Illegal mining seemed to be a chore for Timah and become a significant problem.

*"Considering the impact of these unconventional mining operations in both the Company business prospects and on the well-being of the community at large, Timah could hardly stand by without taking any action. This would have represented a failure for the government in its role as the primary shareholder of a company which was established to utilize the country's natural resources for the greater benefit of its people"* (Sustainability Report, 2007:28).

According to disclosure above, Timah do not want to be hasty in taking action against illegal miners that operate in the area around Timah. Timah realizes that the absence of clear laws governing the illegal mining would be very difficult to take action in solving this problem. To that end, Timah choose a direct approach to the community to build synergy and harmony in manage tin resources.

*"In fact, the partnership approach has resulted in a reduction in the impact of unconventional mining operations as it has resulted in consolidation and a contraction in the number of such operations. By adopting this approach, the Company can now concentrate in improving productivity of its operations"* (Sustainability Report, 2007:29).

Timah prefers to resolve illegal mining problem without conflict with society. Timah decides to approach community as long-term decision. Timah is not only approach, but follow it up with the training, awareness rising, monitoring and action for the future. Through these activities, Timah can give knowledge to tin miners in order to increase their productivity by working closely with company. The purpose of this activity is the implementation of good mining management and environmental management.

Timah got Level B as the implementation of GRI Standard for sustainability report 2008 and had been checked by National Center for Sustainability Reporting (NCSR). This means, Timah is consistent in implementing social and environmental responsibility and report their activities through sustainability report.

In 2010 is the first year for Timah integrated sustainability report and financial report as Integrated Reporting. According to Ali Darwin, Timah follows business international trend in disclose information.

*"Timah makes integrated reporting since 2010, but the companies in the world have implemented starting in 2008. Even in South Africa, there is a regulation that requiring listed company to make integrated reporting. In 2010 demands from investors, that suggested that the report integrated. While the practice in other countries such as Philippines, Europe, Singapore, and America have published the report in the form of integrated report"*

There are three reasons why Timah decided to report in Integrated Reporting. Firstly, because of suggestion from investors. Secondly, Timah assume that Integrated Reporting better and practical. Thirdly, they want to emulate best practice. Timah also explain the reason for integrating sustainability report and financial report as following.

*"This integrated reporting reflects our belief as well as our firm commitment that in running our business, our economic, social, and environmental performance and the creation of values in all those aspects, represent a fundamental part that is inseparable from the Company, just as our performance in financial and operational aspects does. In addition, we feel convinced that by presenting an integrated annual report, the Shareholders and other stakeholders of the Company can obtain a clearer and more comprehensive picture as regards to the Company's overall performance in 2010"* (Annual Report, 2010:2).

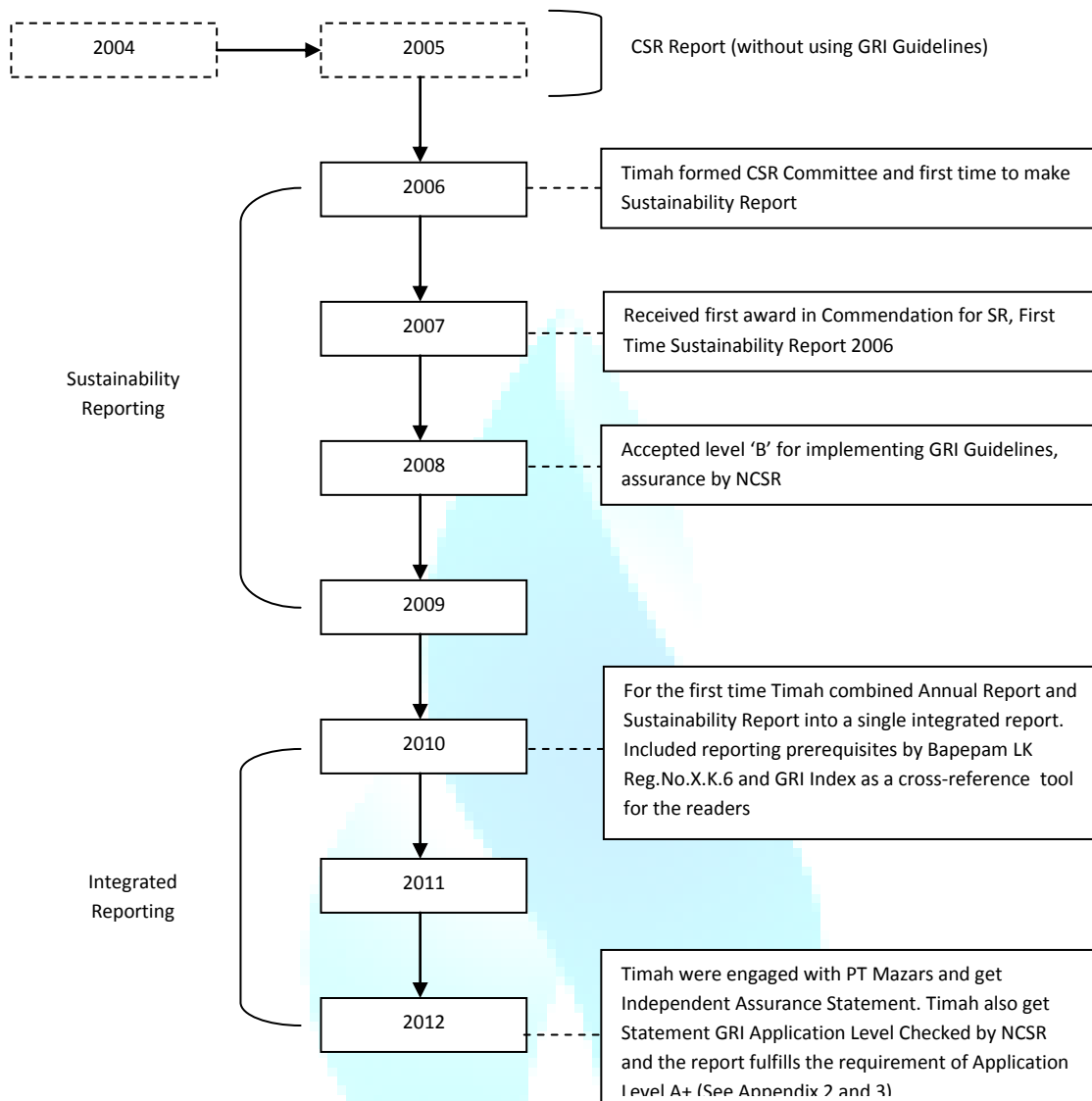
Annual Report 2010 is not just combine sustainability report and financial report into one report. Integrated Reporting of PT Timah has followed the GRI Guidelines and Mining and Metals Sector Supplement (MMSS) and has been examined by NCSR. At the end of the report we can find a cross-reference between GRI Guidelines with Mining Metal Sector Supplement and regulation of Indonesia government (Bapepam Requirements Index-LK No. X.K.6).

In order to see a clear picture about development of Sustainability reporting in PT Timah, it can be seen in Figure 2.





FIGURE 2: DEVELOPMENT OF SUSTAINABILITY REPORTING IN PT TIMAH



### SUSTAINABILITY ACTION THROUGH SUSTAINABILITY REPORTING

As Corporate Citizenship doing a survey to respondents in around Asia, Canada, United States and United Kingdom in early 2012 about Sustainability Report, here is the result as following.

*"Outside of the sustainability reporting world, there are often skeptics about why companies report – 'they do because they have to', or 'it was just green wash' might be commonly expressed views. But interestingly amongst our respondents, 'demonstrating compliance' and 'promoting the corporate point of view' come some way down the list of reason to report."*

Based on these results, there has been a paradigm shift in sustainability reporting in International world. Reason 'must' in sustainability reporting is no longer valid to use when asked why company makes sustainability reporting. Similarly, when Timah decided to create a sustainability report in 2006. Timah considers that the writing of the report is not intended to provide evidence that they have been doing a lot of things related to community. Timah see that sustainability reports are made as accountable to the public based on the attitude of transparency as a part of the company according to the principles of good corporate governance.

The company is required to do social and environmental responsibility since regulated in Law No. 40/2007 article 74 about Limited Liability Companies. Timah has substantially implementing social and environmental responsibility before Corporate Social Responsibility in Indonesia echoed. It can be said that Timah has been implementing CSR prior to the law.

Since Timah published their sustainability report, Timah already used GRI Guidelines and Mining and Metal Sector Supplement. Although when first time Timah prepare to publish sustainability report, they found variety obstacles, one of them was human resources that were not ready to adapt this report.

*"The constraints of making sustainability report because GRI demand so much things. Timah as tin mining company has many things also to reckoned with. For example, the use of water and electricity, essentially a compilation of data considered very difficult. There is metallurgy unit, which has good data arrangement, and if the data from other units are not available, then this unit can represent. Then, data about number of hours for boat ramp and also working hours should be taken into account and reported" (Doya).*

GRI as an international institution want the content of the report and all the details have been spelled out in the guidelines. Belongs to Timah, GRI demand is a challenge and a good thing if Timah managed to fulfill. Ali Darwin also delivered several obstacles when he made sparked the first sustainability report of Timah.

*"The problem, people do not understand what is contained inside the report. In the presenting data not all people agree because they consider that it is not a mandatory report. Another obstacle, the data scattered everywhere and Timah do not have a system yet."*

After Timah implemented first sustainability report in 2006, it brings many positive impacts to Timah, especially in terms of administrative procedures for Timah itself, such as data storage as well as encourage each unit to perform data collection.

*"The procedure for administration of the company brings the good impact for performance sales. For example, waste, if we know how much we waste, so we can reduce costs. Through GRI index requires company to pay attention to many things. For example, Timah activities are mostly do in the offshore, automatically workers are also required to have a diving license for their safety" (Doya).*

Through the statement from Informant A, it appeared that the benefits of good data collection had a positive impact to Timah in economic performance. In summary, the implications of sustainability reporting for Timah describe as follow, based on the results of the analysis of the development of sustainability report in 2006-2012, by using Interpretive Content Analysis and interviews.

**Data organization.** Automatically, complete data is needed from various numbers of work units, in order to be disclosed in sustainability reporting. At the first time they started to make sustainability report, Timah did not has organized data, and after adopted guidelines from GRI, Timah is required to have a comprehensive database. Finally, Timah can organize their database very well and it can make them easier to report the activities from various unit of work later in the next report.

**Initiative and Innovative.** Sustainability reporting help Timah to inform the report readers and related parties about the innovation from company, for example in developing renewable energy resources as the alternative energy to replace unrennewable resources. Timah is still on going to innovate alternative energy such as palm oil. Moreover, Timah also has initiative to support saving energy action and cost efficiency by minimizing duty trip that using transportation and replace it with using technology of communication to fulfill employee needs. The action for saving environment also done by Timah, related to reduce the number of using papers to save trees. It can be seen when I correspondence with Corporate Secretary, in the end of e-mail I always find these words to remind and persuade us to use paper necessarily: "Consider the environment before printing this e-mail. Save trees, Print Only When Necessary."

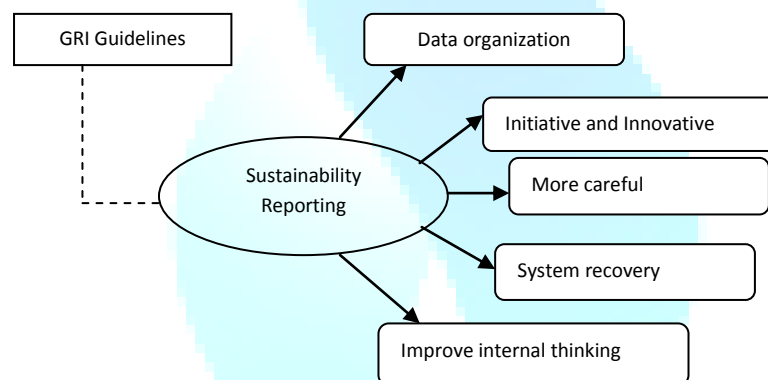
**System recovery.** One of the implications from the implementation of sustainability report is system recovery. As the example, Timah disclose in Annual Report of 2011 that in 2012 commit to stipulate number of CSR funds automatically by using scoring system. This system aims to make CSR program run maximally and reach more community needs, and Timah has a commitment to not give cash to community.

**More careful.** Many people will read the report, even they are investors, media, communities, and also stakeholders that directly related with Timah. They will give assignment for company's performance. So that Timah should be more careful in disclosing and then reporting their activities related to economic, social and environment.

**Improve internal thinking.** The risks faced by Timah and the opportunities always presented in every sustainability report, so that these risks and opportunities will stimulate their internal thinking to deal with both things. According to Sukoharsono (2011) Green Accounting reporting (including Sustainability reporting) enables a company to demonstrate its commitment to effectively managing such factors and to communicate its performance in these areas. It can be said that sustainability report roles as a reflection for Timah to be better in the future.

PT Timah (Persero) Tbk has a great deal of concerns towards environmental protection and responsible to society. Its top priorities are to be environmentally friendly and keep walking with its stakeholder and shareholder in a harmony. Sustainability reporting for Timah is not only as a media to publish their CSR programs, but it has implication to the company, which has been mentioning above. Previous research by Elewa (2007) finds by applying general environmental standards, there will be a common language understood by all companies across borders, thus reducing chaos, then adhering to environmental standards will also increase the quality of organizational accounting and management systems whereby profit growth, development and sustainability can be achieved.

FIGURE 3: IMPLICATION OF SUSTAINABILITY REPORTING FOR PT TIMAH



## FINDINGS AND CONCLUSION

PT Timah is chosen because this mining company is one of the first companies in Indonesia that published its sustainability report. In this way, Timah be a trendsetter among other companies in Indonesia that report CSR program through sustainability report. In addition, since the beginning of the sustainability report, Timah had used GRI Guidelines for reporting format and content of the report. No wonder if Timah awarded each year in category related to Sustainability Reporting.

Developments were following; it has been generating a lot of understanding for researcher. When I see from the side of sustainability reporting, there are some positive implication posed for Timah, among others: 1) organizing data for each unit of work; 2) stimulate the initiative and conducted a series of innovations; 3) recovery system in giving funds for CSR program; 4) more careful; and 5) improve internal thinking.

Associated with Institutional Theory, there are some symptoms when I conducted observation and interviews regarding the development of sustainability reporting. Mimetic isomorphism is the main symptom that appears, marked by the actors imitate the practices of other countries in applying sustainability report because they think is a best practice. Coercive isomorphism is characterized by adherence to the laws issued by government. Finally, normative isomorphism arises because of the influence from the professionals, which Timah marks collaborated with professional bodies such NCSR and PT Mazars.

Social and environmental responsibility by Timah is not meaningful philanthropic or just providing funds intended to improve the welfare of society and environment. Timah do more than that, regardless of the GRI Guidelines that asking a lot of things to be done and reporting. Timah educate the surrounding community to not rely on the tin as their livelihood.

Timah and the illegal mining problems cannot be separated. It is a challenge for Timah to figure out this problem. Then, related with illegal mining problem, what is actually GRI Guidelines role so far? I see through observe the documents and interview results that GRI Guidelines and even Mining and Metal Sector Supplement cannot resolve this problem. Moreover, internal initiatives and decision from Timah are really needed to solve this problem such an illegal mining beside the role of law.

## LIMITATIONS

Limitation of this research, researcher not involved directly in the process of making sustainability report, so the symptoms of Institutional Theory is not much that can be observed. The symptoms of Institutional Theory in this research are detected through the observation of documents and interview results.

## SUGGESTION

Future research may take this research as a reference for searching other companies with different industry characteristic, because this research is not intended to be generalized and will certainly find more interesting findings if studied elsewhere. Institutional theory in this research could be developed for further

research to make this theory as an analytical tool. Further research might explore the meaning of Corporate Social Responsibility by Timah or any other company by directly involve to company in order to see the process and participate, so it will be able for CSR to be framed more deeply.

## ACKNOWLEDGEMENT

I owe my deepest gratitude to Mr. Ali Darwin as informant from National Center for Sustainability Reporting (NCSR) Indonesia, who directly involved in development of sustainability reporting in PT Timah (Persero) Tbk. He gives many information and knowledge about sustainability reporting. I also thanks to Mrs. Doya Sianturi, who also provides her time to share her experience in PT Timah.

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**TRENDS IN ECONOMIC CONTRIBUTION OF TOURISM INDUSTRY TO INDIAN ECONOMY****HARINI K.V****RESEARCH SCHOLAR****DEPARTMENT OF STUDIES IN ECONOMICS & COOPERATION****UNIVERSITY OF MYSORE****MYSORE****INDIRA M****PROFESSOR****DEPARTMENT OF STUDIES IN ECONOMICS & COOPERATION****UNIVERSITY OF MYSORE****MYSORE****ABSTRACT**

*Indian tourism sector is one of the most vibrating sectors of the economy. It is not only a significant contributor to GDP and foreign exchange reserve of the country, but also it provides widespread of employment. Tourism sector can also be considered the backbone for allied sectors, like hospitality, civil aviation, and transport. Sensing the importance and worth of the sector, Indian Government has invested abundantly for the development in this sector. It has been partially successful with increase in foreign tourist arrivals over the last decade, courtesy "Incredible India Campaign". World over tourism has been recognized as one of the important instruments of economic development and employment generation, particularly in remote and backward areas. It is the largest service industry globally in terms of gross revenue as well as foreign exchange earnings. Tourism can play an important and effective role in achieving the growth with equity objective which India has set for itself. The growth in the tourism sector emerged as a very important contribution to the national economy and contributed quite a lot for employment generation in various tourism related activities. The present paper analyzes the trends in the development of tourism industry in India and the economic contribution of this sector to Indian economy in the context of changes in the macroeconomic policies.*

**KEYWORDS**

Foreign Exchange Earnings, GDP, Employment Generation.

**INTRODUCTION**

Tourism has emerged as one of the world's largest service industries with sizeable economic benefits and immense opportunities. With the emergence of technological advancement, and competitiveness in service-based industries the tourism sector is playing a vital role in contributing to improve gross domestic product (GDP) and creation of employment across the world economy. This accelerating tourism industry is proved to be one of the important drivers of growth and prosperity, employment generation, increase in national income and improvement in balance of payments of Indian economy. Indian tourism sector is one of the most vibrating sectors of the economy. It is not only a significant contributor to GDP and foreign exchange reserve of the country, but also it provides widespread of employment. Tourism sector can also be considered as the backbone for allied sectors, like hospitality, civil aviation, and transport. Sensing the importance and worth of the sector, Indian Government has invested abundantly for the development in this sector. It has been partially successful with increase in foreign tourist arrivals over the last decade, courtesy "Incredible India Campaign".

Tourism is the largest service industry in India, with a contribution of 6.23 percent to the National GDP and 8.78 percent of the total employment in India. India attracts more than five million foreign tourists and 562 million domestic tourists annually. The tourism industry in India generated about US \$100 billion in 2008 and that is expected to increase to US\$275.5 billion by 2018 at a 9.4 percent annual growth rate.

According to the World Travel & Tourism Council, (WTTC) India will be the world's leading tourism hotspot, having the highest ten-year growth potential. The Travel and Tourism Competitiveness report 2007 ranked tourism in India 6<sup>th</sup> in terms of price competitiveness and 39<sup>th</sup> in terms of safety and security. As per the Travel & Tourism Competitiveness Report 2009 by World Economic Forum, India has been ranked the 14<sup>th</sup> for best tourist destination and for its natural resources, 24<sup>th</sup> for its cultural resources, as it has most of the World Heritage sites both natural and cultural, rich fauna & flora and strong creative industries in the country. In air transport network India has bagged 37<sup>th</sup> rank for itself.

Indian tourism industry is ranked 5<sup>th</sup> in the long term (10 year) growth and is expected to be the second largest employer in the world by 2019. The Tenth Five Year Plan mentions that The Tenth Plan approach towards tourism signifies a distinct shift from the approach adopted in earlier Plans.

Apart from acknowledging the well accepted advantages of developing tourism for the promotion of national integration, international understanding and earning foreign exchange, the Tenth Plan recognizes the vast employment generating potential of tourism and the role it can play in furthering the socio-economic objectives of the Plan.

In order to create a supportive environment for the promotion of tourism, the New Tourism Policy, 2002 was announced. It aims at generating, awareness about the benefits of tourism for the host population. It induces state governments to use tourism as a means for achieving their socio-economic objectives, encourages the private sector to enhance investment in tourism and provide legislative and regulatory support for sustainable tourism and to protect the interests of the industry and the consumer. The policy envisages involving the rural sector in the promotion of rural, heritage, adventure and eco-tourism and promotes the development of competitive high quality products and destinations. Most importantly, it removes the barriers to growth and resolve contradictions in policy to achieve inter - sectoral convergence of activities that help the growth of tourism (Tenth Five Year Plan, 2002-2007).

India provides enormous experiential opportunities for tourists based on the wide variety of all season attractions available throughout the country. It is imperative that these attractions get developed for the socio-economic benefit of the local communities, especially in order to strengthen inclusive economic growth. It is equally important to ensure that increased socio-economic well-being does not cause permanent or long-term damage to the country's physical, cultural and environmental heritage. The use of existing resources, both tangible and intangible, has to be undertaken judiciously for the well-being of the present generation but not at the cost of depriving future generations of any part of our inheritance. The Planning Commission in the Approach Paper to the 12<sup>th</sup> Five Year Plan has mentioned that Tourism and Hospitality Sector has a key role to play in promoting faster, sustainable and more inclusive economic growth.

**TOURIST ATTRACTIONS IN INDIA**

India is a country known for its lavish treatment of all visitors, no matter where they come from. Its visitor-friendly traditions, varied life styles and cultural heritage and colorful fairs and festivals held abiding attractions for the tourists. The other attractions include beautiful beaches, forests and wild life and landscapes for eco-tourism; snow, river and mountain peaks for adventure tourism; technological parks and science museums for science tourism; centers of pilgrimage for spiritual tourism; heritage, trains and hotels for heritage tourism. Yoga, Ayurvedic and natural health resorts and hill stations also attract tourists.



The Indian handicrafts particularly, jewelers, carpets, leather goods, ivory and brass work are the main shopping items of foreign tourists. It is estimated through survey that nearly forty per cent of the tourist expenditure on shopping is spent on such items.

Despite the economic slowdown, medical tourism in India is the fastest growing segment of tourism industry, according to the market research report "Booming Medical Tourism in India". The report adds that India offers a great potential in the medical tourism industry. Factors such as low cost, scale and range of treatments provided in the country add to its attractiveness as a medical tourism destination.

## REVIEW OF LITERATURE

Several studies have been conducted world over focusing on different aspects of tourism. Some of these studies focusing on the economic aspects of tourism industry are summarized below.

**Dritsakis (2010)** empirically examined the impact of tourism on the long-run economic growth of Greece by using the causality analysis among real gross domestic product, real effective exchange rate and international tourism earnings. A multivariate autoregressive VAR model is applied for the period 1960 – 2000. The results of co- integration analysis suggested that there is one co-integrated vector among real gross domestic product, real effective exchange rate and international tourism earnings. Granger causality tests based on error correction models (ECM) have indicated that there is a "strong Granger causal" relation between international tourism earnings and economic growth "strong causal" relation between real exchange rate and economic growth, and simple "causal relation" and between real exchange rate and international tourism earnings.

**Karthik et al (2012)** examined the role of tourism industry in economic development of India. This paper attempts to evaluate role of tourism as one of the service industry in India and its impact on the overall economic development of the country. Tourism industry in India is growing and it has potential for generating employment and earning large amount of foreign exchange besides giving on impacts to the country over all economic and social development. The main objective of this paper is to study the role of tourism in development of multiple use infrastructures that benefits the host community including various means of transport, health care facilities and sports centres. This paper makes an attempt to provide an in- depth analysis about the significant development as well as the negative and positive impacts of tourism industry in India.

**Dhariwal R (2005)** analyzed the determination of international tourist arrivals in India using annual data from 1966-2000. The results show that socio-political factors, communalism terrorism and tension with Pakistan constitute serious threats to the tourism industry, limiting the gains that could otherwise have been realized.

**Ivanov .S (2006)** analyzed the impact of tourism on economic growth. The study explores the problem of measuring the economic impact of tourism which requires a broader view of the analysis of the interaction between tourism and GDP. This paper presents a methodology for measuring the contribution of tourism to economic growth and it is tested with data for Cyprus Greece and Spain. This study finds the overall impact on Gross Domestic Product (GDP).

**Eugenio-Martin et al. (2004)** considered the relationship between tourism and economic growth for Latin American countries for the period 1985-1988. The analysis is based on a panel data approach. Their findings suggest that the increase in the number of tourists' arrivals in a country offers an opportunity for economic growth while countries are developing but not when countries are already developed.

**Debasish et al. (2012)** empirically investigated the foreign tourist arrivals to India. This paper analyzes the tourism demand generally interpreted through arrivals to various destinations in India. The study encompasses two periods viz, a period of significant development from 1980-1981 to 1990-1991 and 1991-92 onwards. First period is considered for significant improvement of Indian tourism and the second period for its subsequent changes in the perspective of significant of economic and political crises. The study was conducted through hypothetical trend equations contributing to estimation of growth in tourists arrivals over the year. **Leena (2012)** analyzed the impact of tourism on Indian economy. This paper discusses how Indian is emerging as a popular tourist destination in the world, driven by the focus on innovation and creating value for tourists. It aimed to change the attitude and behaviour toward foreign tourist by stressing on the aspect that a guest has been held in high esteem in India since ancient times. This paper observes that there has been a tremendous growth in tourism in India because for the policies of the government and support from all levels. The author opines that many events like 20/20 IPL cricket matches, commonwealth games etc., work as a big catalyst for promoting tourism in India

## OBJECTIVES OF THE STUDY

1. To examine the growth and trends in tourism industry.
2. To analyses the economic contribution of tourism industry to Indian economy.

## METHODOLOGY

The paper is mainly based on the secondary data. The secondary data were collected from various published sources like books, journal, reports, etc.

## PRESENT STATUS OF TOURISM INDUSTRY IN INDIA

Tourism in India is the largest service industry, with a contribution of 6.23% to the national GDP and 8.78% of the total employment in India. In 2010, total Foreign Tourist Arrivals (FTA) in India were 5.78 million and India generated about 200 billion US dollars in 2008 and that is expected to increase to US\$375.5 billion by 2018 at a 9.4% annual growth rate. Majority of foreign tourists come from USA and UK. Kerala, Karnataka, Delhi, Uttar Pradesh and Rajasthan are the top five states to receive inbound tourists. Domestic tourism in the same year was 740 million. Andhra Pradesh, Uttar Pradesh, Tamil Nadu and Maharashtra received the big share of these visitors. Ministry of Tourism is the nodal agency to formulate national policies and programmers for the development and promotion of tourism. In the process, the Ministry consults and collaborates with other stakeholders in the sector including various Central Ministries agencies, the state governments and union territories and the representatives of the private sector. Concerted efforts are being made to promote new forms of tourism such as rural, cruise, medical and eco-tourism. The Ministry of Tourism also maintains the Incredible India campaign.

## SIGNIFICANCE OF TOURISM IN INDIA

Tourism plays a significant role in Indian economy in the following ways.

- Generating Income and Employment:** Tourism in India has emerged as an instrument of income and employment generation, poverty alleviation and sustainable human development. It contributes 6.23% to the national GDP and 8.78% of the total employment in India. Almost 20 million people are now working in the India's tourism industry. It is the one of the important part of Indian tourism industry.
- Source of Foreign Exchange Earnings:** Tourism is an important source of foreign exchange earnings in India. This has favorable impact on the balance of payment of the country. The tourism industry in India generated about US\$100 billion in 2008 and that is expected to increase to US\$275.5 billion by 2018 at a 9.4% annual growth rate.
- Preservation of National Heritage and Environment:** Tourism helps preserve several places which are of historical importance by declaring them as heritage sites. For instance, the Tajmahal, Ajanta and Ellora temples, etc, would have been decayed and destroyed had it not been for the efforts taken by Tourism Department to preserve them. Likewise, tourism also helps in conserving the natural habitats of many endangered species.
- Developing Infrastructure** Tourism tends to encourage the development of multiple-use infrastructure that benefits the host community, including various means of transports, health care facilities, and sports in addition to the hotels and high-end restaurants that cater to foreign visitors. The development of infrastructure has in turn induced the development of other directly productive and positive activities.
- Promoting Peace and Stability:** The tourism industry can also help promote peace and stability in developing country like India by providing jobs, generating income, Foreign exchange earnings in the Indian economy, protecting the environment, and promoting cross-cultural awareness. However, key



challenges like adoption of regulatory frameworks, mechanisms to reduce crime and corruption, etc, must be addressed if peace-enhancing benefits from this industry are to be realized.

### TRENDS IN ARRIVAL OF FOREIGN TOURISTS IN INDIA

Trends in arrival of foreign tourists show the growing importance of this sector. Arrival of foreign tourists and the foreign exchange earned for the period 2000-2012 are presented in table -1.

**TABLE-1: FOREIGN TOURIST ARRIVALS AND FOREIGN EXCHANGE EARNINGS DURING THE YEARS 2000-2012**

Year	Foreign Tourist Arrivals	Percentage Change Over Previous Year	Foreign Exchange Earnings in Crore	Percentage Change Over Previous Year	Foreign Exchange Earnings (Million US\$)	Percentage Change Over Previous Year
2000	26,49,378	6.7	15,626,	20.6	3,460	15.0
2001	25,37,282	-4.2	15,083	-3.5	3,198	(-)7.6
2002	23,84,364	-6.0	15,064	-0.1	3,103	3.0
2003	27,26,214	14.3	20,729,	37.6	4,463	43.8
2004	34,57,477	26.8	27,944	34.8	6,170	38.2
2005	39,18,610	13.3	33,123,	18.5	7,493	21.4
2006	44,47,167	13.5	39,025	17.8	8,634	15.2
2007	50,81,504	14.3	44,360	13.7	10,729	24.3
2008	52,82,603	4.0	51,294	15.6	11,832	10.3
2009	51,67,699	-2.2	53,700*	4.7	11,136*	(-)5.9
2010	57,75,692	11.8	64,889#	20.8	14,193#	27.5
2011	63,09,222	9.2	77,591#	19.6	16,564#	16.7
2012	66,48,318	5.4	94,487#	21.8	17,737#	7.1

Source: Ministry of Tourism, Annual Report 2012-13. # Advance Estimates \*Revised Estimates

Tourism is an important sector of Indian economy and contributes substantially in the country Foreign Exchange Earnings. FEEs from tourism, in rupee terms, during 2011 was Rs.77,591 crore (provisional), with a growth of 19.6%, as compared to the FEEs of Rs.64,889 crore (provisional) during 2010. During 2012, the Foreign Exchange Earnings (FEEs) from tourism registered a growth of 21.8% from Rs.77,591 to Rs.94,487 crore (provisional) when compared to FEEs during 2011.

### CONTRIBUTION OF TRAVEL AND TOURISM TO GDP AND EMPLOYMENT IN INDIA

The importance of tourism as an instrument for Economic Development and Employment Generation, particularly in remote and backward areas has been recognized the world over. It is the largest service industry globally in terms of revenue as well as contribution of travel & tourism to Gross Domestic Product (GDP) and Travel & tourism contribution of employment.

The following table gives trends in the contribution of travel and tourism to GDP and employment generation between 2000 and 2013.

**TABEL-2: CONTRIBUTION OF TRAVEL AND TOURISM TO GDP AND EMPLOYMENT IN INDIA DURING 2000-2013**

Year	Travel & Tourism Contribution To GDP			Travel & Tourism Contribution To Employment	
Concepts	Rs. In billions	Real growth (%)	% Share	Employment growth (%)	% Share in total employment
2000	1983.66	8.6	9.2	0.5	11.8
2001	1693.28	17.5	7.3	-16.5	9.6
2002	2072.37	18.6	8.3	12.3	10.6
2003	2429.06	12.9	8.8	6.3	11
2004	2738.79	7.0	8.7	1.4	11
2005	2499.64	-12.5	7	-13.1	9.3
2006	2953.63	11.6	7.1	1.9	9.3
2007	3475.65	11.2	7.2	10.4	10.1
2008	4014.08	5.8	7.2	-16.4	8.3
2009	4130.66	-1.2	6.7	-4.4	7.8
2010	4768.45	5.6	6.5	-0.8	7.6
2011	5686.44	9.8	6.6	3.8	7.8
2012	6385.13	3.9	6.5	0.5	7.7
2013	7416.14	7.3	6.6	-0.2	7.5

Source: World Travel & Tourism Council (WTTC)

The contribution of travel and tourism to gross domestic product (GDP) increased substantially between 2000 and 2013. It increased from Rs1983.66 billion in 2000 to Rs 7416.14 billion by 2013. Though there is an increase in quantity, there is a decrease in growth rate in recent times, especially in 2012. Similarly the share in Gross Domestic Product (GDP) also declined and was steady after 2009. While the real growth rate was 8.6 in 2000, it declined to 7.3 by 2013. The share in employment also declined from 11.8 percent to 7.5 percent in 2013. The growth of employment showed a negative growth rate in some of the years, especially in 2013. The contribution of travel & tourism to GDP and to total employment directly depends on aspects like the number of visitors, domestic expenditure, and internal tourism consumption, purchases by tourism providers, including imported goods, capital investment, government collective spending and imported goods.

The overall development of any country depends specially on the improvement of roads, vehicle, communication, water supply, airport and railways etc. Economic progress and industry development depends completely on the overall development of country. And tourism plays a major role on this overall infrastructural advancement. India's tourism industry is experiencing a strong period of growth in high spending foreign tourists and coordinated government to promote "Incredible India". The tourism industry in India is substantial and vibrant, and the country is fast becoming a major global destination. India's travel and tourism industry is one of the most profitable industries in the country and also credited with contributing Gross Domestic Product (GDP) and employment. From the above, it is clear that tourism plays an important role in generating income and employment in India. Its potential depends on the volume of tourist arrivals in India and tourist arrival depends on various factors like domestic expenditure, internal tourism consumption, purchases by tourism providers, including imported goods, capital investment, government collective spending and imported goods.

### IMPLICATIONS OF THE TARGETS IN 12<sup>th</sup> FIVE YEAR PLANS

Following are the implications of the targets to be achieved in respect of FTAs and Domestic Tourism during 12th Plan.

**Foreign Tourist Arrivals:** Number of FTAs in 2016 are estimated to be 11.24 million. Number of Foreign Tourist Visits (FTVs) in 2016 will be 35.96 million.

**Domestic Tourism:** Number of Domestic Tourist Visits (DTV) in 2016 is estimated to be 1451.46 million.

**Additional Foreign Exchange Earnings from tourism:** The Foreign Exchange Earnings from Tourism will increase from Rs. 64889 crore (US\$ 14.19 Billion) in 2010 to Rs. 134383 crores (US\$ 30.3 Billion) in 2016. Additional FEE from Tourism during 2010-16 are estimated to be Rs. 69494 crore (US\$ 15.7 Billion).

**Employment Generation:** Using the data on share of tourism in the total jobs in the country available from Tourism Satellite Accounts (TSA) for 2002-03 and estimated for years till 2007-08, the total number of jobs (direct and indirect) in the tourism sector in 2016 are estimated to be 77.5 million as compared to 53 million in 2010. Therefore, an additional employment of 24.5 million (direct and indirect) is likely to be created during in 2010 to 2016.

**Manpower Requirement in Hospitality Sector:** As per the study commissioned by Ministry of Tourism, the total employment in Hospitality Sector (Hotels-classified and unclassified, eating outlets, Tour Operators, Travel Agents and Medical & Wellness units) in selected years are estimated to be as follows:

TABEL-3

Year	Employment (Laksh)
2011-2012	43.84
2012-2013	47.26
2016-2017	63.79

Source: Report of the working group on tourism for xii five year plans.

## FUTURE PROSPECTS OF INDIAN TOURISM INDUSTRY

According to the latest Tourism Satellite Accounting (TSA) research, released by the World Travel and Tourism Council (WTTC) and its strategic partner Oxford Economics in March 2009:

- The demand for travel and tourism in India is expected to grow by 8.2 per cent between 2010 and 2019 and will place India at the third position in the world.
- India's travel and tourism sector is expected to be the second largest employer in the world, employing 40,037,000 by 2019.
- Capital investment in India's travel and tourism sector is expected to grow at 8.8 per cent between 2010 and 2019.
- The report forecasts India to get capital investment worth US\$ 94.5 billion in the travel and tourism sector in 2019.
- India is projected to become the fifth fastest growing business travel destination from 2010-2019 with an estimated real growth rate of 7.6 per cent.

## CONCLUSION

The Importance of tourism as an instrument for economic development and employment generation particularly in remote and backward areas has been recognized the world over. It is the largest service industry globally in terms of gross revenue as well as foreign exchange earnings. Tourism is overwhelmingly an industry of private sector service providers and public sector has a significant role to play in infrastructure areas either directly or through public partnership mode. Another important feature of the tourism industry, which is of particular significance to India, is its contribution to national income.

While 2013 presented many challenges for the global economy and the Travel & Tourism industry there is an optimism that given the performance of the country under severe financial crisis world over, the tourism industry also bounces back. In the longer-term, demand from and within emerging markets will continue to rise in significance.

Since tourism is a multi-dimensional activity, and basically a service industry, it would be necessary that all wings of the Central and State governments, private sector and voluntary organizations become active partners in the endeavour to attain sustainable growth in tourism if India is to become a world player in the tourist industry.

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# TOWARDS ENHANCING EFFICIENCY IN THE TRANSPORT INDUSTRY IN KENYA: A STUDY OF THE ROAD AND RAIL TRANSPORT

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## ABSTRACT

*This paper presents the concepts of beneficence, speed and efficiency in transport through an examination of transport literature and its application to the transport challenges which typically confront the transport industry in Kenya. The main research drivers focused on speed, road and rail safety, the impact of East Africa Community integration on the transport industry and the Government of Kenya's involvement in enhancing efficiency in the road and rail transport. Railway transport is the second most popular mode of transport in Kenya, after road transport for both freight and passenger traffic. The growth of Kenya's economy hinges to a large extent on the road transport sector operating more efficiently and effectively in moving freight and goods. This was a desk research study which relied heavily on secondary data. The conclusions of this study are that road and rail performance do not meet the expectations of its users and neither have they met those of the government. They are inefficient, unreliable, and unprofitable in most years and operate in a dilapidated, obsolete state. Therefore it is recommended that; a) efficiency of the road transport to be increased especially along the Northern Corridor and the Tanzania-Kenya-Sudan road corridor b) improve the institutional arrangements and capacity in the transport sector c) improve security in the region*

## JEL CODE

General M10

## KEYWORDS

Efficiency, infrastructure, logistics, rail transport, road transport.

## 1.0 INTRODUCTION

In the recent years, rapid deterioration of the road network due to poor maintenance has become a serious impediment to economic development. This has hampered the marketing of perishable agricultural products such as milk and vegetables in some parts of the country. The decline in rail capacity has begun to constrain the exportation of low-value bulk commodities such as soda ash, which are very sensitive to changes in transport costs. Of greater concern to policymakers, planners and other stakeholders, however, are the constraints the existing transport system is imposing on the future growth and diversification of production and exports. High transport costs have seriously hampered the competitiveness of commodities from countries transiting their exports and imports through Kenya, including the local business community.

Kenya has a road network connecting major cities and towns in the country. Road transportation handles nearly 70 per cent of freight traffic. The Government of Kenya has improved infrastructure for motorized and non-motorized vehicles and encouraged people in rural areas to form cooperative societies to sell their produce and buy inputs at central markets. The Government has also enforced axle load regulations and restructured other transport systems. Plans are underway to explore privatization and modernization of weighbridges and introduction of weigh-in-motion facilities. The Government has also encouraged the use of rail transport to reduce traffic and boost the economy, as well as extend rail services across borders. It is keen to ensure that railway operations are improved through adequate financing for development and maintenance so as to participate effectively in the competitive global trade.

Building the capacity to participate in global trade is becoming increasingly critical for economic growth in developing countries. As the pace of global integration continues, developing countries will compete increasingly in terms of their ability to link with global and regional markets competitively and efficiently. An inefficient trade and transport facilitation system can create obstacles and incurs real costs in terms of the product value –international agencies estimate that outdated trade administration procedures and the failure to adopt IT-supported trade facilitation account for seven per cent of the value of the goods traded (Schware and Kimberley, 1995). For countries in East Africa region, improving the efficiency of trade logistics is a critical priority. This is not a task with a clear start and end; it is a process that has to be set in motion with small initiatives. The region is losing global market share in key export sectors.

## 2.0 LITERATURE REVIEW

### 2.1 OVERVIEW OF THE TRANSPORT INDUSTRY IN KENYA

Road transport accounts for 80% of the total movement of passengers and freight in Kenya. Generally, roads are the only means of access to rural communities. The public road network in Kenya is about 160,886 km in length, comprising 16,544 km of National Roads managed by the Kenya National Highways Authority; 12,549 km of urban roads under the Kenya Urban Roads Authority; and an estimated 131,794 km of rural roads under Kenya Rural Roads Authority.

The railway network administered by the Kenya Railways Corporation, with a 1,083 km main line from Mombasa to Kisumu and Malaba. Freight services constitute about 95% of railway operations and income. Currently, the railway system carries about 2.4 million tons of cargo per annum which is about half capacity. The Kenya and Uganda Railways mainline systems are under jointly concession to a private operator, Rift Valley Railways Consortium (RVR) in an attempt to increase efficiency.

Air transport is managed by the Kenya Airports Authority (KAA), established in 1991. KAA operates nine major airports nationwide, including 3 international airports, and 250 airstrips around the country. Ongoing infrastructure expansion works to the major airports are aimed at increasing capacity.

Kenya has one sea port at Mombasa, which is operated by Kenya Ports Authority (KPA). The port has 16 deep water berths while other major and deeper ones almost completed. Lamu port under the greater LAPPSET project is also under construction with the first three berths expected to be completed by 2015. Cargo traffic through Mombasa port is about 24 million tons in year 2012 including 775,000 TEUs of container traffic. KPA also operates two inland container depots in Nairobi and Kisumu. KPA's strategy is to introduce private sector management and financing so as to improve the port's performance, starting with the new container terminal under construction, conventional berths, oil terminals and marine craft.

The oil pipeline, managed by the Kenya Pipeline Company, from the port of Mombasa to Nairobi (450 km) with extensions to Eldoret (325km) and Kisumu (121 km). The pipeline carries about 4 million m<sup>3</sup> of petroleum products per year.

## 2.2 SITUATIONAL ANALYSIS OF RAIL AND ROAD TRANSPORT IN KENYA

The wider Eastern African region has in recent years been subject to a multitude of proposed new rail projects, with the arguably most advanced being the link from Dar es Salaam, via Isaka to Kigali / Rwanda. LAPPSET too has made advances with a proposed new deep sea harbor in Lamu linking the landlocked countries of South Sudan and Ethiopia by a new standard gauge railway and a highway, having a branch off in Northern Kenya to Juba and Addis Ababa, which would give both countries a reliable link for imports and exports away from hostile neighbors. Not much progress though has been made in past plans to link Juba with Uganda before joining the RVR network linking to Mombasa, and other plans to create a new railway line between Tanga and Musoma at Lake Victoria too have in spite of political declarations of intent been on the slow burner, as financiers are looking at them all to root out duplicity and promote only the most viable links in terms of passenger and cargo traffic expected to shift from road to rail.

As to the road sector, bottlenecks continue to exist along the major traffic arteries from the coastal ports of Dar es Salaam and Mombasa to the hinterland countries, especially considering the constantly congested Kenyan capital Nairobi and the same in Kampala, with border crossing facilities and infrastructure too lagging decades behind. Therefore the problems to be tackled in this industry in the East African countries include rehabilitation, expansion as well as new bypasses around the worst congested stretches of highway to ensure that a future road network supports the growth ambitions of the East African Community and provides links to South Sudan, Eastern Congo and Ethiopia. In Kenya, roads are mainly concentrated in areas of high population and economic activity, especially the highlands, where most of the country's food and export crops are grown. However, the road condition has deteriorated considerably over the years due to inadequate maintenance and overloading of vehicles. A visual inspection of the paved road network revealed that only 12 percent of the network is in good condition, 42 percent in fair condition and 46 percent in poor or critical condition.

Major investment has been necessary along the Northern Corridor to raise pavement standards and to meet present traffic-level demands. Several attempts have been made to control vehicle overloading through the introduction of weighbridges without much success. The extension of the pipeline to both Kisumu and Eldoret significantly reduced traffic loading on the main road. However, this did not have a lot of impact on the Nairobi-Mombasa road because of the demand to transport heavy petroleum products by road. Kenya Railways was hence required to upgrade its oil lifting capacity from Mombasa by converting some ordinary wagons into oil tanker wagons.

## 2.3 THE EASTERN AND CENTRAL AFRICA ROAD AND RAIL TRANSPORT

Economic growth has been strong in the region, owing to increased mining activity, especially in the coal sector, as well as higher agricultural production and tourism growth. The demand for raw materials, from India and China in particular, is also providing East and Central Africa with new markets and increased exports. As a region, East Africa comprises about 26% of Africa's population and 16.5% of Africa's combined GDP in 2012 current prices. Regional GDP growth was aided by rising oil output in Sudan, mineral exports in Ethiopia and Tanzania, robust trade output from Kenya and economic reforms in Rwanda. Growth is expected to remain strong with foreign investments in oil and mineral exploration in Sudan, Uganda and Ethiopia, along with a pipeline of large infrastructure projects in the Central, Northern, and North-South Corridors.

The inadequate infrastructure network however is hampering economic growth. Urgent priority has been placed on improving the transportation network with investments from both the private investors and multilateral agencies. Efficient transportation corridors are keys to economic development, and thus rehabilitation projects and new infrastructure investments are needed to keep the region prospering. The key factors in ensuring a functioning road network include road planning, design, operation and optimization of rail assets, and regional connectivity.

Large infrastructure investments are expected to be in the form of Public Private Partnerships. Private Sector Investors need to understand the requirements of partnership agreements in order to participate effectively in them. However, the inadequate infrastructure network is hampering economic growth. Urgent priority has been placed on improving the transportation network with investments from both private investors and multilateral agencies. Meanwhile, countries such as Germany and bodies such as the African Development Bank (ADB) are providing new funding to rehabilitate and improve current transportation networks in the region. Efficient transportation corridors are keys to economic development; therefore, rehabilitation projects and new infrastructure investments are needed to continue driving economic growth in the region.

The development of transport corridors is a top priority in East Africa. The major transport corridors are the Central Corridor (Tanzania to the Democratic Republic of Congo (DRC)), the Northern Corridor (Kenya to DRC/Sudan), the North–South Corridor (Egypt to South Africa), the Tazara Corridor (Tanzania to Zambia) and the corridors in the Horn of Africa (Addis Ababa–Djibouti, Kenya–Ethiopia, Kenya–Sudan and Uganda–Sudan). Large infrastructure investments are expected to be in the form of public–private partnerships. Private-sector investors need to understand the requirements of partnership agreements to participate effectively in them.

## 3.0 IMPORTANCE OF STUDY

The study will help in establishing the factors affecting efficiency in the road and rail transport in Kenya and hence provide recommendations on how to improve efficiency in this key sector. This sector forms the backbone of the economy and plays a vital role in linking the overall trading chain and consequently, determines to a large extent Kenya's trade and market competitiveness.

## 4.0 STATEMENT OF THE PROBLEM

The transport industry in Kenya faces a myriad of challenges. The road and rail industry in Kenya is faced with many challenges which include; the population and economies in the region are growing in leaps and bounds and the current railways system cannot cope with the current and future demands. There is a gap between haulage capacity and traffic availability both current and projected. Transport and logistics in the region is expensive in comparison to the world benchmarks. Insecurity along the transport network is high. There are stranded resources in the region that cannot be moved efficiently e.g. minerals and agricultural produce. The congestion in our major cities is a result of uneconomical, unreliable, unsafe inter-urban passenger transport. The constant shift of traffic from rail to roads has resulted in high cost of road maintenance and rehabilitation. There is also an environmental degradation concern due to the increased use of fuel. These challenges have resulted to inefficiencies in the delivery of services both in the country and in the entire Eastern African region.

## 5.0 OBJECTIVES

Transportation decision makers are tasked with doing more transport logistics improvements more often, which requires enough tools to assess and predict the outcomes of their choices and enhance efficiency. Efficient trade logistics are important for attracting foreign direct investment, which in turn can increase a country's export capacity. In particular, foreign companies increasingly rank developing countries in terms of the following factors: (i) access to key markets; (ii) adequate skills at competitive costs; (iii) high quality infrastructure and logistics; (iv) competitive domestic enterprises – in terms of cost, quality and timely delivery; (v) presence of industrial clusters; (vi) efficient bureaucracy; and (vii) locations that fit into international production systems (UNCTAD, 2002). Therefore the research sought to find out the factors contributing to inefficiencies in the road and rail transport in Kenya.

## 6.0 HYPOTHESES

The economic growth of Kenya is highly dependent on an efficient transportation infrastructure. Road transport is the most widely used mode of transport in the country for transportation of goods within the East African region. This is followed by the railway transport. It was therefore crucial for this study to investigate the factors contributing to inefficient transport in Kenya.

## 7.0 METHODOLOGY

The study utilized a desktop research technique in seeking facts, general information on the topic, historical background and study results that have been published or exist in public documents. The information was obtained from libraries, newspaper archives and websites, journals and magazines.



## 8.0 RESULTS AND DISCUSSION

### 8.1 THE ROAD AND RAIL TRANSPORT PERFORMANCE

#### 8.1.1 RAIL TRANSPORT

The railway network operates a fleet of about 156 locomotives, with a carrying capacity of 6,407 wagons and 588 coach units. The rolling stock operates along the 2,700-kilometre route that connects Mombasa to Malaba, Nakuru to Kisumu, Kisumu to Butere, Voi to Taveta, Nairobi to Nanyuki, Eldoret to Kitale, Rongai to Solai and Gilgil to Nyahururu. There are over 150 stations. In addition, there is the Konza-Magadi line, which is maintained by the Magadi Soda Company. The Kenya-Uganda railway line was placed on management concession to a South African company, Rift Valley Railways on November 1, 2006 for a period of 25 years. The Kenya railway runs the other lines. However, old and poorly maintained tracks, locomotives, coaches and wagons continue negatively affecting the performance of the rail.



#### 8.1.2 ROAD

The country's entire road network stands at approximately 151,000 Km. Out of this; over 63,000 Kms are under classified road system while 87,600 kms fall under unclassified road system category. Out of the classified network system, 7,943 Kilometers meet the bitumen standards, 26,181 Kilometers meet the gravel standard and the rest are earth.



## 8.2 INEFFICIENCY IN THE TRANSPORT INDUSTRY IN KENYA

### 8.2.1 KENYA RAILWAYS CORPORATION PROBLEMS

Inadequate maintenance and other operational inefficiencies are evident in the limited number of locomotives that are available for service. Such inefficiencies cause railways to drive away traffic, which in turn compounds the sector's financial difficulties. Other problems include continuing decline in KRC performance (notwithstanding the surplus profit of FY 2011-2012), the bloated workforce, escalating public debt, lack of government subsidies, and fast deterioration of KRC's asset base. If these trends are not checked immediately, the weak financial position may result in total collapse of KRC.

The weak financial base of the corporation is enhanced by the fact that the economy is experiencing high interest rates despite stringent structural reforms, poor availability and reliability of wagons and locomotives and stiff competition from road haulers. Other issues include poor telecommunication and signaling system, an obsolete management information system and prolonged delays at border points due to bureaucratic procedures by customs and immigration departments.

It is noted that public ownership, financing and operation have failed to demonstrate any advantage in achieving national goals of poverty eradication and environmental sustainability. Fiscal drain, inadequate cost recovery methods, operational inefficiency, inadequate maintenance, and unresponsiveness to user demand problems have hampered sustainability of an efficient, reliable and profitable railway system in Kenya.

Deliberate cost recovery efforts and modalities for private sector participation in the provision of railway services are possible alternatives. This is because reliance on public ownership and provision of services is characterized by inefficiencies in resource allocation and enterprise management.



## 9.0 FINDINGS

### 9.1 MAJOR CHALLENGES EXPERIENCED WITH ROAD AND RAIL TRANSPORTATION

FIGURE 1 SOURCE: KAM TRADE FACILITATION STUDY; FIELD SURVEY, 2012

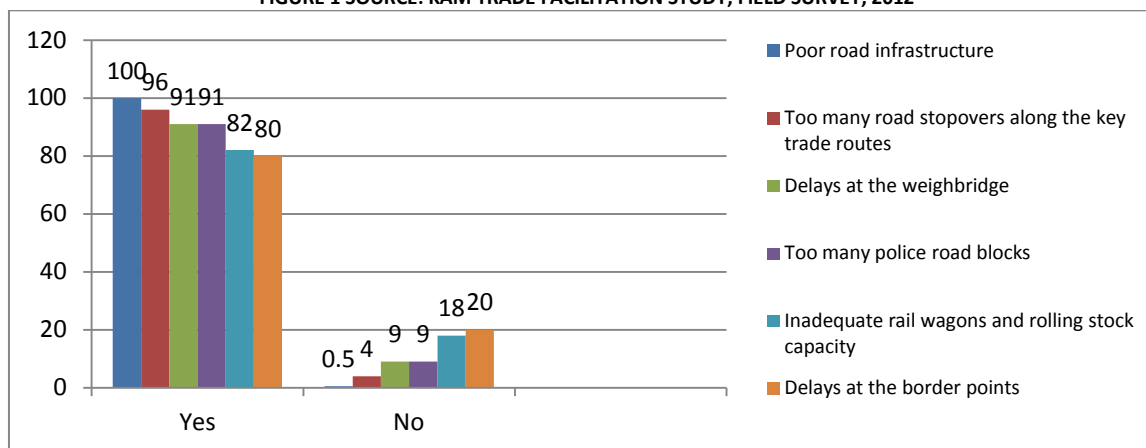


Figure 1 above shows that poor road infrastructure scores 100 per cent from the desk literature review. This is followed by numerous road stopovers along the key trade routes which had 96 per cent. Police road blocks and delays at weighbridges are major challenges as indicated by 91 per cent. Inadequate wagons and rolling stock capacity for the Rift Valley Railways had a response of 82 per cent followed by delays at the border points with 80 per cent.

#### Other challenges with overland transportation system:

##### RAILWAYS

1. Level of automation of the Rift Valley Railways (RVR) system is low. This causes delays.
2. Processing of Rail age Consignment Note is highly inefficient
3. Rail age Consignment Note (RCN) checked three times by Roll On-Roll Off (RORO) office, RVR CDO Office and Rail-Mounted Gantry (RMG) office
4. Poor communication with the customers
5. RVR does not give prior information to clients whenever wagons or trains are to be delayed

##### ROAD TRANSPORT

1. Inadequate road maintenance hence poor infrastructure and delays on the roads
  2. Transit trucks have been designated particular routes to follow no matter how bad these roads are. This causes further delays and damage to vehicles hence increasing the freight charges
  3. Trucks must pass through the six weighbridges along the transit corridor
  4. Equipment used at the weighing bridges are old and few; there are currently only two located at Mlolongo and Mariakani, hence the delays
  5. Poor working conditions at the weighbridges. The working place is very dusty, rough and bumpy. Workers suffer from respiratory related diseases as a result of this dust. There is lack of clean drinking water and washrooms.
  6. Customs escort for transit trucks delays even for two days. This causes inconvenience to the cargo and truck owners as well as the drivers
  7. Corruption
  8. Lengthy approval process for transfer of cargo from one transit truck to another in case of breakdown along the corridor
  9. High freight charges - after all those challenges the owner of goods must pay for it, hence reducing the competitive advantage of the business Pipeline
- There is inadequate capacity to transport fuel. Trucks from the region are travelling all the way to Mombasa to collect fuel which adds on to cost of petroleum products. Heavy trucks damage the road rapidly – a good case is that of the Sultan Hamud to Mito Andei road - this road which is hardly four years is already damaged in some sections and requires repairs. More trucks on the highway increase the occurrence of accidents

### 9.2 IMPLICATION OF OVERLAND TRANSPORT CHALLENGES TO THE BUSINESS SECTOR IN KENYA

#### 9.2.1 EFFECTS OF POOR ROADS AND RAIL TRANSPORTATION SYSTEMS

FIGURE 2: EFFECTS OF POOR ROADS AND RAIL TRANSPORTATION SYSTEMS

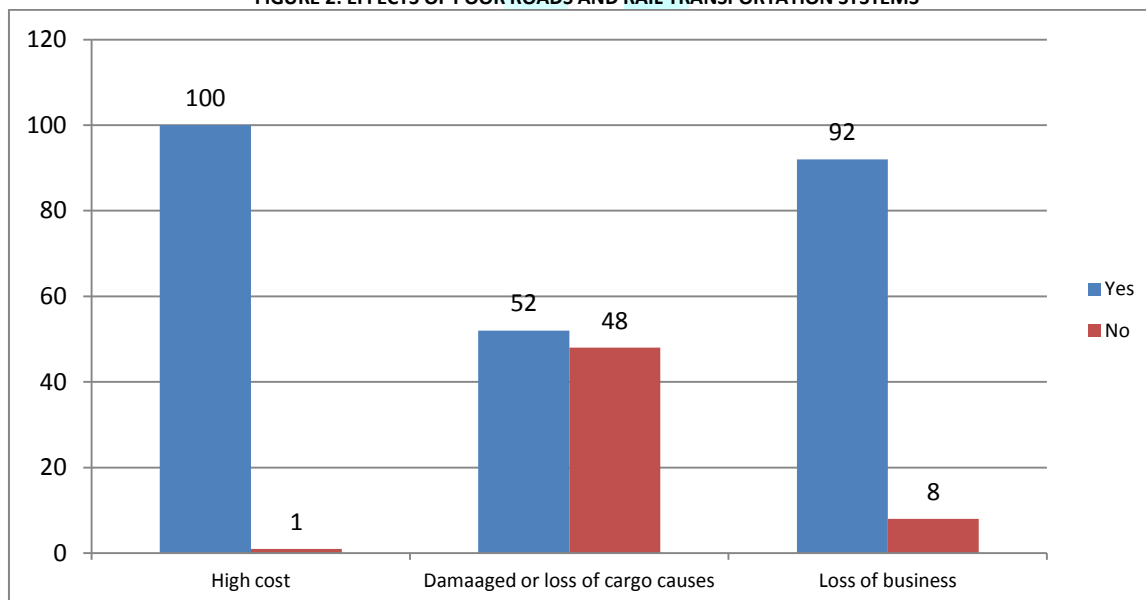


Figure 2 shows the effects of poor transportation systems to businesses in Kenya. A 100 per cent of the respondents indicated that poor transportation infrastructure adds high costs to the goods and services they offer to the market. The cost of transportation in Kenya is 30 per cent of the value of goods as

indicated by respondents in this study. Another earlier study on "Cost of Transportation in East Africa", carried out by USAID in 2007 gave a similar picture. The costs result in loss of business opportunities as pointed out by 92 per cent of the respondents.

## 10.0 RECOMMENDATIONS

Most of the railway yards are congested with old wagon stocks and locomotives and should be decongested to create space for increased traffic as improvements are made in railway operations. It is necessary to establish specific areas as railway museums where the old stocks of locomotives and wagons can be stored and used as tourist attraction centers. The active stocks should be adequately covered through an insurance policy against accidents and fire. The same cover should be extended to customer cargo. The railway track suffers from a number of limitations, including poor maintenance due to inadequate maintenance budgets; a narrow gauge (1000 mm), which limits the commercial speed to 40 kph; and low equipment availability, approximately 50 percent. This is primarily due to a lack of spare parts, high manning levels due to over employment and an intensive manning methodology as stipulated by the corporation's engineering manuals.

To deal with these problems, it is proposed that lines with insignificant traffic should be closed and rails uprooted, and stations as well as railway reserves sold to generate income for the railways. The affected branch lines include Gilgil-Nyahururu, Rongai-Solai and Leseru-Kitale. The proposition that a recurrent budget allocation priority should be given to railway track and maintenance schedules should be computerized and monitored closely. Finally, sleeper defects should be rectified and areas prone to accidents rehabilitated and/or reengineered.

In the implementation of railway reform, it is important to reorganize a "hierarchy among a range of various interventions", reflecting the fact that successful change at one level is generally predicated on certain prior conditions being met at a higher, more strategic level. A World Bank survey on human resources and institutional development in Sub-Saharan Africa railways identified and outlined this hierarchy of institutional issues and the order in which they should be approached. These included defining the railway's role; developing commitment to that role; implementing appropriate transport policy framework for achieving that role; implementing strategic reform and restructuring to ensure efficiency under the circumstances; strengthening top management through training and facilitation; improving resource availability; and finally implementing reorganization and management control. The road network

## 11.0 CONCLUSIONS

Like many economic activities that are intensive in infrastructures, the transport sector is an important component of the economy impacting on development and the welfare of populations. When transport systems are efficient, they provide economic and social opportunities and benefits that result in positive multipliers effects such as better accessibility to markets, employment and additional investments. When transport systems are deficient in terms of capacity or reliability, they can have an economic cost such as reduced or missed opportunities. Efficient transportation reduces costs, while inefficient transportation increases costs. The impacts of transportation are not always intended, and can have unforeseen or unintended consequences such as congestion. Transport also carries an important social and environmental load, which cannot be neglected.

High costs, unreliability, and poor quality of railway transport services are stifling efforts to promote Kenya's economic development. The large financial losses experienced by KRC in recent years have put a considerable strain on public finances. Restrictive regulations contribute to high costs and are a barrier to new innovations. Kenya's railway transport system, like the rest in Sub-Saharan Africa is a precarious and expensive venture. This is mainly because of the difficult terrain, low demand, and the scarcity of human and financial resources. Besides, the policies adopted to deal with these challenges have usually been ineffective.

The conclusions of this study are that railway performance does not meet the expectations of its users and neither has it met those of its owners. It is inefficient, unreliable, and unprofitable in most years and operates a dilapidated, obsolete rolling stock. It is not possible for KRC to raise investment funds from its current operations, due to an existing backlog of financial requirements and hence needs a partner with the required financial resources and the technical know-how. The growing traffic through the port of Mombasa is constraining railway capability with the result that it has lost its complementary role to other transport modes. At the moment, the railway is engaged in too many activities that are not core to its prime objectives. This is adversely affecting efficiency. These conclusions form the basis of the recommendations of this research paper.

## 12.0 LIMITATIONS

There was limitation in getting the relevant information required from the various targeted agencies. This non-disclosure can be attributed to the suspicion on the part of the respondents.

## 13.0 SCOPE FOR FURTHER RESEARCH

The study recommends further research to be done on inefficiencies in the air and sea transport in the East African Region. This will provide a more detailed comparative analysis of the challenges affecting the entire transport industry in the region.

## 14. ACKNOWLEDGEMENT

Glory to the Almighty God for the strength and good health He has provided to both the authors without which we could not have moved an inch. We also wish to extend our sincere gratitude to our lecturers at Jomo Kenyatta University of Agriculture and Technology specifically our doctorate lecturers.

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**EMERGING TRENDS IN THE MARKET OF EVENT MANAGEMENT: A LITERATURE REVIEW****ANTRIKSHA NEGI****ASST. PROFESSOR****INSTITUTE OF INFORMATION TECHNOLOGY & MANAGEMENT  
NEW DELHI****RAVINDER PANT****SR. ASSOCIATE****CVENT INC.****GURGAON****ABSTRACT**

*Event management is an ever-present word in contemporary society which is used for small business breakfasts, large corporate shows and also for big international sport events, such as the Olympic Games. Event management involves studying the particulars of the brand, identifying the target audience, devising the event concept, planning the logistics and coordinating the technical aspects before actually launching the event and is considered one of the strategic marketing and communication tools by companies of all sizes which is growing at a rate of three times that of traditional advertising. It is a form of brand promotion that ties a brand to a meaningful athletic, entertainment, cultural, social or other type of high-interest public activity. The purpose of this study is to identify and examine budding trends in event management by using secondary sources of data collection and determines the research gaps in this field for future researchers.*

**KEYWORDS**

Advertisements, Cultural Events, Economic Impact, Festival.

**INTRODUCTION**

Event management involves studying the particulars of the brand, identifying the target audience, devising the event concept, planning the logistics and coordinating the technical aspects before actually launching the event. The recent growth of festivals and events as an industry around the world means that the management can no longer be temporary such as the India International Trade Fair (IITF), have a large impact on the whole country. The industry now includes events of all sizes from the Olympics to an in-house meeting for ten business people. Many industries, charitable organizations, and interest groups will hold events of some size in order to market themselves, build business relationships, raise money or celebrate. Event management is considered one of the strategic marketing and communication tools by companies of all sizes which include product launches to press conferences, to promotional events. They might target their audience by using the news media, hoping to generate media coverage which will reach thousands or millions of people; and can also invite their audience to their events and reach them at the actual event.

Event marketing which is growing at a rate of three times that of traditional advertising; is a form of brand promotion that ties a brand to a meaningful entertainment, cultural, social or other type of high-interest public activity. In traditional manner events means gathering events that would bring people and tribes together to create peace, harmony and good will etc. Event promotions have an opportunity to achieve success because, unlike other forms of marketing communications, events reach people when they are accessible to marketing messages and capture people in a relaxed atmosphere. It provides companies alternatives to the cluttered mass media, ability to segment on a local or regional basis, and opportunities for reaching narrow lifestyle groups whose consumption behavior can be linked with the local event.

Using secondary sources of data collection from various websites, published articles, national and international journals, case studies, data from job advertisements, research study of Association for Events Management Education (AEME) etc; this paper will facilitate an overall discussion on event research and contribute to the body of event knowledge. The purpose of this study is to identify and examine budding trends in event management by making reviews of the topics presently under study by event research experts and then identified gaps which will provide an opportunity for further development of a research agenda for events which will have considerable realistic implications both for academic circles and for the events industry.

**LITERATURE REVIEW**

**Mair Judith and Whitford Michelle (2013)** identified and examined emerging trends in event and festival research and also in the themes and topics being studied in this area. Using an innovative research technique underpinned by Q methodology, this study facilitated a deeper discussion on event research and contributed to the body of event and festival knowledge by using the opinions of events experts on the topics and themes that will highlight the future development of an events and festivals research agenda and revealed several areas for comprehensive and further research which includes definitions and types of events, and events logistics and staging.

Authors here represented a comprehensive overview of existing studies, and provided vital information for events researchers in all areas of the field. Further, the research highlighted the gaps where further study is unlikely to provide new knowledge.

**O'Toole J. William (2000)** explored the latest trends in project management system that integrates all elements of the planning and control, and the influence of information technology on event management. This study further highlighted the topics vis-à-vis; trends in Project Management suitable to event management; the convergence of diverse event management procedures; differences between the current project management body of knowledge and the practice of event management; the concept of a workable dynamic.

The purpose of this paper was to track the movement of event management towards the project management model by describing the history of project management and the current trends; and then similarities and differences were explored by comparing project management with similar areas in event management and suggested a blend of event management knowledge and skills based on the theory of project management. Author outlined the need for a systematized methodology for the planning and control of events like; the absorption of useful techniques from other disciplines, refinement of these techniques and shifts in focus which combined with systems analysis and operations research, form an integrated system and a science. The paper concluded that event management; is converging towards a systematic approach to planning and control and suggested that some standardization is required for increasingly regulated and complex environment.

**Presbury Rayka and Edwards Deborah (2005)** discussed the need to incorporate sustainability into meeting and event management; to describe the process used by the Best Education Network (BEST) to identify sustainable meeting and event objectives; and to present the learning objectives that were identified, as a result of this process. The concept of Think Tanks was used to draw together educators, researchers, consultants and practitioners from the tourism industry to input their knowledge and experience into BEST practice for sustainable tourism. This paper provided a background to meetings and events including their contribution to communities, their role in sustainability and an overview of current pedagogy in the teaching of meetings and events and described the Nominal Group Technique (NGT) a tool that was used to identify objectives for sustainable meeting and event management. The study presented an argument for the

inclusion of sustainability into meetings and events and the objectives that were identified at BEST Think Tank III, using the Nominal Group Technique, and has subsequently been incorporated into the development of a teaching module for sustainable meeting and event management.

**KoseHuseyin, Argan Tokay Mehpare and ArganMetin (2011)** aimed to show the application of event management dimensions named ticketing, transportation, human resources (volunteers and trained staff), budgeting, marketing and PR and risk management while managing and marketing a successful special sport event. The study made several contributions for the sport event managers and sport marketing managers about how to use event management dimensions effectively and shape strategies based on this perspective. A case study was employed using judgmental sampling technique to analyze a sport event based on event management and event marketing perspectives. Data in the study was collected from primary (personal semi-structured interviewing and observations) as well as secondary data sources (observations, internet resources, press and visual media). The researchers carried out five group interviews, with key informants in the special sport event.

The paper presented the findings of a case study about dimensions of event management and event marketing and also reviewed the literature for event management and event marketing and approaches with the focus on the dimensions of event management named ticketing, transportation, human resources (volunteers and trained staff), budgeting, marketing and PR and risk management. Through the research findings and informal interview with audiences indicated over of average satisfaction about performance of whole event management and marketing.

**Arcodia Charles & Barker Tanuja (2002)** reports the results from a content analysis of 105 job advertisements and revealed the range of industries that require event management specialists or skills, and a series of required skills and key attributes of event managers which can be used as the basis for curriculum evaluation and training needs, and create a better understanding and compatibility between event management education and industry practice. The study provided an overview of the literature on employment skill and attributes requirements of event managers, outlines job advertisements as a source of workplace related skills and attributes and describes the methodology, preliminary results and implications of a web-based job advertisement study of event managers. The paper outlined below mentioned key skill specification in event management job advertisements:

Event Management Skills	Percentage of Advertisements
Organization Planning	88
Communication	85
Leadership and Decision making	38
Budget and financial management	31
Marketing	30
Team	29
Customer Service	26
Building relationships	23
Problem solving and analytical	18
Funding and sponsorship	17

**Getz Donald (2010)** examined the nature and scope of festival studies by compiling and analyzing a large-scale literature review of 423 research articles published in the English-language scholarly press, and three major discourses were enabled, namely; the roles, meanings and impacts of festivals in society and culture, festival tourism, and festival management. The paper sought to make a contribution in the areas vis-à-vis actual experience of festivals by applying phenomenological (hermeneutics) and experiential assessment methods, and cross-cultural comparisons of festivals; it further suggested that methodologies should not be restrictive, and a single epistemological paradigm (such as quantitative positivism) should not prevail. Ontological progress has to be made in defining and linking key concepts, developing a common vocabulary, and scoping the discourses, themes and topics. After discussing these theoretical advances, research gaps were identified and suggested that; to progress a field of study, greater interdisciplinarity is essential which is limited in festival studies; the three discourses do not generally inform each other, and cross-over research is rare; and methodologies should not be restrictive.

**Bowdin A J Glenn, Dr McPherson Gayle and Flinn Jenny (2006)** undertook a research on behalf of the Association for Events Management Education (AEME) which involved the collection, collation, synthesis and review of literature, primarily through desk research. Its purpose was to identify and evaluate key research already undertaken relating specifically to the definition, size and scope of the events industry, skills and skills development. The project formed the basis for continuing the focus on small firms and exploring similar issues in larger employers and to make in depth exploration of issues like labor turnover, staff retention, training and development etc.

**Janecko Ben, Mules Trevor and Ritchie Brent (2002)** reviewed basic principles of economic impact and applied them to a series of four special events held in summer-autumn at Thredbo in Kosciuszko National Park, and were part of a strategy by local tourism managers to develop a non-winter tourism season in an area where snow skiing has been the traditional attraction. A number of general research issues were reviewed, including sampling of event participants, questionnaire design, and the development of multipliers for the Snowy region. The report developed the classic multiplier drawn from Keynesian economics, and estimated the economic impact on Gross Regional Product using data available from Australian Bureau of Statistics' sources.

The study revealed that event and destination managers develop survey templates that can be applied to many events in a particular region so the economic impact of events can be compared and assessed; and provided a starting point for the development of a template and a consistent approach to the economic impact assessment of events and festivals.

**Mihaela-OanaȚară-Lungă (2012)** approached the new subject of major special events by reviewing existing literature as well as the cultural evidence in order to identify the reference perspectives in defining the concept of major special events. The research aims to bring an integrated vision starting from the meanings given in different cultural backgrounds and continuing with the analysis of the definitions and typologies in order to identify common and distinct elements. The study adopted a qualitative approach realized through comparative analysis method which further helped to determine the cultural meanings of the event.

The comparative analysis with the underlining of the temporal and spatial origin of definitions given for the special event concept allowed the identification of three defining perspectives that correspond to different fields of interest, research and action: the anthropology which emphasizes the group experience with social, psychological and cultural impact, management concentrated on the process of obtaining but also on the result to be obtained and tourism which transforms events in forms of touristic attraction.

**LangenFloris and Garcia Beatriz (2009)** offered an overview of studies measuring the various impacts of large scale cultural events in which fifty studies from both academic and consultancy backgrounds were assessed, with a focus on the methodologies used and the types of impact assessed of large scale cultural events and festivals. A total of 50 publications were identified, which were consequently grouped according to size of event type. Of these, 16 studies looked at major cultural festivals, defined as multi-annual events with an international reputation, built over a period of time. A total of 14 studies were dedicated to cultural mega events, typically large scale, and short-term events with a one-off nature, which attract the largest range of participants and media coverage. A further 20 studies were dedicated to the impact of the European Capital of Culture event, which arguably takes up a position in between the first two.

## CONCLUSION

The term event or events industry is used by a number of people in a number of different ways, with continued discussion about the development of the events industry; however, there is only limited data to support this. If the events industry is to be fully explored, researched and understood, alongside education, training and skills development, further work is required.

While the majority of studies, especially those carried out as custom-made work, still involve primarily ex-post assessments of impacts, some of the studies considered in the paper, do stretch over a number of years, typically starting some time before the event and ending sometime after its ending, which suggests that this issue is progressively being addressed. Despite the frequent reference to gaps in the available literature, the heightened visibility and ever increasing interest in hosting cultural events be it on a large, medium or small scale is having an effect on the range and quality of research approaches. Since long time,



studies are diversifying and longitudinal research, as well as multi-dimensional methodologies – beyond the economic sphere – are becoming more common and expanding beyond the academic environment. This situation calls for a follow-up literature review on this still young but quickly expanding subject matter for impact research so that we can ascertain the improvement and diversity of available literature in this area.

This study helps to determine research gaps in the event literature which will open avenues for various future researchers. Following gaps are highlighted in the paper:

- A. A lack of research in the area of indigenous events.
- B. Assessment of efficiency of organizers concerning adoption of the principles of sustainability, an identification of the current skills of event and meeting managers.
- C. Comprehensive incorporation of sustainability practices into all aspects of meeting and events management.
- D. The lack of attention for long-term impacts because a number of studies have traditional focus on short-term economic impact research.

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**A STUDY ON INVESTORS' PERCEPTION TOWARDS DERIVATIVE INSTRUMENTS AND MARKETS****DR. Y. NAGARAJU****ASSOCIATE PROFESSOR****CANARA BANK SCHOOL OF MANAGEMENT STUDIES****BANGALORE UNIVERSITY****BANGALORE****SUMAN REDDY S****RESEARCH SCHOLAR****CANARA BANK SCHOOL OF MANAGEMENT STUDIES****BANGALORE UNIVERSITY****BANGALORE****ABSTRACT**

The history of derivatives may be new for developing countries but it is old for the developed countries. The first derivatives as 'Futures' contracts were introduced in the Yodoya rice market in Osaka, Japan around 1960. The commodity derivatives market has been functioning in India since the nineteenth century with organized trading in cotton. Exchange traded financial derivatives were introduced in India since June 2000 at two major stock exchanges, NSE and BSE. There are various derivative instruments like Index Futures, Stock Futures, Index Options, Stock Options, Interest Rate Futures, Currency Options currently traded in these exchanges. But even after a decade the derivatives are actively engaged by professionals institutional investors. Many retail investors even today are not actively participating in the market because of lack of knowledge and complex nature of Instruments. This study is an attempt to know the retail investors perception and awareness about derivatives market and its instruments.

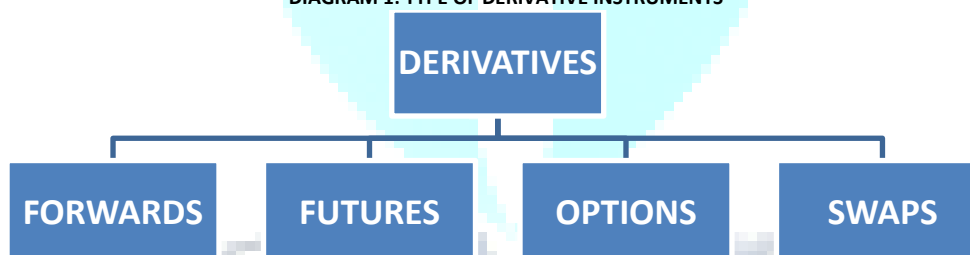
**KEYWORDS**

Derivatives, Derivatives Market, Institutional Investors, Investor Perception, Retail Investors.

**1. DERIVATIVE MARKETS**

The emergence of the market for derivative products, most notably forwards, futures and can be traced back to the willingness of risk-averse economic agents to guard themselves against uncertainties arising out of fluctuations in asset prices. By their very nature, the financial markets are marked by a very high degree of volatility. Though the use of derivative products, it is possible to partially or fully transfer price risks by looking-in asset prices. As instruments of risk management, these generally do not influence the fluctuations in the underlying asset prices. However, by locking in asset prices, derivative products minimize the impact of fluctuations in asset prices on the profitability and cash flow situation of risk-averse investors.

A derivative is financial instrument whose value is 'derived' from another underlying security or a basket of securities. Traders can assume highly leveraged positions at low transaction costs using these extremely flexible instruments. Derivative products like index futures, stock futures, index options and stock options have become important instruments of price discovery portfolio diversification and risk hedging in stock markets all over the world in recent times.

**2. DERIVATIVE INSTRUMENTS****DIAGRAM 1: TYPE OF DERIVATIVE INSTRUMENTS**

Derivative contracts have several variants. The most common variants are forwards, futures, options and swaps. We take a brief look at various derivatives contracts that have come to be used.

**FORWARDS:** A forward contract is a customized contract between two entities, where settlement takes place on a specific date in the future at today's pre-agreed price.

**FUTURES:** A futures contract is an agreement between two parties to buy or sell an asset at a certain time in the future at a certain price. Futures contracts are special types of forward contracts in the sense that the former are standardized exchange-traded contracts.

**OPTIONS:** Options are of two types – calls and puts. Calls give the buyer the right but not the obligation to buy a given quantity of the underlying asset, at a given price on or before a given future date. Puts give the buyer the right, but not the obligation to sell a given quantity of the underlying asset at a given price on or before a given date.

**SWAPS:** Swaps are private agreements between two parties to exchange cash flows in the future according to a prearranged formula. They can be regarded as portfolios of forward contracts. The two commonly used swaps are:

- Interest rate swaps: These entail swapping only the interest related cash flows between the parties in the same currency.
- Currency swaps: These entail swapping both principal and interest between the parties, with cash flows in one direction being in a different currency than those in the opposite directions.

**3. THE PARTICIPANTS IN A DERIVATIVES MARKET**

**Hedgers** use futures or options markets to reduce or eliminate the risk associated with price of an asset.

**Speculators** use futures and options contracts to get extra Leverage in betting on future movements in the price of an asset. They can increase both the potential gains and potential losses by usage of derivatives in a speculative venture.

**Arbitrageurs** are in business to take advantage of a discrepancy between prices in two different markets. If for example, they see the futures price of an asset getting out of line with the cash price, they will take offsetting positions in the two markets to lock in profit.

#### 4. REVIEW OF LITERATURE

There are few studies have been conducted to examine the impact of derivative trading on Indian stock markets.

Thenmozhi (2002), in her study on the relationship between CNX Nifty futures and the CNX Nifty index finds that derivative trading has reduced the volatility in the cash segment.

Gupta (2002) concludes in his study that the overall volatility of the stock market has declined after the introduction of the index futures.

Bandivadekarand Ghosh (2003) conclude that while the, futures effect plays a definite role in the reduction of volatility in the case of S & P CNX Nifty, in the case of BSE Sensex where derivative turnover is considerably low, the effect is rather ambiguous.

Nath (2003) observed in a study examining the impact of derivative trading at individual stock level, the volatility has come down in the post-derivative trading period for most of the stock.

Dr. Avadhani, V.A (2007) in his work explains how Fiscal, Monetary and Credit policies tend to affect the performance of the financial instruments in the capital market (either directly or indirectly) it is observed that, where fiscal policy influence the demand and supply for shares and securities in the market, prevailing interest rate influence the cost of borrowing and investment which is influenced by the monetary policies of the government. Further the credit policy is found to be greatly influencing the liquidity positions in the markets.

Bredin, Don, O'reilly, Gerard and Stevenson, Simon (2011) in their study explain how monetary policy has become the main instrument in stabilization of inflationary trends.

Papadamou, Stephen and siriopoulous, costas (2012) in their study observed the behavior of the bank after implementation of new monetary policy that the bank goes for an instantaneous reduction in lending mortgage credit, considering real estate lending as a risky long term investment. Further, affecting the short term lending to households and loans and advances extended to firms together, due to the sluggish increase in the relevant lending rates leading to increased demand for funds and impacting the spending and investment activities of both individuals as well as the firms/business centers.

#### 5. STATEMENT OF PROBLEM

The global liberalization and integration of financial markets have created new investment opportunities, which in turn require the development of new instruments that are more efficient to deal with increased risks. The most of desired instruments that allow market participants to manage risk in the modern securities trading are derivative instruments. The main logic behind trading is that derivatives reduce risk by providing additional channel to invest with lower trading cost and it facilitates the investors to extend their settlement through the future contracts. They provide extra liquidity in stock market. In India, exchange traded financial derivatives were introduced in the year 2000. But even after 13 years the institutional investors are actively engaged in this market. Only limited retail investor's trade actively in this market. Hence this present study

#### 6. OBJECTIVES OF STUDY

- To understand the concept of Derivatives and Derivative Trading.
- To analyze the perception of investors towards investment in derivative instruments and markets.
- To know different types of Financial Derivatives and their trading.

#### 7. DATA AND METHODOLOGY

This study is based on primary data. The data was collected from the 180 retail investors from distinct parts of Bangalore. The respondent investors were selected using convenient sampling method. Questionnaire is used to collect the details about awareness and perception of retail investors about various derivative products available for trading in national stock markets. The data collected was analyzed by using sample statistical technologies like percentages and graphs. This study is limited to Bangalore city and it is subject to the views expressed by the respondents.

#### 8. DATA ANALYSIS AND INTERPRETATION

TABLE 1: EDUCATION QUALIFICATION OF RESPONDENTS

Educational Qualification	No of Respondents	Percentage (%)
Under Graduate	9	5
Graduate	112	62.22
Post Graduate	43	23.89
Professional	16	8.89
Total	180	100

Source: Primary data

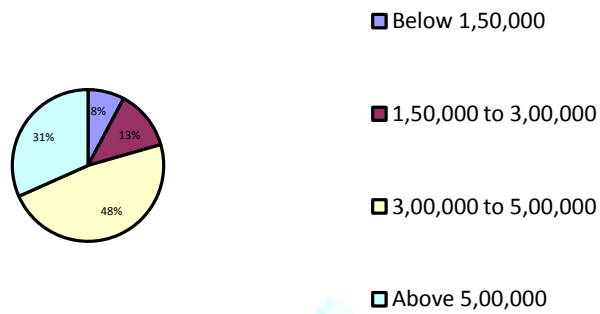


**Interpretation:** From the above table it is clear that 62% of respondents are Graduates, very less 5 % are Under Graduates

TABLE 2: ANNUAL INCOME OF RESPONDENTS

Annual Income	No of Respondents	Percentage (%)
Below 1,50,000	14	7.78
1,50,000 to 3,00,000	23	12.78
3,00,000 to 5,00,000	86	47.78
Above 5,00,000	57	31.66
Total	180	100

Source: Primary data



**Interpretation:** 47.78% of respondents' annual income is between 3,00,000 to 5,00,000 and followed by 31.66 % respondents income is above 5 lakhs

**TABLE 3: PERCENTAGE OF INCOME AVAILABLE FOR INVESTMENT**

Savings for Investments	No of Respondents	Percentage (%)
Between 5 to 10 %	23	12.78
Between 11 to 15 %	63	35
Between 16 to 20 %	82	45.55
Between 21 to 25 %	7	3.89
More than 25 %	5	2.78
Total	180	100

Source: Primary data

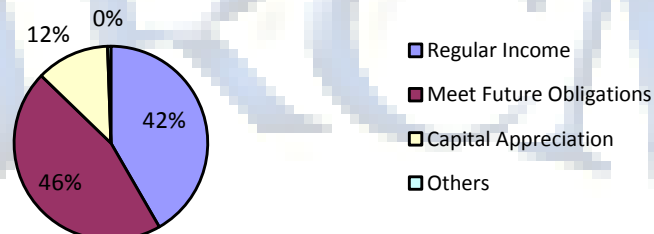


**Interpretation:** From the above table 45.55% of respondents save 16 to 20 % of their income for investments and only 3% of respondents save more than 25% of their income for investments.

**TABLE 4: RESPONDENTS' PURPOSE OF THE INVESTMENT**

Purpose of Investment	No of Respondents	Percentage (%)
Regular Income	75	41.67
Meet future obligations	82	45.56
Capital Appreciation	22	12.22
Others	1	0.55
Total	180	100

Source: Primary data

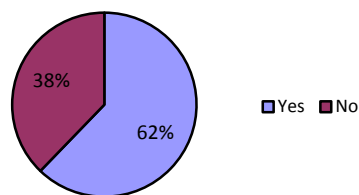


**Interpretation:** Nearly 46% of respondents investing to meet future obligations and 42% respondents are looking for regular income.

**TABLE 5: INVESTMENT BY RESPONDENTS IN DERIVATIVES**

Investment in Derivatives	No of Respondents	Percentage (%)
Yes	112	62.22
No	68	37.78
Total	180	100

Source: Primary data



**Interpretation:** 62% of respondents are invested in derivatives, and 38% of respondents are not invested in derivatives.

**TABLE 6: REASONS FOR NOT INVESTING IN DERIVATIVES**

Reasons	No of Respondents	Percentage (%)
Not Aware	21	30.88
Not Willing	25	36.76
High Risk	22	32.35
Total	68	100

*Source: Primary data*

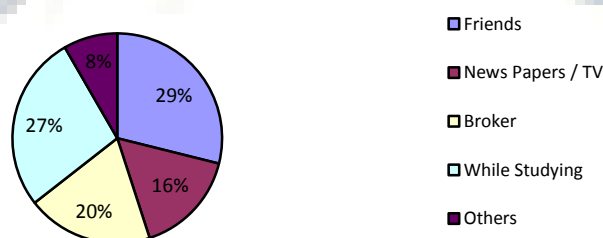


**Interpretation:** Nearly 36.76% of respondents are not willing to invest in derivatives, 32.35% of respondents are felt that derivatives are highly risky, 30.88% of respondents not aware of derivatives, so derivatives are highly risky and expected profit or loss is also high.

**TABLE 7: SOURCE OF INFORMATION ABOUT DERIVATIVES**

Source	No of Respondents	Percentage (%)
Friends	52	28.89
News Papers / TV	29	16.11
Broker	35	19.44
While Studying	49	27.22
Others	15	8.33
Total	180	100

*Source: Primary data*

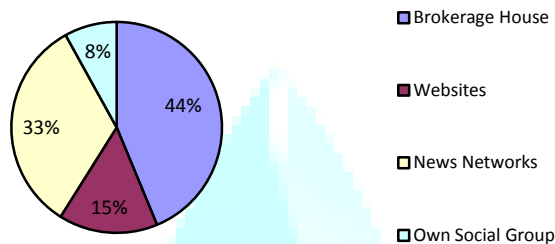


**Interpretation:** 30% of respondents know about derivatives from friends, and 27% of respondents know about derivatives while they are studying.

TABLE 8: SOURCE OF ADVISE BEFORE INVESTING IN DERIVATIVES MARKET

Source of Advice	No of Respondents	Percentage (%)
Brokerage House	49	43.75
Websites	17	15.17
News Networks	37	33.03
Own Social Group	9	8.03
Total	112	100

Source: Primary data

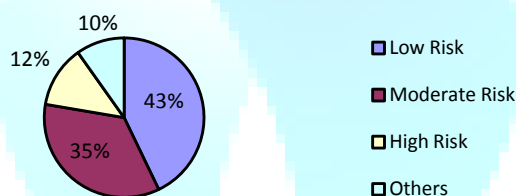


**Interpretation:** Nearly 44% of respondents are usually takes tips from Brokerage Houses, followed by 33% from News Networks and very less 8% of respondents take tips from own social groups, so derivatives are risky instruments that are the reason they are taking tips from Brokerage Houses and News Networks.

TABLE 9: KIND OF RISK INVESTOR PERCEIVE WHILE INVESTING IN DERIVATIVES MARKET

Level of Risk	No of Respondents	Percentage (%)
Low Risk	48	42.85
Moderate Risk	39	34.82
High Risk	14	12.50
Others	11	9.82
Total	112	100

Source: Primary data

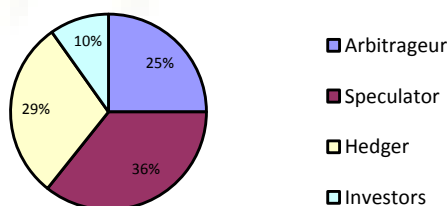


**Interpretation:** 42.85% of investors are taking low risk, and 34.82% of investors are taking moderate risk, 12.5% of investors are taking high risk.

TABLE 10: INVESTORS PARTICIPATE IN DERIVATIVES MARKET AS

Participant as	No of Respondents	Percentage (%)
Arbitrageur	28	25
Speculator	40	35.71
Hedger	33	29.46
Investor	11	9.82
Total	112	100

Source: Primary data



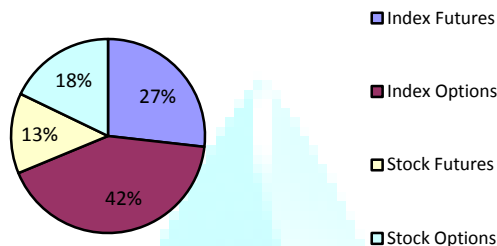
**Interpretation:** 36% of investors are speculators in derivatives market, 29% of investors are hedging for their investments, followed by 25% of investors are arbitrageurs.



TABLE 11: INVESTORS' PREFERENCE TOWARDS DERIVATIVE INSTRUMENTS (Choose only one option)

Preference	No of Respondents	Percentage (%)
Index Futures	30	26.78
Index Options	47	41.96
Stock Futures	15	13.39
Stock Options	20	17.85
Total	112	100

Source: Primary data

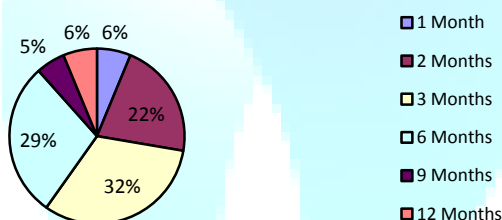


**Interpretation:** 42% of investors are more often invest in Index Options, and 27% are more often invest in Index Futures.

TABLE 12: TIME PERIOD CHOOSE FOR DERIVATIVE CONTRACTS BY INVESTORS

Time Period	No of Respondents	Percentage (%)
1 Month	7	6.25
2 Months	24	21.42
3 Months	36	32.14
6 Months	32	28.57
9 Months	6	5.35
12 Months	7	6.25
Total	180	100

Source: Primary data

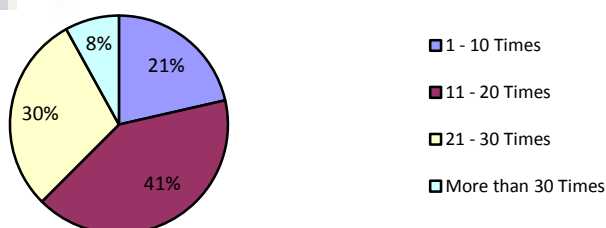


**Interpretation:** 32% of investors are taking 3 Months positions. 28.57% of investors are taking 6 Months Positions.

TABLE 13: FREQUENCY OF INVESTMENT IN DERIVATIVES IN A YEAR

Frequency	No of Respondents	Percentage (%)
1 - 10 Times	24	21.42
11 - 20 Times	46	41.07
21 - 30 Times	33	29.46
More than 30 Times	9	8.03
Total	112	100

Source: Primary data

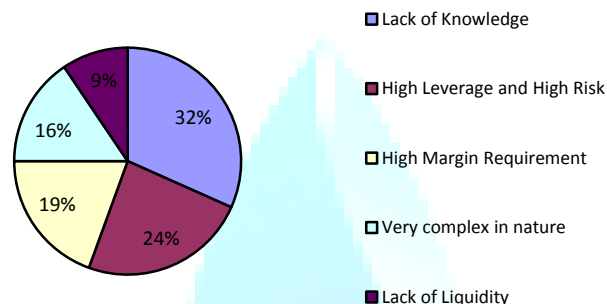


**Interpretation:** 42% of investors invest in derivatives 11 - 20 Times in a year. 8% of investors invest in derivatives very often (More than 30 Times in a year).

TABLE 14: TOP FIVE FACTORS HINDERING THE PERFORMANCE OF DERIVATIVES IN INDIAN STOCK MARKETS

Factor	No of Respondents	Percentage (%)
Lack of Knowledge	57	31.67
High leverage and high risk	43	23.89
High margin requirement	35	19.44
Very complex in nature	28	15.56
Lack of liquidity	17	9.44
Total	180	100

Source: Primary data



**Interpretation:** 32% of respondents have lack of knowledge about derivatives, 24% of respondents feel high leverage and high risk, 19% of respondents feel high margins required, 16% of respondents feel derivatives are very complex in nature.

## 9. FINDINGS FROM THE SURVEY

- 62% of respondents are Graduates, very less 5 % are Under Graduates
- 47.78% of respondents' annual income is between 3,00,000 to 5,00,000 and followed by 31.66 % respondents income is above 5 lakhs
- 45.55% of respondents save 16 to 20 % of their income for investments and only 3% of respondents save more than 25% of their income for investments.
- Nearly 46% of respondents investing to meet future obligations and 42% respondents are looking for regular income.
- 62% of respondents are invested in derivatives, and 38% of respondents are not invested in derivatives.
- Nearly 36.76% of respondents are not willing to invest in derivatives, 32.35% of respondents are felt that derivatives are highly risky, 30.88% of respondents not aware of derivatives, so derivatives are highly risky and expected profit or loss is also high.
- 30% of respondents know about derivatives from friends, and 27% of respondents know about derivatives while they are studying.
- Nearly 44% of respondents are usually takes tips from Brokerage Houses, followed by 33% from News Networks and very less 8% of respondents take tips from own social groups, so derivatives are risky instruments that's the reason they are taking tips from Brokerage Houses and News Networks.
- 42.85% of investors are taking low risk, and 34.82% of investors are taking moderate risk, 12.5% of investors are taking high risk.
- 36% of investors are speculators in derivatives market, 29% of investors are hedging for their investments, followed by 25% of investors are arbitrageurs.
- 42% of investors are more often invest in Index Options, and 27% are more often invest in Index Futures.
- 32% of investors are taking 3 Months positions. 28.57% of investors are taking 6 Months Positions.
- 42% of investors invest in derivatives 11 - 20 Times in a year. 8% of investors invest in derivatives very often (More than 30 Times in a year).
- 32% of respondents have lack of knowledge about derivatives, 24% of respondents feel high leverage and high risk, 19% of respondents feel high margins required, 16% of respondents feel derivatives are very complex in nature.

## 10. CONCLUSION

Even though most people look at derivatives with fear, they should understand the fact that derivatives help in shifting the risk to the other party. There are many myths that surround derivative market. All these can be done away with proper system in place.

Today institutional investors do most of the derivative transactions. It is very important that even individual investors participates in the derivative market actively and reap the benefits from it. Indian derivative markets have had a very good performance till date, to continue with this same growth individual investors have to be encouraged to enter into trades more often so that they help to drive the economy.

After this study it is clear that derivative instruments and derivative markets are not so popular among individual investors. Only educated investors with the help of friends and brokers are investing in this market. The reasons for not investing in this market are lack of knowledge and very complex nature of instruments. Some people have a wrong perception about derivatives. Measures should taken to make sure that the investors get a right picture of the instruments and their risk factors.

SEBI and Government should take responsibility to create awareness among investors and need to educate individual investors through different seminars or training programs regarding the advantages and risk factors associated with derivative instruments.

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# RASHTRIYA SWASTHYA BHIMA YOJANA - COMPREHENSIVE HEALTH INSURANCE SCHEME (RSBY-CHIS) IN KERALA : A STUDY ON THE EFFECTIVENESS AND UTILIZATION OF THE SCHEME WITH SPECIAL REFERENCE TO ERNAKULAM AND WAYANAD DISTRICTS

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## ABSTRACT

*Health insurance is an urgent necessity and universal coverage is the need of the hour. Rashtriya Swasthya Bhima Yojana-Comprehensive Health Insurance Scheme is a move towards this end and it is being successfully implemented in all the 14 districts of the Kerala state from the 1st year of introduction in the country. This study is an attempt to understand the effectiveness of the scheme in Kerala, with regard to its main aim of protecting low-income households from the financial burden of hospitalization expenses with special reference to Ernakulam and Wayanad districts, as these two districts are having the highest and lowest utilization of the scheme respectively. The main source of data for this study is the sample survey conducted among the hospitalized beneficiaries under the scheme. The study found out that even though the scheme has a positive role in reducing the hospitalization expenditure among the beneficiaries, low awareness level, limited number of private empanelled hospitals, poor implementation of the scheme, absence of effective monitoring mechanism and redressal of grievances, timely reimbursement to hospitals, ambiguities in the benefits of the scheme, etc., are some of the pertinent issues still persisting as constraints in achieving the desired objectives of the scheme. The program designers and policy planners may take effective steps to address the issues concerned, while making future plans in implementing the scheme more effectively or in improved forms.*

## KEYWORDS

Comprehensive Health Insurance Scheme, Health Financing, Health Insurance, Rashtriya Swasthya Bhima Yojana.

## INTRODUCTION

The level of health care spending in India is currently over 6% of its GDP. In a break up of this 6%, as much as 4.7% is accounted for by the private sector. Out of this 4.7%, 4.5% comprises out-of-pocket expenditures of households and 0.2% includes contributions from private employers and other non government organizations. Health spending averaged 11% of non food expenditures and almost 5% of the total annual expenditures of households. The NSSO 60th Round Report (2004) on "Morbidity, Health Care and the Condition of the Aged", shows two worrying developments: an increase by nearly 50% in health expenditures as compared to the last survey conducted in 1994-95; and a near stagnation in the utilization of public facilities. Without health insurance, and under the existing paradigm of a very low share of public expenditure and a very high share of unpooled expenditure, poor households are exposed to risk of impoverishment due to the cost of healthcare, and enjoy low access to healthcare due to its high cost. This conclusion has been corroborated by the World Bank; it estimated that one quarter of all hospitalized Indians fell below the poverty line as a direct result of the related medical expenses of this single event.

Among the states in India, Kerala surpasses all the other states in the levels of human development. But, now has the problem of high morbidity. State facilities exist, but due to lack of funding and shortcomings, people are forced to rely on private providers for their health care needs. Studies show that about 80% of all outpatients and about 50% of all inpatients seek health care from the private sector. But the cost of care in private sector is expensive and unaffordable to large segment of population. 'Good health at low cost in Kerala' faces serious challenges due to increased privatization.

Thus both the Indian and Kerala health financing scenes raise number of challenges and healthcare costs are the single most serious cause of impoverishment among those whose income is close to the poverty line and therefore exploring health financing options become critical. Health insurance is therefore an urgent antipoverty measure.

## HEALTH INSURANCE SECTOR

The existing health insurance schemes in India can be broadly divided into categories such as :

1. Employer based schemes (limited to concerned employees only).
2. Insurance offered by NGOs/CBHIs (limited to some specific geographical locations)
3. Mandatory health insurance schemes like ESIS, CGHS, ECHS, etc. (ESIS only cover workers in the organized sector, CGHS cover only central government employees, and ECHS cover only retired army personnel and their eligible dependants)
4. Voluntary health insurance schemes (an important viable option for all segments of society, but in spite of liberalization in 2000, these have covered only less than 2% of the population until now, the reason is its unaffordability by the masses. There are also problems and negative unintended consequences of private health insurance. All these effects will tend to increase the prices of private health care, thus hurting the uninsured).

As a result, to address such issues, governments in India have introduced,

5. Social insurance or government sponsored schemes like UHIS (Universal Health Insurance Scheme), RSBY (Rashtriya Swasthya Bhima Yojana) etc.

**UNIVERSAL HEALTH INSURANCE SCHEME (UHIS)** started in 2003, but it had problems due to poor policy design, lack of clear accountability, weak monitoring and evaluation and poor awareness among beneficiaries about the schemes.

Learning from the experiences of UHIS, another scheme known as:

**RASHTRIYA SWASTHYA BIMA YOJANA (RSBY)** was started in 2008. The scheme as originally envisaged was to cover the entire country in stages by the end of 2012-13. But government of India gave sanction for the implementation of the scheme in all the 14 districts of Kerala during 2008-09 itself. Accordingly the State Government has formulated a Comprehensive Health Insurance Scheme on the same lines of RSBY in the name RSBY-CHIS.

## RASHTRIYA SWASTHYA BHIMA YOJANA – COMPREHENSIVE HEALTH INSURANCE SCHEME (RSBY-CHIS)

The scheme was started on 02-10-2008 in Alappuzha. Insurer is United India Insurance Company. Premium per family quoted now is Rs.1274/- . BPL families need to pay only Rs 30/- towards registration fees per family. APL families need to pay premium amount of Rs.1274/- as well as registration fees.

## FEATURES OF RSBY-CHIS

**SMART CARD:** All eligible families, enrolled in to the scheme, are issued a smart Card for identification.

**COVERAGE:** Hospitalization coverage for up to Rs. 30,000 for a family of five. There is no age limit. In addition to the coverage of Rs. 30,000 available under the Central Scheme, the state government has decided to give additional coverage of Rs. 70,000 to the BPL beneficiaries for the treatment of serious diseases affecting kidney, heart etc and for cancer treatment. It has been implemented from 1st Dec, 2010, in the name of CHIS-PLUS.

**CASHLESS TREATMENT:** OP treatment is not available. Only for allopathic treatment and for treatment in general ward.

**NETWORK HOSPITALS:** These are the hospitals empanelled by insurance company in consultation with the State Government to provide cashless treatment to RSBY-CHIS beneficiaries. In Kerala as a whole, 130 public and 110 private hospitals empanelled under the scheme during the year 2011. In Wayanad and Ernakulam, the study area, 5 public and 1 private hospital and 10 public and 12 private hospitals respectively.

**PACKAGE RATES:** The charges for medical/ surgical procedures/ interventions have been pre-determined. For non surgical admission, Rs.500/day can be deducted by the hospital, for admission in I C U, Rs.1000/day can be deducted and there are different rates for surgery in accordance with its category.

**PRE-EXISTING DISEASES:** All Pre-existing diseases, unless specifically excluded, are covered under RSBY-CHIS from the day one itself.

**MATERNITY BENEFITS:** All expenses related to the delivery of the baby in the hospital are covered. For normal delivery, Rs.2500 is deducted from the smart card and it is Rs.4500 for caesarian delivery.

**EXCLUSIONS:** The scheme is not available for usual exclusions.

**TRANSPORTATION ALLOWANCE:** of Rs. 100 per hospitalization subject to an annual ceiling of Rs. 1,000. This will be paid by hospitals to the beneficiary at the time of discharge.

**PRE AND POST HOSPITALIZATION:** Expenses up to 1 day prior to hospitalization and up to 5 days from the date of discharge are available from the hospital.

**FOOD CHARGES:** Food only for the person who is hospitalized is covered in the package rate.

**ACCIDENT INSURANCE:** of Rs. 2 lakh.

## STATEMENT OF THE PROBLEM

Health insurance is an urgent necessity and universal coverage is the need of the hour. RSBY-CHIS is a move towards this end and it is being successfully implemented in all the 14 districts of the state from the 1st year of introduction in the country. Now 4 years has been completed since the launch of the scheme and there are only a few studies available about the effectiveness and utilization of this health security measure for the poor. In these contexts, it is felt necessary to make an attempt to understand the effectiveness of the scheme in Kerala, with regard to its main aim of protecting low-income households from the financial burden of hospitalization expenses with special reference to Ernakulam and Wayanad districts, as these two districts are having the highest and lowest utilization of the scheme respectively. Therefore, performance of RSBY-CHIS in terms of its effectiveness on the beneficiaries, the impact thereof and the factors, if any, affecting the proper utilization are considered as the research problem of this study.

## OBJECTIVES OF THE STUDY

The research is undertaken with the following specific objectives.

1. To study the socio-economic profile of the beneficiaries of the scheme.
2. To study the awareness level of the beneficiaries regarding the features of the scheme.
3. To evaluate the effectiveness of the scheme with regard to its main aim of protecting low-income households from the financial burden of hospitalization expenses.
4. To study the satisfaction level of the beneficiaries in the utilization of the scheme.
5. To suggest suitable measures to make the scheme more effective and useful to the beneficiaries.

## HYPOTHESES

1. There is no significant difference between Ernakulam and Wayanad beneficiaries as far as the level of awareness on the features of the scheme is concerned.
2. There is no significant difference between BPL and APL beneficiaries as far as the level of awareness on the feature of the scheme is concerned.
3. There is no significant difference in the effectiveness of the scheme in between Ernakulam and Wayanad beneficiaries.
4. There is no significant difference in the effectiveness of the scheme in between BPL and APL beneficiaries.

## METHODOLOGY

**PRIMARY DATA:** The main source of data for this study is the sample survey conducted among the hospitalized beneficiaries under the scheme.

**SAMPLING:** By using stratified sampling method, all the districts in Kerala are classified into two strata based on their hospitalization rate under the scheme. One stratum consisting of all those districts in which hospitalization rate is above the all kerala hospitalization rate of 9.34 and from this group, Ernakulam, which is having the highest rate (13.26) is taken for study and another stratum consisting of all those districts in which hospitalization rate is below the all kerala hospitalization rate and from this group, Wayanad, which is having the lowest rate (1.54) is taken for study. In the year 2010-11, there are 21,624 hospitalized beneficiaries in Ernakulam district and 885 hospitalized beneficiaries in Wayanad district and thus a total of 22509 hospitalized beneficiaries constitute the population for the study. Then, a sample of 765 BPL and 100 APL beneficiaries from Ernakulam district and 30 BPL and 5 APL beneficiaries from Wayanad district, are selected at random. There are 5 public and 1 private hospital empanelled under the scheme in Wayanad district, whereas 10 public and 12 private hospitals empanelled under the scheme in Ernakulam district. So care has been taken to see that the samples include the hospitalized beneficiaries of all network hospitals in Ernakulam and Wayanad districts. The total sample size is 900 hospitalized beneficiaries.

**SECONDARY DATA:** From official websites of RSBY, CHIAK, IRDA, United India Insurance company, etc., from officers of United India insurance company, PROs of various hospitals, Kudumbasree workers and also from different journals and periodicals published from time to time. The researcher also made discussions with officials of United India Insurance Company, TPAs, and RSBY-CHIS staff at the hospitals to gather their views.

**TOOLS OF ANALYSIS:** Analysis of data was done with the help of tools like tables, bar charts, pie diagrams etc. Mathematical tools like percentage and weighted average were also used and testing of hypotheses was done with the help of statistical tools like Chi-square test, Mann-Whitney U test and Repeated Measures Analysis.

## FINDINGS

**SOCIO-ECONOMIC PROFILE:** It has been found that the socio-economic profile of the sample beneficiaries under RSBY-CHIS were of a very low status in terms of education, occupation, income, ownership of house, its structure, type of latrines, type of drainage and the source of drinking water and light. The details in this regard re-emphasize the low economic status and poor condition of the beneficiaries. Moreover, it is also revealed that majority of the beneficiaries had only average health and they are spending a good percentage of their income on medical care and it throws light on the inevitability of a well defined health insurance scheme like RSBY-CHIS.

**AWARENESS:** It has been found that the awareness level about the scheme related details among the beneficiaries was low. Even the staffs at RSBY-CHIS help desk of the hospitals are not well educated about the scheme for which they fail to meet the queries raised by the patients. Thus there is a wide gap between project strategy and implementation level.

Awareness has been analyzed with the help of 16 features of the scheme arranged under 3 headings:

1. General awareness (5 features)
2. Awareness on procedures during admission (5 features)
3. Awareness on procedures during discharge (6 features)

The details are given in table 1.



TABLE 1: DETAILS ON AWARENESS

SI No.	Awareness	Ernakulam beneficiaries (in %)	Wayanad beneficiaries(in %)	APL beneficiaries(in %)	BPL beneficiaries(in %)	Total beneficiaries (in %)
<b>I.</b>	<b>General awareness</b>					
1.	Awareness on amount of coverage in CHIS	74.5	65.7	79.0	73.5	74.1
2.	Awareness about CHIS-PLUS	49.9	57.1	54.3	49.7	50.2
3.	Awareness on amount of coverage in CHIS-PLUS	16.2	17.1	14.3	16.5	16.2
4.	Awareness on empanelled hospitals in CHIS	34.8	34.3	25.7	36.0	34.8
5.	Awareness on empanelled hospitals in CHIS-PLUS	37.0	22.9	28.6	37.5	36.4
<b>II.</b>	<b>Awareness on procedures during admission as an in-patient</b>					
6.	Awareness on giving smartcard at the counter during admission	47.1	51.4	46.7	47.3	47.2
7.	Awareness on knowing available balance in the card during admission	35.1	62.9	54.3	33.8	36.2
8.	Awareness on fingerprint verification during admission	53.5	28.6	44.8	53.6	52.6
9.	Awareness on free medicines and tests even from outside	44.6	54.3	55.2	43.6	45.0
10.	Awareness on free food to the patient	35.7	42.9	41.0	35.3	36.0
<b>III.</b>	<b>Awareness on procedures during discharge</b>					
11.	Awareness on receiving discharge summary	37.0	22.9	28.6	37.5	36.4
12.	Awareness on fingerprint verification during discharge	47.1	51.4	46.7	47.3	47.2
13.	Awareness on receiving smartcard back	35.1	62.9	54.3	33.8	36.2
14.	Awareness on money left in the card during discharge	53.5	28.6	44.8	53.6	52.6
15.	Awareness on 5 days post hospitalization expenses	44.6	54.3	55.2	43.6	45.0
16.	Awareness on travelling allowance of Rs.100/.	35.7	42.9	41.0	35.3	36.0

Source: Primary data

Chi-square test has been done on each of the 16 features to analyze whether the economic category or the regional category of the sample is influencing level of awareness or not. It has been done on each of the categories of sample (Ernakulam, Wayanad, APL and BPL).

The details are given in table 2.

TABLE 2: CHI SQUARE ANALYSIS ON AWARENESS

SI No.	Awareness	P-value					
		in between Ernakulam APL and Ernakulam beneficiaries	in between Wayanad APL and Wayanad beneficiaries	in between Ernakulam APL and Wayanad beneficiaries	in between Ernakulam BPL and Wayanad BPL beneficiaries	In between Total APL and BPL beneficiaries	in between Total Ernakulam and Wayanad beneficiaries
<b>I.</b>	<b>General awareness</b>						
	Awareness on amount of coverage in CHIS	0.176	0.999	0.581	0.390	0.219	0.247
	Awareness about CHIS-PLUS	0.282	0.631	0.658	0.249	0.376	0.404
	Awareness on amount of coverage in CHIS-PLUS	0.732	0.561	0.603	0.596	0.567	0.880
	Awareness on empanelled hospitals in CHIS	0.029	0.999	0.601	0.759	0.038	0.950
	Awareness on empanelled hospitals in CHIS-PLUS	0.123	0.315	0.318	0.212	0.074	0.088
<b>II.</b>	<b>Awareness on procedures during admission as an in-patient</b>						
	Awareness on giving smartcard at the counter during admission	0.662	0.338	0.182	0.944	0.903	0.611
	Awareness on knowing available balance in the card during admission	0.000	0.337	0.658	0.000	0.000	0.001
	Awareness on fingerprint verification during admission	0.069	0.610	0.999	0.003	0.089	0.004
	Awareness on free medicines and tests even from outside	0.026	0.999	0.999	0.276	0.025	0.260
	Awareness on free food to the patient	0.343	0.631	0.646	0.587	0.261	0.389
<b>III.</b>	<b>Awareness on procedures during discharge</b>						
	Awareness on receiving discharge summary	0.123	0.315	0.318	0.212	0.074	0.088
	Awareness on fingerprint verification during discharge	0.662	0.338	0.182	0.944	0.903	0.730
	Awareness on receiving smartcard back	0.000	0.337	0.658	0.000	0.000	0.001
	Awareness on money left in the card during discharge	0.069	0.610	0.999	0.003	0.089	0.004
	Awareness on 5 days post hospitalization expenses	0.026	0.999	0.999	0.276	0.025	0.260
	Awareness on travelling allowance of Rs.100/.	0.343	0.631	0.646	0.587	0.261	0.473

Source: Primary data

Chi-square analysis revealed that the difference in awareness is significant in the following cases:

Awareness on empanelled hospitals in CHIS: in between Ernakulam APL and Ernakulam BPL beneficiaries and also in between total APL and total BPL beneficiaries.

Awareness on knowing the available balance in the card during admission: in between Ernakulam APL and Ernakulam BPL beneficiaries, in between Ernakulam BPL and Wayanad BPL beneficiaries, in between total Ernakulam and total Wayanad beneficiaries and in between total APL and total BPL beneficiaries.

Awareness on finger print verification during admission: in between Ernakulam BPL and Wayanad BPL beneficiaries, and also in between total Ernakulam and total Wayanad beneficiaries.

Awareness on free medicines and tests even from outside: in between Ernakulam APL and Ernakulam BPL beneficiaries and also in between total APL and total BPL beneficiaries.

Awareness on receiving smart card back during discharge: in between Ernakulam APL and Ernakulam BPL beneficiaries in between Ernakulam BPL and Wayanad BPL beneficiaries, in between total Ernakulam and total Wayanad beneficiaries and in between total APL and total BPL beneficiaries.

Awareness on receiving information on money left in the smart card during discharge: in between Ernakulam BPL and Wayanad BPL beneficiaries and also in between total Ernakulam and total Wayanad beneficiaries.

Awareness on coverage of 5 days post hospitalization expenses: in between Ernakulam APL and Ernakulam BPL beneficiaries and also in between total APL and total BPL beneficiaries.

For having a better understanding of overall awareness level of the beneficiaries, Mann-Whitney U test has been performed on the above 3 groups of features of the scheme.

The details are given in table 3.

TABLE 3: MANN-WHITNEY U TEST ON AWARENESS

Awareness	P-value					
	in between Ernakulam APL and Ernakulam BPL beneficiaries	in between Wayanad APL and Wayanad BPL beneficiaries	in between Ernakulam APL and Wayanad APL beneficiaries	in between Ernakulam BPL and Wayanad BPL beneficiaries	in between Total Ernakulam and Wayanad beneficiaries	In between Total APL and BPL beneficiaries
I. General awareness	0.550	0.299	0.430	0.911	0.664	0.421
II. Awareness on procedures during admission as an in-patient	0.080	0.185	0.393	0.437	0.256	0.051
III. Awareness on procedures during discharge	0.068	0.448	0.843	0.721	0.649	0.053
Total	0.064	0.873	0.820	0.618	0.611	0.062

Source: Primary data

Thus none of the differences in awareness level on the features of the scheme is significant and so there is no significant difference in the level of awareness among different categories of beneficiaries.

#### HYPOTHESIS H1

There is no significant difference between Ernakulam and Wayanad beneficiaries as far as the level of awareness on the features of the scheme is concerned.

P- value for Mann-Whitney U test done on Ernakulam and Wayanad beneficiaries on total awareness is 0.611, indicating that the Hypothesis can be accepted. It is concluded that there is no significant difference between Ernakulam and Wayanad beneficiaries as far as the level of awareness on the features of the scheme is concerned.

#### HYPOTHESIS H2

There is no significant difference between BPL and APL beneficiaries as far as the level of awareness on the feature of the scheme is concerned.

P- value for Mann-Whitney U test done on BPL and APL beneficiaries on total awareness is 0.062, indicating that the Hypothesis can be accepted. It is concluded that there is no significant difference between Ernakulam and Wayanad beneficiaries as far as the level of awareness on the features of the scheme is concerned.

#### EFFECTIVENESS OF THE SCHEME

It depends on the fact that whether the scheme has helped the beneficiaries to mitigate their hospitalization expenditure or not. For this, expenditure for non RSBY-CHIS hospitalization and RSBY-CHIS hospitalization incurred by the sample beneficiaries are compared. The details of average expenditure for hospitalization, both for non-RSBY and RSBY hospitalization are given in table 4.

TABLE 4: DETAILS ON AVERAGE EXPENDITURE FOR HOSPITALIZATION

Category	Average expenditure for hospitalization	APL	BPL	Total
Ernakulam	Average expenditure for non RSBY-CHIS hospitalization	5543	3362	3602
	Average expenditure for RSBY-CHIS hospitalization	594.5	565.3	568.7
	Difference in expenditure in between non RSBY-CHIS and RSBY-CHIS hospitalization	4948.5	2796.7	3033.3
Wayanad	Average expenditure for non RSBY-CHIS hospitalization	4500	3718	3863
	Average expenditure for RSBY-CHIS hospitalization	428.0	616.7	589.7
	Difference in expenditure in between non RSBY-CHIS and RSBY-CHIS hospitalization	4072	3101.3	3273.3
Combined	Average expenditure for non RSBY-CHIS hospitalization	5478	3375	3612
	Average expenditure for RSBY-CHIS hospitalization	586.6	567.3	569.5
	Difference in expenditure in between non RSBY-CHIS and RSBY-CHIS hospitalization	4891.4	2807.7	3042.5

Source: Primary data

The scheme helped all categories of beneficiaries to mitigate their hospitalization expenditure. In between APL and BPL beneficiaries, it is comparatively higher in the case of APL beneficiaries. In between Ernakulam and Wayanad beneficiaries, it is comparatively higher in the case of Wayanad beneficiaries. It is revealed that the intervention of RSBY-CHIS has protected significant section of poor households from the financial burden of hospitalization expenses.

For statistically verifying it, Repeated Measures Analysis has been applied. The results are given in table 5.

TABLE 5: REPEATED MEASURES ANALYSIS

Category		F- value	p- value
Ernakulam	Effectiveness in terms of difference in expenditure in between non RSBY-CHIS hospitalization and RSBY-CHIS hospitalization	1461.876	0.000
	Difference in effectiveness in between Ernakulam APL and BPL beneficiaries	39.485	0.000
Wayanad	Effectiveness in terms of difference in expenditure in between non RSBY-CHIS hospitalization and RSBY-CHIS hospitalization	164.125	0.000
	Difference in effectiveness in between Wayanad APL and BPL beneficiaries	0.037	0.849
Combined	Effectiveness in terms of difference in expenditure in between non RSBY-CHIS hospitalization and RSBY-CHIS hospitalization	1583.702	0.000
	Difference in effectiveness in between total APL and BPL beneficiaries	36.171	0.000
APL	Effectiveness in terms of difference in expenditure in between non RSBY-CHIS hospitalization and RSBY-CHIS hospitalization	202.478	0.000
	Difference in effectiveness in between Ernakulam APL and Wayanad APL beneficiaries	2.874	0.094
BPL	Effectiveness in terms of difference in expenditure in between non RSBY-CHIS hospitalization and RSBY-CHIS hospitalization	325.131	0.000
	Difference in effectiveness in between Ernakulam BPL and Wayanad BPL beneficiaries 1.115 0.291	1.115	0.291
Combined	Effectiveness in terms of difference in expenditure in between non RSBY-CHIS hospitalization and RSBY-CHIS hospitalization	433.044	0.000
	Difference in effectiveness in between total Ernakulam and Wayanad beneficiaries	0.409	0.523

Source: Primary data

The result showed that the scheme is effective in terms of reduction in hospitalization expenditure of the beneficiaries. It is effective in the case of all categories of beneficiaries, as the p- value is 0.000 in the case of all categories of beneficiaries. An analysis is also performed to find out whether this effectiveness is significantly different in between different categories of beneficiaries. The concerned p-value indicates that the difference is significant in between:

- Ernakulam APL and BPL beneficiaries (effectiveness higher in APL).
- Total APL and BPL beneficiaries (effectiveness higher in APL).

**HYPOTHESIS H3**

There is no significant difference in the effectiveness of the scheme in between Ernakulam and Wayanad beneficiaries.

By applying Repeated Measure Analysis, p-value for difference in effectiveness in between Ernakulam and Wayanad beneficiaries is found to be 0.523, indicating that the Hypothesis can be accepted. It can be concluded that there is no significant difference in the effectiveness of the scheme in between Ernakulam and Wayanad beneficiaries.

**HYPOTHESIS H4**

There is no significant difference in the effectiveness of the scheme in between BPL and APL beneficiaries.

By applying Repeated Measure Analysis, p-value for difference in effectiveness in between BPL and APL beneficiaries is found to be 0.000, indicating that the Hypothesis cannot be accepted. It can be concluded that there is significant difference in the effectiveness of the scheme in between BPL and APL beneficiaries.

**SATISFACTION**

It has been revealed that majority beneficiaries were having average satisfaction with the scheme and only a minority i.e. around 15% were dissatisfied. Among this 15% dissatisfied beneficiaries, majority have stated that inaccessibility to health services as the reason for dissatisfaction, which throws light on the urgent necessity of including more hospitals under the network of the scheme.

**SUGGESTIONS**

The main suggestions are:

- Reducing the high premium for the APL beneficiaries,
- Empanelling more hospitals,
- Increasing the awareness level of the beneficiaries,
- The concerned authority should organize seminars/classes for the hospital authorities about the various elements of the scheme and the roles they are expected to perform with respect to the scheme,
- Rectifying the ambiguities in the implementation of the scheme,
- Including OPD coverage,
- Timely reimbursement to hospitals, and
- Establishing a good monitoring mechanism and effective grievance redressal of the beneficiaries.

**CONCLUSION**

It is thus clear from the study that majority of the beneficiaries were having average satisfaction with the services provided through the RSBY-CHIS. It has really assisted them to reduce their hospitalization expenses and utilize better hospital facilities. Even though RSBY-CHIS has a positive role in reducing the hospitalization expenditure among the beneficiaries, low awareness level, limited number of private empanelled hospitals, poor implementation of the scheme, absence of effective monitoring mechanism and redressal of grievances, timely reimbursement to hospitals, ambiguities in the benefits of the scheme, etc., are some of the pertinent issues still persisting as constraints in achieving the desired objectives of RSBY-CHIS. The program designers and policy planners may take effective steps to address the issues concerned, while making future plans in implementing the RSBY-CHIS more effectively or in improved forms.

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## TIME USE STUDIES TO EVALUATE UNPAID CARE WORK IN KERALA

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**ABSTRACT**

*Care work, both paid and unpaid contributes to the wellbeing, economic growth and social development. Unfortunately, the burden of this unpaid care work is unequally spread in the family across gender and class. This makes the physical and mental health and wellbeing of the primary care providers out of the balance. So emergency measures are required to recognize this unpaid care work, find its magnitude and various factors and influence them. This paper examines the importance of the recognition of unpaid care work and method of estimation.*

**JEL CODE**

I310

**KEYWORDS**

Unpaid care work, time use survey, gender policy, ESNA, Becker's Theory.

**INTRODUCTION**

Traditional economic analysis conceptualized income earning activities as "work". As a result, a wide range of unpaid activities like producing goods and services for subsistence consumption, cooking, cleaning, care for children, elderly and sick persons, voluntary community services etc were not considered as work, in economic terms, as it is difficult to impute values for them. As a matter of fact, since the sixties and seventies, economists give increased attention to women's work both at the theoretical and empirical level. Discourse on the invisibility of unpaid work and the appeal for reflecting it in national accounts has triggered the use of time use survey, the best way to measure unpaid work (Budlender, 2002).

Consequently, The United Nations Statistical Commission, which is responsible for establishing and revising System of National Accounts (SNA) for the estimation of GDP, in its 1993 revision specifies a 'production boundary' which includes : goods and services produced for the market, subsistence production of goods, imputed rent and paid domestic work. But it excluded household production of 'services' on unpaid basis on the grounds that- it is difficult to impute monetary values, it has limited repercussions on the rest of the economy and the inclusion of this will have adverse impact on the effectiveness of the accounts for macro economic analysis and policy decisions (Razavi, 2007). Thus, most countries have excluded unpaid care work from their coverage of national income.

The unpaid care work that nourishes and replenishes human life and reproduces and maintains human capabilities contributes not only to economic production but also to social development of a nation. However, the cost of reproducing and maintaining the labour force in a given society remains unrecognized and undervalued as long as the scope of economic activity does not include unpaid care work. In all societies, regardless of whether developed or developing, women concentrate in unpaid care work more than men, and this leads to economic invisibility and statistical underestimation of women's work (Beneria, 1995). "This has an impact on the status of women in society, their opportunities in public life and the gender blindness of development policy"(United Nations, 1995 p:87).

We need to recognize the fact that, unpaid care work has a crucial dimension of wellbeing, not only for those who benefit from the care received but also as a cost for those who provide care, mostly women (Esquivel, 2013). Providing care has a major impact on care giver's life, the material cost in terms of time, energy, health and other resources, which can undermine their quality of life, their right to health and wellbeing. Unpaid care work also contributes to emotional and psychological cost, which have an effect on their right to education, paid employment and decision making. Thus, unpaid care work needs to be made visible (World Bank, 2001).

Unpaid work and care work, rather unrecognized productive activity in an economy, garnered increasing attention from the United Nations organizations and academic circles since the 1990s. As stated above, it led to inclusion of unpaid production of goods in national accounts, but not unpaid services. A series of United Nations intergovernmental resolutions and World Conferences namely, Fourth World Conference on Women (Beijing, September 1995) and The Social Summit (Copenhagen, March 1995) which call for the recognition and visibility of women's unpaid work and emphasize such a step for the formulation of socio-economic policies to recognize unpaid care work (World Summit for Social Development, 1995). The UNDP's Human Development Report of 1995 also has focused its special attention on women's contribution to the economic and social development of their own family, community and nation at large (United Nations HDR, 1995). Thus the analysis of unpaid care work by World Conferences on Women and several international organizations like United Nations, International Labour Organization(ILO), The United Nations International Research and Training Institute for the Advancement of Women (INSTRAW), Organization for Economic Co-operation and Development (OECD), feminist economist etc provide a state of affairs which make it impossible to disregard the issue of unpaid care work.

Despite the fact that, unpaid care work is receiving attention in high level development policy discussions of several international agencies, unpaid care continues to be overlooked and invisible in development practices and policy advocacy of several advanced and most of the developing nations. The only difference is in its degree of neglect. The strategic neglect seems to be more pronounced in the case of India. For example, India is not counting fuel and water collection in its national statistics, despite the recommendations of the SNA document revision of 1993 (Eyben & Fontana, 2011). This seems to be the result of the reluctance and negligence on the part of the political leaders to revise SNA accordingly.

**UNPAID CARE WORK AND NATIONAL ACCOUNTS**

Care - a fundamental and inevitable component of human wellbeing, social development and economic growth - can be delivered by the state, families, markets and community sectors. Families in all their diverse forms remain the key institution in meeting care needs. But the cost of providing care are unequally borne across gender and class (UNRISD Research and Policy Brief 9, 2007). In most countries the provision of care in the family continues to lie unbalanced mainly with women on an unpaid basis, which is not economically or socially valued. Thus the burden of providing unpaid care falls heavily on those who are vulnerable, have less choice and less decision making power.

Although unpaid care work has considerable economic value, it is not reflected in the economic indicators like GDP, labour force surveys etc (Hirway, 2005). For this reason, the women who work full-time in their homes on unpaid basis are considered as economically unproductive. This institutional neglect of women's work in GDP calculations is an important issue that affect her daily life, with repercussions as low status in family, society and in the economy by their spouses, various institutions and governments. The failure to 'give visibility and value' to the essential work of care giving in economic measurement leads to underestimation of the care work of women and their contribution to national economy and provides inadequate information about the state of economy. Hence, GDP is unfit to reflect unpaid care work, as "men received the lion's share of income and recognition for their economic contribution -while most of



women's work remains unpaid, unrecognized and undervalued" (UNDP 1995, P.88). This inequitable situation is allowed to continue and government continues to set economic and social policies using incomplete information.

The sustained neglect of unpaid care work is quite visible in various arenas of Indian economy too. The 2001 Census of India categorizes unpaid family worker as 'Non-workers' and classifies them in the same category of beggars, jail convicts, mental patients, disabled and students (Census of India, 2001). This is a grave injustice to over 367 million women – or 32% of the entire population and 65% of all females of India. Also among the total of those listed as non-workers in India, 74.3% are women. Such a categorization of the majority of women cannot fail to have consequences in policies and programs aimed at women.

To date, Government of India has conducted only a pilot time use survey in the year 1998, in six states namely Tamil Nadu, Meghalaya, Haryana, Madhya Pradesh, Orissa and Gujarat to collect data about time spent on non-market productive activities and on unpaid care works. In a country like India, with varied regional, spatial, occupational, economic and social differences, it is relatively insufficient to measure and understand the nature, patterns, magnitude, determinant etc of unpaid care work.

Kerala, the southernmost state of India stands apart from other states with a consistently high level of human development in par with that of several advanced nations, but with a much lower per capita income (Centre for Development Studies, 2001) (Kerala Human Development Report, 2005). As per 2011 census, Kerala has achieved the highest literacy rate (93.9%) in India, against the national literacy rate of 74% and its sex ratio is 1,064 females per 1,000 males; which is the only state in India with a sex ratio more than 1. When it comes to women's status, Kerala has been acclaimed for the achievements in the human development indicators like health status, sex ratio, education and life expectancy among the women.

Even as Kerala ranks high among the states in India in gender development index, it is facing a "gender paradox", as the much improved human development position does not necessarily mean that the socially-sanctioned responsibilities of women in the society and within the household have been lightened. A close scrutiny to these broad indicators brought up more questions. The State is well known for gender based violence, depression and suicide which can be attributed to lack of autonomy and powerlessness experienced by women in the State. This growing gender 'un-freedom' has been, and could continue to be, an impediment to the growth prospects of the state's economy. Human Development Report (Kerala Human Development Report, 2005) highlighted that one of the most serious form of capability failure in Kerala is the problem of educated female unemployment. And one of the most noticeable trends in women's employment is that they tend to cluster in a few occupations like teaching, nursing, clerical and related jobs. All these jobs are largely related to their unpaid care work in the family, so society may fail to recognize her unpaid contribution to the economy. Yet another strand about Kerala women is their poor political participation and representation.

Looking at the care economy of Kerala, it appears that economic, demographic and environmental factors created an escalating demand for family unpaid care from the part of women in the economy. It can be attributed to a range of factors including a rapidly ageing population, a high morbidity rate, life style diseases, migration, environmental degradation, climate change, climate related depletion of essential water and fuel and food resources. All the above mentioned factors intensify the care needs of the Kerala society. As the government is gradually withdrawing from the health care and education sectors, the institutional health care has become affordable only for affluent people; the poor household's care needs are often met at the cost of emotional and physical wellbeing of the primary care givers-women (Esplen, 2009). This disproportionate responsibility that women bear and the time consuming nature of care work might constraint women from engaging in paid work, and other social, political and civil engagements.

Despite the relative success of social development, inequalities across social groups are evident from the high incidence of poverty found among the rural ST (44 per cent) and SC (22 per cent) as compared to the state average of 15 per cent (Human Development Report, 2011). Residential areas/colonies without the state provision for safe piped water, fuel, basic infrastructure, health care and other services amplifies the drudgery of unpaid care work on the part of women. Government of Kerala has not conducted a full-scale time use survey to understand the magnitude of the internationally discussed issue of unpaid care work in our state. Hence, there is hardly any published research material available on Kerala directly and explicitly dealing with 'unpaid care work'. If we cannot measure the unpaid care sector of the economy, we cannot manage it to minimize poverty, gender inequality etc and to boost sustained development of the economy. Proper understanding and measurement of unpaid care work is very much warranted. Relevant data on highly gendered issue like unpaid care work is the most important pre requisite for gender sensitive programmes, schemes and prioritising allocation of resources from a gender perspective. It is also relevant to a good number of programmes, including food security, women empowerment, access to credit, political and labour force participation, new enterprise, water, sanitation and hygiene.

Micro studies are essential for engendering macroeconomics; one cannot totally understand markets without being aware of how families and households function. To evolve local specific policies and programmes, one needs to know the issues, challenges and needs of people residing in a particular locality/panchayat. With this study the researcher seeks to explore various arena of the deep rooted issue of unpaid care work, particularly, its nature, characteristics, magnitude and determinants. This can be explored by seeking answers to the questions given below.

## METHODOLOGY

The study is conducted in a small scale exploratory design utilizing cross-sectional face to face recall Interview Schedule for getting the time use data. The purpose of the design is to assess the magnitude and determinants of intra-household distribution of unpaid care work of primary male and female care givers in a household.

The information given in the following articles are helpful in providing insights about conceptual, methodological and analytical frameworks to be followed for this study -Guide to Producing Statistics on Time Use : Measuring Paid and Unpaid Work (United Nations, 2005), Reference Manual on Developing Gender Statistics: A Practical Tool (United Nations, 2010), INSTRAW, World Bank, Human Development Report (United Nations Development Programme, 1995), UN Discussion papers, ILO, Back ground papers, United Nations Research Institute for Social Development (UNRISD) Working papers, In depth Case Studies, Overview papers of countries etc. The study is conducted in the Madapally Panchayat of the Kottayam District from Kerala 315 households have been studied with both men and women primary care providers.

## RESULTS AND DISCUSSIONS

### NATURE AND CHARACTERISTICS OF UNPAID CARE WORK

This section provides the analysis of the nature of unpaid care work. The estimates are presented separately for men and women to highlight that significant gender differences prevail in respect of unpaid work.

The complete activities are grouped into eleven sub categories for the ease of research, which is similar to (slightly adapted version of) the high level categories of International Classification of Time Use Activities (ICATUS) based on SNA framework, developed by United Nations Statistical Division. Then the eleven activities are grouped into three broad categories namely 1) SNA work activities, 2) Non SNA work activities / Extended SNA / unpaid care work and 3) Non productive activities / Personal activities. The detailed discussion is made in chapter five. So this chapter discusses only the nature and characteristics of unpaid care work.

The main sub-categories of unpaid care work are house work, care of children and care of adults and community activities. Pilot study showed that community activity is very less among the respondents, especially among women, hence it is omitted from the list; instead, water / fuel collection is incorporated due to its magnitude felt especially in settlement colony households. In India, economists do not practically include collection of fuel and water in their GDP calculation. Hence it is included as a sub category of unpaid care work in the present study. House work, collection of water / fuel, care of children and care of adults in the household are the main four sub-categories of unpaid care work. The 1993 SNA revision suggested that countries should develop a 'satellite accounts' that capture unpaid care excluded from the SNA and they are termed as Extended SNA (ESNA).

### GENDER DISTRIBUTION OF UNPAID CARE WORK

In order to know the exact nature of unpaid care work it is necessary to know how it is distributed among men and women care providers. Table 1 shows that men spend an average of 0.5238 hours for unpaid care work, while women spend 9.5746 hours a day. While all women spend at least two hours for unpaid care

work, a large portion of men do not spend any time for that. This data itself shows that there is an unsymmetrical distribution of unpaid care work among the men and women care providers.

**TABLE 1: MEAN TIME SPEND FOR UNPAID CARE WORK**

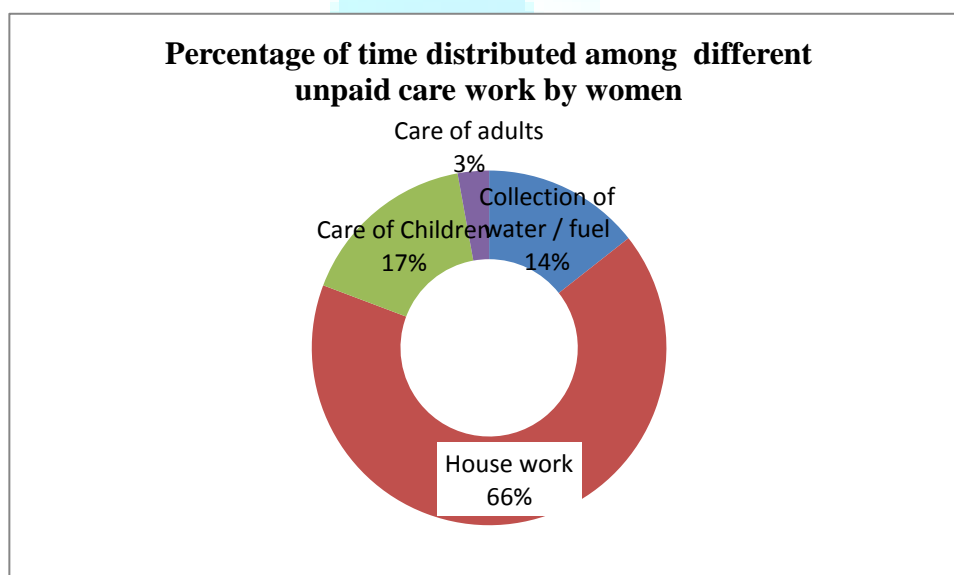
Gender	Mean	N	Std. Deviation
Men	.5238	315	1.15457
Women	9.5746	315	3.03640
Total	5.0492	630	5.07738

Source: Survey data

From ANOVA shows P value is less than 0.01, which means that the difference is highly statistically significant. Women spend much more time for unpaid care work than men. All over the world women does more unpaid care work than men. This is seen in the study area also. Yet there are high differences in the duration of unpaid care work. Even though human development achievements of Kerala economy is in par with advanced nations, in the study area, it is found that women spend a greater portion of their day time for unpaid care work. However men spend only a fraction of their time for care work. It might be due to the fact that the society is rooted in strong patriarchal structure and the prevalence of gender role is so strong in the society.

### CATEGORIES OF UNPAID CARE WORK

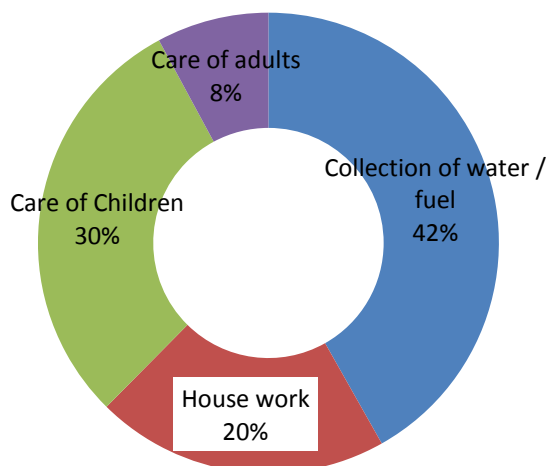
Unpaid care work can be of either direct personal care or indirect care work. Direct care work consists of care of children and the care of adults, while indirect care work refers to the collection of fuel/water and the house work. Another important characteristic of unpaid care work is that there are differences between men and women in the distribution of direct and indirect unpaid care work. It is found that women spend 66.34 per cent of their total unpaid care work time for house work, 14.38 per cent for collection of water/fuel, 16.41 per cent for care of children, and 2.85 per cent for care of adults. It is presented in the Figure 1. With respect to men, as presented in Figure 2, they spend only 20 per cent of their time for house work, but they spend 42 per cent of their time for collection of fuel/water, 30 per cent of their unpaid care work time for care of children and 8 per cent for care of adults.

**FIGURE 1: PER CENTAGE OF TIME DISTRIBUTED AMONG THE SUB-CATEGORIES OF UNPAID CARE WORK BY WOMEN**

Source: Survey data

**FIGURE 2**

### Percentage of time distributed among different unpaid care work by men



Source: Survey data

Thus women spend 80 per cent and men spend only 62 per cent of their total unpaid care work time for indirect care work. But regarding direct care work, women spend only 20 per cent of their time for it, but men spend 38 per cent. This is a characteristic of unpaid care work in developing nations that the time spent on indirect care work is much higher than that of direct care work. It might be due to inadequate public provision of key infrastructure facilities and labour saving technologies.

### HOUSE WORK/HOUSEHOLD MAINTENANCE

In all developing nations the main component of unpaid care work is house work. Routine house work includes tasks like cooking, washing, cleaning and all other home maintenance. House work accounts for 66.34 per cent of women's total time spent on unpaid care work. Women spend an average of 6.35 hours per day on house work while, men devote only 0.11 hours for it. Participation rate of men and women care providers in house work is estimated in the Table 2.

TABLE 2: HOUSE WORK

Number of hours	Women		Men	
	Frequency	Per cent	Frequency	Per cent
0	2	0.6	300	95.2
2	2	0.6	7	2.2
3	9	2.9	3	1.0
4	41	13	2	0.6
5	53	16.8	3	1.0
6	54	17.1	0	0
7	64	20.3	0	0
8	52	16.5	0	0
9	29	9.2	0	0
10	7	2.2	0	0
11	2	0.6	0	0
Total	315	100	315	100

Source: Survey data

It is found that all women (99.37 per cent) except two are engaged in household maintenance, while 300 men (95.2 per cent) do not do any house work. Per day, 95.87 per cent of women do house work for more than four hours, at the same time only 1.6 per cent of men are engaged in house work for more or less the same time. No men does house work for more than six hours, while 66.03 per cent of women spend more than six hours for house work. The Table makes it clear that the unpaid care work is distributed highly skewed towards women.

House work is the main reason for the women not engaging in any paid work. 46.6 per cent of the women responded that their main reason for not going to paid work is lack of time due to house work (Figure 6.5). It is observed that women in the poor household spend more hours for house work. It might be due to lack of income, as, most women in the poor families are either unemployed or engage in part time paid work and their income is insufficient to purchase home technology as they give priority to their children's educational and nutritional needs.

### COLLECTION OF WATER/FUEL

Among different subcategories of unpaid care work, women tend to spend 14.38 per cent of total time for collection of water and fuel. In the Table 3 it is observed that 48 per cent of women do at least one hour of water collection a day, while, 86.7 per cent of men do not do any work related to water collection. A few women are found to spend even more than 5 hours a day for water collection.

TABLE 3: COLLECTION OF WATER AND FUEL

Number of Hours	Women		Men	
	Frequency	Per cent	Frequency	Per cent
0	164	52.1	273	86.7
1	16	5.1	21	6.7
2	50	15.9	16	5.1
3	42	13.3	4	1.3
4	32	10.2	1	0.3
5	6	1.9	0	0
6	3	1	0	0
7	1	0.3	0	0
9	1	0.3	0	0
Total	315	100	315	100

Source: Survey data

It is observed that women residing in settlement colonies have to walk long distance to collect water. They opined that they are spending at least 3- 4 hours to collect water and it adversely affects their physical and emotional health. The drudgery of water collection is high during summer season and it adds much to their unpaid care work burden. It implies that the government must provide necessary infrastructure facilities like public provision of free water supply to all the needy people especially the vulnerable sections of the society, such that it may enable them to reduce their care burden and engage in other productive activities.

### CARE OF CHILDREN

Child care involves activities like meeting the basic needs of children, educational and recreational child care and travel related activities. From the Table 4 it can be observed that 89.2 per cent of men do not do any work related to care of children while only 46 per cent of women are not engaging in care of children. The possible reason is that young children may be absent in these households. 114 (36 per cent) households have only adult members in their families. It is found that women spend only 16.41 per cent of their total unpaid care work time for care of children. The low amount of time spent for care of children may be due to the fact that child care is such an activity often performed simultaneously with other house work, so women do not consider it as a work and often failed to report the exact number of hours they spend for this activity. Another reason might be due to the perception of women that it is not a 'work' and as is performed simultaneously with other domestic work and women regard this as a labour of love.

TABLE 4: CARE OF CHILDREN

Number of Hours	Women		Men	
	Frequency	Per cent	Frequency	Per cent
0	145	46	281	89.2
1	33	10.5	25	7.9
2	44	14	6	1.9
3	41	13	1	0.3
4	23	7.3	1	0.3
5	18	5.7	1	0.3
6	9	2.9	0	0
7	1	0.3	0	0
8	1	0.3	0	0
Total	315	100	315	100

Source: Survey data

Not only the total amount of time devoted for child care but also the kind of child care activities differ between men and women care givers. From the discussions it is found that majority of the women devote most of their time for physical care, such as feeding, dressing and bathing etc. and supervising, helping them in doing school home work and the like; while men spend most of their time playing with their children.

Also, when the reason for unemployment is analysed, 28.64 per cent of the unemployed women responded that the child care is the main reason for not engaging in paid work. So child care work is a determinant of the women's labour force status too.

### CARE OF ADULTS

Similar to childcare, the time spent for the care of adults is difficult to measure accurately. Women spend an average of 0.2730 hour a day for old care, but men spend only, 0.413 hours. It is found that women spend 2.85per cent of their total unpaid care work time for the care of adults, while men spend 8 per cent of their total unpaid care time for this category.

TABLE 5: CARE OF ADULTS

Number of Hours	Women		Men	
	Frequency	Per cent	Frequency	Per cent
0	258	81.9	306	97.1
1	35	11.1	6	1.9
2	17	5.4	2	.6
3	4	1.3	1	.3
5	1	0.3	0	.0
Total	315	100	315	100

Source: Survey data

Table 5 indicates that 97.1% of men do not engage in any adult care while 81.9% of women also do not have any adult care. The reason is that in 258 (81.9 per cent) households elderly persons are absent. In the study area 57 out of 315 households have elderly persons in their family. In all 57 families women devote time for elderly care work that 35 women devote one hour, 17 women spend 2 hours and 4 women spend 3 hours and one woman spend 5 hours a day for this. While among the 57 households have elderly persons, only 6 men spend one hour and 2 men spend two hours and one man spend three hours for elderly care work. Thus women spend on average more time for the care of adults than men, but the difference is much smaller when compared to childcare. From the demographic data it is evident that the number of elderly people are increasing, which points to an increase in the elderly care demands in the near future.

### REGION WISE DISTRIBUTION OF UNPAID CARE WORK

The nature of unpaid care work may differ in line with the location of household too. Analyses of the region wise distribution of time spent on unpaid care work by men and women care providers is shown in Table 6. It can be seen that there is a slight difference in the time spent on unpaid care work by men and women by region.

TABLE 6: REGION WISE DISTRIBUTION OF UNPAID CARE WORK

Region		Mean	N	Std. Deviation
North	Men	.7183	71	1.25565
	Women	10.0986	71	3.32589
	Total	5.4085	142	5.33177
East	Men	.4634	82	.98376
	Women	9.3659	82	3.07725
	Total	4.9146	164	5.01214
South	Men	.5867	75	1.30584
	Women	9.7467	75	2.86683
	Total	5.1667	150	5.10351
West	Men	.3678	87	1.06874
	Women	9.1954	87	2.86859
	Total	4.7816	174	4.92469
Total	Men	.5238	315	1.15457
	Women	9.5746	315	3.03640
	Total	5.0492	630	5.07738

Source: Survey data

It is found that women and men primary care providers of northern region do more work than other regions (women-10.0986, men- 0.71831 hours). It is followed by Southern region (women-9.7467, men- 0.5866 hours), Eastern region (women-9.3659, men- 0.4634 hours) and Western region (women-9.1954, men- 0.367816 hours). This regional disparity in unpaid care work can be attributed to the unequal distribution of resources like water, public provision of infrastructure facilities etc

The result of ANOVA reveals that the P value is greater than 0.01. So there is no statistically significant difference between the unpaid care work of men and women in different regions of the Panchayat.

### SUMMARY

The study found that the nature and characteristics of unpaid care work of women is quite different from that of men. Women spend an average of 9.5746 hours and men 0.5238 hours a day for unpaid care work. It is found that 230(73 per cent) out of 315 men do not spend any time for unpaid care work, were as

all women do some kind of unpaid care work and 95.87 per cent of women spend more than four hours for house work. Women spend 80 per cent and men spend 62 per cent of their total unpaid care work time for indirect care work. While women spend only 20 per cent and men spend 38 per cent of their unpaid care work time for direct care work.

Among different components of unpaid care work, women spend 66 per cent of their total unpaid care work time for house work, were as men spend only 20 per cent. 14 per cent, for collection of fuel/water by women and men spend 42 per cent. For the care of children, women spend 17 per cent and men spend 30 per cent of their care work time. Concerning care of adults, women spend 3 per cent and men spend 8 per cent of their total unpaid care work time. Thus there are gender differences in time spent on all categories of unpaid care work. Even though there is only slight difference in the mean time spent on total unpaid care work among regions, there are regional differences, which women of north region spend much time for the collection of fuel/water category of unpaid care work.

## CONCLUSION

Kerala is a state with Human Development Index which is par with the western countries. But the burden of unpaid care work is asymmetrically fixed on the shoulders of women due to the cultural and social taboos we maintain through generations. This results in a clear violation of human rights for the women primary care providers, who have to work for their livelihood and work again at home for the care of the family. Unfortunately, it is not properly recognized. Unless it is recognized, due justice cannot be offered to this oppressed and marginalized section of the society. Recognition of this unpaid care work helps in the formulation of new gender sensitive policies, which help to reduce the burden and magnitude of unpaid care work.

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**BOARD STRUCTURE AND BANK PERFORMANCE: AN ETHIOPIAN SURVEY****ARON HAILESELLASIE****LECTURER****DEPARTMENT OF ACCOUNTING & FINANCE****COLLEGE OF BUSINESS & ECONOMICS****MEKELLE UNIVERSITY****MEKELLE****ABSTRACT**

The board of directors of a firm is the hub of its internal governance. Apart from providing strategic direction, board of directors provides a key monitoring function for dealing with agency problems in the firm (Fama, 1980 and Jensen, 1993). In short, board of directors is constituted by shareholders to steer the affairs of their firm. The hackneyed view of board of directors is that it is generally expected to represent the interest of only shareholders by implementing measures calculated at navigating the actions of managers on the trajectory of shareholder wealth maximization. However, the boards of directors of banks, over the years, are not legally bound to represent the interest of only shareholders because of the strategic nature of the industry (Pathan and Skully, 2010). The objective of this study is to explain whether the board structure of the bank in Ethiopia determine bank performance. Multivariate regression model were used to explain the board structure of the bank for the determination of bank performance and its efficiency. The data sources for this study were board of directors and managers of the subject companies. To collect the necessary information on the board structure and performance, the study were used both primary data and secondary data. The primary data were derived from structured interview question based on the banking business proclamation, directive of the banking business of the country and Standard and Poor's (S&P) score card that were used to measure the board structure of companies. The secondary data were derived from audited annual report for the period of 2008-2012 for five years of the subject companies. Two measures were used to gauge bank performance and efficiency which is ROE and CIRATIO and multivariate regression model were used to measure the board structure and bank performance of the subject companies. The board size has positive but statistically insignificant related with bank efficiency, yet its statistically significant and positive relationship with bank profitability which implies that, a small board size increases the profitability in Ethiopia which is consistent with the extant literature. Again board remuneration has statistically significant and positive relationship with bank profitability which implies that remuneration of board is important for board of director to encourage risk taking, to increase constructive role and responsibilities. In line with this, board remuneration has statistically significant and negative relationship with bank efficiency which implies large board size incurred high operating cost which is consistent with the extant literature. The study, therefore, avers that banks seeking some improvement in their performance should constitute small-size boards of directors composed of some incentive in terms of remuneration to board of director for their constructive work.

**KEYWORDS**

Board structure, bank performance, board size, board remuneration, Ethiopia.

**1. INTRODUCTION**

Various scholars and practitioners define 'corporate governance' differently. (Fernando, 2006) Economists and social scientists, for instance, tend to define it broadly as "the institutions that influence how business corporations allocate resources and returns"; and "the organizations and rules that affect expectations about the exercise of control of resources in firms" (Jeswald, 2004). This definition encompasses not only the formal rules and institutions of corporate governance, but also the informal practices that evolve in the absence or weakness of formal rules. Corporate managers, investors, policy makers, and lawyers, on the other hand, tend to employ a narrower definition. For them, corporate governance is the system of rules and institutions that determines the control and direction of the corporation and that defines relations among the corporation's primary participants (Jeswald, 2004). The definition used in the United Kingdom's 1992 Cadbury Report is widely cited from this perspective, and it reads: "Corporate governance is the system by which businesses are directed and controlled." This narrower definition focuses almost exclusively on the internal structure and operation of the corporation's decision-making processes, and is central to public policy discussions about corporate governance in most countries (Hussein, 2012).

Good corporate governance requires competent board of directors as a supervising body for executive management of a company. The board of directors of a firm is the hub of its internal governance. Apart from providing strategic direction, board of directors provides a key monitoring function for dealing with agency problems in the firm (Fama, 1980 and Jensen, 1993). In short, board of directors is constituted by shareholders to steer the affairs of their firm. The hackneyed view of board of directors is that it is generally expected to represent the interest of only shareholders by implementing measures calculated at navigating the actions of managers on the trajectory of shareholder wealth maximization. However, the boards of directors of banks, over the years, are not legally bound to represent the interest of only shareholders (Pathan and Skully, 2010). The duty of loyalty and care of the directors and managers of banks transcends shareholders to encompass depositors and bank regulators because of the strategic nature of the industry (Macey and O'Hara, 2003; Fanto, 2006; and Pathan and Skully, 2010).

The relevant proclamations and directives governing financial companies in Ethiopia do not incorporate provisions dealing with the supervisory functions of the board of directors. Article 14(4) (c) of the Banking Business Proclamation No.592/2008 provides that "[t]he National Bank may issue directives on the duties, responsibilities and good corporate governance of board of directors." However, the NBE has not yet issued such directives although the "advancement of corporate governance principles in the financial sector is critical to fostering improvement in a business climate." The Commercial Code of Ethiopia (hereinafter the Commercial Code) incorporates provisions pertinent to the governance of share companies. However, such provisions are inadequate to address specific issues in corporate governance related to board of directors such as separation of roles of nonexecutive directors and CEOs, composition and independence of the board as well as director's remuneration. Moreover, proclamations and directives governing financial share company in Ethiopia do not sufficiently address the aforementioned issues. (Hussein, 2012)

To the best of our knowledge no empirical study has been undertaken to ascertain the relationship between board structure and bank performance. The current study, therefore, seeks to fill this gap using the primary and secondary data from banking industry in Ethiopia. Specifically, the current study seeks to find answer to two research questions:

- Does the size of a bank's board of directors significantly explain the variation in its performance?
- Does the composition of a bank's board of directors significantly account for the variation in its performance?

**2. OBJECTIVE OF THE STUDY**

The objective of this study is to explain whether the board structure of the bank in Ethiopia determine bank performance. Multivariate regression model were used to explain the board structure of the bank for the determination of bank performance and its efficiency.

### 3. REVIEW OF LITERATURE

#### 3.1. THEORIES OF CORPORATE GOVERNANCE

The literature gives due attention to three competing theories of corporate governance namely; agency, stewardship and resource dependence theories. Agency theory mainly emphasizes on the link between the interests of owners and managers. Agency theory bases on the premise that there is an inherent conflict between owners' and corporate management interests. According to Agency theory corporate governance principles are meant for providing sufficient monitoring mechanisms so as to protect shareholders from management's conflicts of interest (Fama and Jensen, 1983).

Agency theory has had its seminal impacts on corporate governance research in that, most corporate governance studies are regarding board composition versus firm performance relationships and way leadership structure of a company affects firm performance (Barnhart and Rosenstein, 1998; Hermalin and Weisbach, 1991; and Hillman and Dalziel, 2003). The findings however are not consistent and sometimes are contradictory.

Unlike agency theory, stewardship theory assumes corporate managers try to optimize resource usage let alone to have conflicts of interest (Donaldson, 1990). Though board members' independence is associated with increased firm performance (Pearce and Zahra, 1992), proponents of stewardship theory argue the other way round. One of the explanations given for the negative correlation between board independence and firm performance is the level of information asymmetry about the business undertakings (Donaldson, 1990).

The resource dependence theory of corporate governance puts the board as a mediator between the firm and the resources it requires to maximize performance. According to this theory, firm performance is highly influenced by the nature of board composition and dynamism.

The Board of Directors is a body of elected or appointed members who jointly oversee the activities of a company. It is sometimes simply referred to as "the board." A board's activity is determined by the powers, duties and responsibilities delegated to it or conferred on it by authority outside itself. "Director" may be defined as "a person having control over the direction, conduct, management or superintendence of the affairs of the company" (Hussein, 2012). The definition of "director" is nowhere given under the Commercial Code of Ethiopia. The term is defined under Article 2(6) of the Banking Business Proclamation No. 592/2008 as "any member of the board of directors of a bank, by whatever title he may be referred to."

#### 3.2. BOARD SIZE AND BANK PERFORMANCE

It is apparent that a board's capacity for monitoring increases as more directors are added. This has been the position of Klein (2002) and Andres and Valledado (2008) who argue that a large board size should be preferred to a small size because of the possibility of specialization for more effective monitoring and advising functions. However, the benefit of specialization which Klein (2002) and Andres and Valledado (2008) tout may be swallowed by the incremental cost of poorer communication and decision-making associated with larger groups.

This view has been articulated by researchers such as Fama and Jensen (1983); Lipton and Lorsch (1992); and Yermack (1996) who favour small boards. Jensen (1993), for instance, has questioned the effectiveness of boards with more than about seven to eight members, arguing that such boards are not likely to be effective. He argues that large boards result in less effective coordination, communication and decision making, and are more likely to be controlled by the Chief Executive Officers of such firms. His hypothesis has since received empirical corroboration from findings by Yermack (1996) and Eisenberg et al. (1998).

Eisenberg et al. (1998), in particular, find a significant negative correlation between board size and profitability in a sample of small and midsize Finnish firms. Cheng (2008) also lends credence to Jensen's hypothesis. His study provides empirical evidence that firms with larger boards have lower variability of corporate performance. The results indicate that board size is negatively associated with the variability of monthly stock returns, annual accounting return on assets, Tobin's Q, accounting accruals, extraordinary items, analyst forecast inaccuracy, and R&D spending, the level of R&D expenditures, and the frequency of acquisition and restructuring activities.

Wu (2004) also finds that the presence of active institutional investors is associated with a tendency of firms to reduce board sizes, generally through the removal of inside directors. The above discussion is generally clear and unambiguous on small board size as an essential element or condition for board effectiveness. This lead to the following hypotheses:

*H<sub>01</sub>: The size of the board of directors of a bank significantly and negatively related to its profitability*

*H<sub>02</sub>: The size of the board of directors of a bank significantly and negatively related to its efficiency*

#### 3.3. BOARD COMPOSITION AND BANK PERFORMANCE

In companies with disperse ownership; a shareholder is usually unable to closely monitor management, its strategies and its performance for lack of information and resources. Thus, the role of the board of directors is to fill this gap between the uninformed shareholders as principals and the fully informed executive managers as agents by monitoring the agents more closely (Fekadu, 2010). The composition of board of directors refers to the number and type of directors that participate in the work of the board.

There are divergent views on remuneration of directors. Some experts on the subject are of the view that directors are generally underpaid for their work and the onerous responsibilities they shoulder. They argue that remuneration of board of directors should be seen in light of their constructive roles and responsibilities. On the other hand, the excessive practices of directors' remuneration may encourage risk taking for short term benefits. Such practices can in turn undermine the health of companies (Fernando, 2006).

According to the Commercial Code of Ethiopia, remuneration of directors are fixed annual (which is 5%-10% of share of annual net profit) and the amount of which shall be determined by a general meeting and charged against general expenses and its application to financial share companies which is considered excessive and causing conflict of interests among shareholders.

Kevin & Leigh (2003) also find that there is a strong relationship between directors' remuneration and firm performance with strong stock market. Salleh et al., (2003) also find that there is a positive but weak relationship between directors' remuneration, internal growth measures and financial performance. The above discussion is generally clear on remuneration of the board of directors as an essential element for board effectiveness and bank performance in Ethiopia. Consequently, the following hypotheses are to be tested empirically:

*H<sub>01</sub>: The proportion of remuneration of the board of directors of a bank significantly and positively related to its profitability*

*H<sub>02</sub>: The proportion of remuneration of the board of directors of a bank significantly and negatively related to its efficiency*

#### 3.4. OTHER VARIABLES

##### 3.4.1. AGE

Age has been used as a proxy for the time a bank has been in business. A bank that has been in business for long should perform better than a new bank because of learning effect. Visibility of an experienced bank's quality to its customers (Petersen and Rajan, 1997) as well as the visibility of its creditworthiness to suppliers of debt and equity (Niskanen and Niskanen, 2006) should give some operational advantages over its inexperience counterparts.

##### 3.4.2. BANK SIZE

Consistent with the literature (Bennedson et al., 2008), the size of a bank is employed as a control variable. As a bank increases in size, it is expected that it will enjoy economies of scale and, therefore, its financial performance should improve.

##### 3.4.3. FUNDS AVAILABILITY

Since banks are financial intermediaries that make their main income from lending activities, their ability to make profit depends very much on the funds available to them for lending. The study, therefore, uses total deposits reported during the financial year as proxy for funds availability.

##### 3.4.4. EDUCATIONAL QUALIFICATION OF THE BOARD OF DIRECTORS

Consistent with the literature (Bantel and Jackson, 1989; and Hitt and Tyler, 1991), education is important since more innovative banks are managed by more educated team and the type of education affects the firm's strategic decision models. Hambrick et al., (1996) showed that the growth in market share and growth in profits is positively associated with the average education level of top management team members. In the context of China, Cheng et al., (2010) showed that university degrees held by the board chairman are positively associated with seven measures of performance (earnings per share, ROA, cumulative returns, cumulative abnormal returns, change in EPS, change in ROA, and market-to-book ratio).

#### 4. MATERIAL AND METHODS

##### 4.1. POPULATION

The target population for this survey study was banking industry in Ethiopia which their share is publicly sale. Currently there are 15 commercial banks which are organized as share companies which are under full operation until the period of 2012. However, 5 of them are established after 2008; since young companies are not yet stabilized it is not logical to compare them with well established banks. Hence, 10 private commercial banks which were established before 2008 (10 banks) are totally considered in this study.

##### 4.2. DATA

To collect the necessary information on the board structure and performance, the study were used both primary and secondary data. The primary data were derived from structured interview question based on the banking business proclamation, directive of the banking business of the country and Standard and Poor's (S&P) scorecard to the board of directors, managers of the banks and policy maker of the country especially National Bank of Ethiopia in related to the board composition.

The secondary data were derived from audited annual report for the period of 2008-2012 for five years of the publicly held share company of the banking industry as well as published and unpublished documents and literatures related to the research problem. These was based from recent literature such as; articles, journals, magazines, news papers, books and periodicals report related to banking industry in Ethiopia. Pertaining to the performance of subject share companies' financial ratio such as Return on Equity and Cost-Income Ratio were used to measure the performance and efficiency of the bank.

##### 4.3. MODEL

Two measures are used to gauge bank performance and efficiency: Return on Equity (ROE) defined as profit after tax divided by total equity of a bank; and Cost-Income Ratio (CIRATIO) which is a quick test of efficiency that reflects bank non-interest costs as a proportion of net income.

These two measures represent dependent variables of the study. Board structure is in two dimensions: Board size (BSIZE) and board composition which is Board Remuneration (BREM). In line with the studies of Anderson and Reeb (2003); De Andres et al. (2005); Jackling and Juhl, (2009) board size is measured using the natural logarithm of the total number of members of the board of directors. Board composition constructed as board remuneration (BREM) is measured as the proportion of remuneration for the board of director of the bank.

Other explanatory variable are age (AGE); size (SIZE); funds available for lending (FUNDS); and Educational Qualification of the Board of Director (EQBOD). The age of a bank is measured as the natural logarithm of the total number of years the bank has been existence. The size of a bank is calculated as the natural logarithm of the total assets (Anderson and Reeb, 2003; Carter et al., 2003; and Barontini and Caprio, 2006). The amount of funds available (FUNDS) for lending is also measured as the proportion of total deposit from customers with their total equity of the bank. The educational qualification of the board of directors (EQBOD) is also measured in terms of the likert scale method.

Two of these financial performance indicators measure different aspects of bank performance. The following model has to capture two dependent continuous variables. Multivariate regression is a type of multiple regression models that allows more than two dependent variables. The Multivariate Regression model of this study can be specified as follows.

$$f(P_{ROE}, P_{CIRATIO})_{i,t} = \alpha + B1 \text{BSIZE}_{i,t} + B2 \text{BREM}_{i,t} + B3 \text{AGE}_{i,t} + B4 \text{SIZE}_{i,t} + B5 \text{FUNDS}_{i,t} + B6 \text{EQBOD}_{i,t} + \epsilon_{i,t}$$

Where:

$$f(P_{ROE}, P_{CIRATIO})$$
 is a function of multiple dependent variables consisting of Return on Equity and Cost-Income Ratio

BSIZE represents the board size

BREM represents the board remuneration

AGE represents age of the bank

SIZE represents size of the bank

FUNDS represent the amount of fund availability

EQBOD represent the educational qualification of the board of directors

$\alpha$  and  $\beta$  denote constant and regression coefficient respectively

$\epsilon$  represents the error term

TABLE 4.1: DESCRIPTION OF VARIABLES

Variable	Description
<b>Measures of Banking Performance (dependent variables):</b>	
Return on Equity (ROE)	= Profit after tax/Total Equity
Cost-Income Ratio (CIRATIO)	= Operating expenses + other costs/Income*
<b>Measures of Board Structure:</b>	
Board Size (BSIZE)	= natural logarithm of the total number of members of the BOD
Board Remuneration (BREM)	= the proportion of remuneration for the BOD of the bank
<b>Control Variables:</b>	
Age of the Bank (AGE)	= the natural logarithm of the total number of years
Size of Bank (SIZE)	= the natural logarithm of the total assets
Funds for Lending (FUNDS)	= the proportion of the total deposits from customer over total equity
Educational Qualification of the BOD (EQBOD)	= measured in terms of likert scale methods

\* the lower the ratio the better. Thus, a bank that experiences a decline in this ratio become more efficient and vice versa

#### 5. RESULTS AND DISCUSSION

The correlation matrices in Appendices A below indicate that the degree of correlation between each pair of independent variables is low which suggests the absence of multicollinearity problem in the model (Bryman and Cramer, 1997).

In Table 5.1 shows that bank profitability is statistically significant and negatively related with board size, which implies that a reduction in the board size of a bank is likely to trigger an increase in its profitability. This finding is consistent with the finding of Fama and Jensen (1983); Lipton and Lorsch (1992); Yermack (1996); Eisenberg et al. (1998); and Cheng (2008), they argue that large boards result in less effective coordination, communication and decision making, and are more likely to be controlled by the Chief Executive Manager of such banks. Therefore, hypothesis  $H_{a1}$  is supported by the result. Table 5.2 shows that bank efficiency is statistically insignificant, though the literatures such as Fama and Jensen (1983); Lipton and Lorsch (1992); Yermack (1996); Eisenberg et al. (1998); and Cheng (2008), evidence adduced in table 5.2 shows that the argument that the size of the board of a bank increases, its efficiency deteriorates whereas other researchers such as Klein (2002) and Andres and Vallelado (2008) argue that large board size should be preferred because of the possibility of specialization for more effective monitoring and advising function is uncorroborated. It shows that banks in Ethiopia that constitute large boards of directors should be saddled with some significant decline in their efficiency. In this regard, the hypothesis  $H_{a2}$  in related with efficiency is unsupported or rejected.

As shows in Table 5.1, Board remuneration is statistically significant and positively relationship with bank profitability. This finding is in consistent with the finding of Fernando (2006); Kevin and Leigh (2003); and Salleh et al., (2003), they argue that remuneration of board of director are strong relationship with bank performance because it encourage risk taking, it increase their constructive role and responsibilities. Therefore, hypothesis  $H_{b1}$  is supported by the result. As shows in table 5.2 again, board remuneration is statistically significant and negative relationship with bank efficiency. Though board remuneration is important for bank financial performance, but also high payment of board remuneration will decrease bank efficiency since large board size will also incurred high cost and it will reduce bank efficiency. This finding is in consistent with the finding of Fernando (2006); Kevin and Leigh (2003); and Salleh et al., (2003). In this regard, the hypothesis  $H_{b2}$  in related with efficiency is supported by the result.

There is no significant relationship between age of the bank and its financial performance has been found. Although the table 5.1 and 5.2 shows that there is negatively relationship between the age of the bank and its profitability and efficiency, yet this is statistically insignificant. It supposed that the age of the bank is not synonymous with its profitability and efficiency. The age of the bank is not the factor since the bank supervision and monitoring system of the country is very strong and the policy environment are also suitable for young bank as well.

As shown in Table 5.1 and 5.2, the size of the bank has statistically significant with bank profitability and efficiency of the bank. This finding is in consistent with Bennedsen et al., (2008). This shows that as a bank increases in size, it is expected that it will enjoy economies of scale and therefore, its financial performance will improve.

As shown in Table 5.1, the fund available for lending of the bank has statistically significant with bank profitability. High cost of fund could be one of the factors that have accounted for this. High cost of funds can negatively affect profitability if a bank is unable to lend the funds for higher returns after acquiring them. As table 5.2 shows that as a bank mobilizes more funds, its efficiency deteriorates. Again high cost of funds could be fingered as a possible factor.

There is no significant relationship between educational qualification of the board and its financial performance has been found. Although the table 5.1 and 5.2 shows that there is positive relationship between the educational qualification of the board and its profitability and efficiency, yet this is statistically insignificant. It supposed that educational qualification of the board is not synonymous with its profitability and efficiency. The educational qualification of the board is not the factor since the bank can run effectively in Ethiopia since the board can hire expert for consultant in related to banking industry.

**TABLE 5.1: REGRESSION RESULT**  
**PANEL A: RETURN ON EQUITY (ROE)**

reg roe boardsize boardremuneration ageofthebank sizeofthebank fundingforlending educationalqualificationoftheboard year						
Source	SS	df	MS	Number of obs = 50		
Model	.571651476	7	.081664497	F( 7, 42)	= 15.19	
Residual	.225819511	42	.005376655	Prob > F	= 0.0000	
				R-squared	= 0.7168	
				Adj R-squared	= 0.6696	
Total	.797470987	49	.016274918	Root MSE	= .07333	
roe	Coef.	Std. Err.	t	P> t	[95% Conf.Interval]	
boardsize	-.018777	.00706	-2.66	0.011	-.0330248	-.0045293
boardremun~n	2.651677	.6873983	3.86	0.000	1.264451	4.038903
ageofthebank	-.0053966	.0078881	-0.68	0.498	-.0213155	.0105223
sizeofthebank	1.08e-11	4.23e-12	2.55	0.015	2.25e-12	1.93e-11
fundingfor~g	-.1255318	.0961173	-1.31	0.199	-.3195045	.0684408
educationa~d	.000803	.0092216	0.09	0.931	-.0178069	.019413
year	.0753313	.0134469	5.60	0.000	.0481943	.1024683
_cons	-151.0822	26.96402	-5.60	0.000	-205.4978	-96.6666

**TABLE 5.2: REGRESSION RESULT**  
**PANEL A: COST-INCOME RATIO (CIRATIO)**

reg ciratio boardsize boardremuneration ageofthebank sizeofthebank fundingforlending educationalqualificationoftheboard year						
Source	SS	df	MS	Number of obs = 50		
Model	1.38499593	7	.197856562	F( 7, 42)	= 4.32	
Residual	1.92467611	42	.045825622	Prob > F	= 0.0011	
				R-squared	= 0.4185	
				Adj R-squared	= 0.3215	
Total	3.30967204	49	.067544327	Root MSE	= .21407	
ciratio	Coef.	Std. Err.	t	P> t	[95% Conf.Interval]	
boardsize	.0128241	.0206113	0.62	0.537	-.0287712	.0544194
boardremun~n	-5.501602	2.006811	-2.74	0.009	-9.551511	-1.451693
ageofthebank	-.0051817	.0230289	-0.23	0.823	-.0516559	.0412925
sizeofthebank	-2.45e-11	1.23e-11	-1.99	0.053	-4.94e-11	3.83e-13
fundingfor~g	1.126839	.2806079	4.02	0.000	.5605496	1.693129
educationa~d	.0339218	.0269218	1.26	0.215	-.0204087	.0882522
year	-.1028604	.0392573	-2.62	0.012	-.1820849	-.023636
_cons	206.4323	78.71958	2.62	0.012	47.5698	365.2949



## 6. CONCLUSIONS

Board of Directors is among the most venerable instruments of corporate governance. Directors can not only protect the interest of shareholders through effective controls of managerial action, but also have the potential to render valuable service to the firm in the shaping of its strategic posture. Although board size has positive but statistically insignificant related with bank efficiency, yet its statistically significant positive relationship with bank profitability which implies that a small board size increases the profitability in Ethiopia which is consistent with the extant literature. The research conclude that the board remuneration has statistically significant and positive relationship with bank profitability which implies that remuneration of board is important for board of director to encourage risk taking, to increase constructive role and responsibilities. In line with this, board remuneration has statistically significant and negative relationship with bank efficiency which implies large board size incurred high operating cost which is consistent with extant literature. The research, therefore, avers that banks seeking some improvement in their performance should constitute small-size boards of directors composed of some incentive in terms of remuneration to board of director for their constructive work.

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## APPENDIX A

cor year boardsize boardremuneration ageofthebank sizeofthebank fundingforlending  
 educationalqualificationofthebod  
 (obs=50)

	year	boardsize	boardr~n	ageoft~k	sizeof~k	fundin~g	educat~d
year	1.0000						
boardsize	-0.0164	1.0000					
boardremun~n	-0.5344	-0.0479	1.0000				
ageofthebank	0.5867	-0.2681	-0.0610	1.0000			
sizeoftheb~k	0.4108	-0.4521	-0.0589	0.7463	1.0000		
fundingfor~g	0.3247	-0.2155	0.2880	0.5137	0.3710	1.0000	
educationa~d	0.3080	0.0013	-0.4469	-0.0675	-0.0568	-0.3209	1.0000



**FINANCIAL DISCLOSURE IN THE ANNUAL REPORTS OF LIBYAN BANKS: FROM PREPARERS' PERSPECTIVES**

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**ABSTRACT**

*The aim of study is to examine and explore the perceptions and attitudes of preparers of accounts about Libyan banks' financial disclosure practices. The data analysis in the present study is based on a questionnaire survey. The results illustrate that the Libyan banks comply reasonably well with existing mandatory disclosure requirements. All the preparer groups questioned are quite satisfied with the quality and the quantity of the existing financial disclosure in Libyan banks' annual reports both in absolute terms and especially relative to other sectors. Encouragingly, it appears that the development of the Libyan stock market is seen as overwhelmingly positive in terms of financial reporting in the banking industry.*

**KEYWORDS**

Libya Banks; Preparers; Disclosure; Financial Reports.

**1. INTRODUCTION**

Disclosure is "the communication of economic information, whether financial or non-financial, quantitative or qualitative relating to an enterprise's financial position and performance" (Owusu-Ansah, 1998, p. 608). There are many avenues in addition to the annual report that can be used by entities to disclose financial information (e.g., prospectus, interim report, press coverage, journals, newspapers, government publications, interviews with officials, seminars), but the annual report is the only document produced regularly to comply with mandatory requirements and -more importantly- is central to the organisation's construction of its own external image (Gray et al., 1995). Thus, annual reports are perceived as a very important medium for communication of corporate information (Lee and Tweedie, 1975). This study considers the perceptions of preparers of annual reports about the financial information disclosed in Libyan banks' annual reports.

**2. PROBLEM OF THE RESEARCH**

In addition to the need for evidence on disclosure practices in the global banking sector, the focus on Libya is particularly timely, as the nation is undergoing a series of major economic and market reforms including liberalisation, privatisation and stock market development programmes. The underlying aim of these reforms is to enhance economic performance and efficiency and create an attractive investment climate that encourages both domestic and foreign investment. The literature on the attitudes and perceptions of preparers of annual reports is sparse and to date has focused largely on developed countries (for example, Chandra, 1974; Chandra and Greenball, 1977). While the literature on users' perceptions of annual reports in emerging economics has developed over the last twenty or so years (Wallace, 1988; Solas and Ibrahim, 1992), the literature on preparers' perceptions in such nations has only grown to its current -limited- extent (e.g. Abu-Nassar and Rutherford, 1995; Ho and Wong, 2003). Therefore, the main questions are:

- 1- What are the perceptions of preparers of annual reports about the financial disclosure in the Libyan banks?
- 2- Are there any significant differences among preparers of annual reports in terms of perceptions about financial disclosure in Libyan banks' annual reports?

**3. OBJECTIVES OF THE RESEARCH**

The main aim of this study is to study and explore the perceptions and attitudes of preparers of accounts about Libyan banks' financial disclosure practices.

**4. SIGNIFICANCE OF THE RESEARCH**

The timeliness of this study, in terms of Libyan economic/political changes, enhances its likely importance to Libyan accounting standard-setting bodies and other relevant law makers, in evaluating the preparers' perceptions of current financial disclosure practices. In addition, this study also has a special importance because it is, to the best of this researcher's knowledge, the first specific investigation of the financial disclosure practices of Libyan banks. No attempt has been made to date to evaluate the perceptions and opinions of preparers of annual reports about Libyan banks' financial disclosure. More generally, this study will also provide a rich description of the present status of financial disclosure not just in Libya, but by expanding the limited literature on financial accounting in the North African region as a whole.

**5. LITERATURE REVIEW**

Chandra (1974) examined the extent of consensus between public accountants and security analysts and found that there was no consensus between accountants and financial analysts in terms of the information items' role as factors in equity investment decisions. The paper suggested several possible explanations for the lack of consensus: (i) A lack of communication between the users and preparers of the information; (ii) A time lag between what the users requirements and the preparers' delivery; and (iii) Accountants' tendency to comply with the traditional order, instead of experimenting with new ideas and methods of identifying users changing information needs.

Chandra and Greesball (1977) investigated the needs of information of managers (who were divided into preparers of annual reports and users) and security analysts in an attempt to explain management's reluctance to disclose on 'value of information' grounds. The findings of study revealed that managers as preparers differed significantly in terms of the perceived value of the information items from security analysts for 46 out of the 58 items, while managers as users differed from security analysts for 41 items. In contrast, managers as preparers and as users differed from each other for only 22 items. The latter result revealed that managers as preparers did not consider the information more valuable than they did as users.

Abu-Nassar and Rutherford (1995) who investigated the perceptions of preparers of external financial reports in Jordan. The findings of the study revealed three main results. First, preparer groups considered the directors and management of the company to be the most important users of annual reports, while the finance director was regarded as the most important influence on the preparation of financial reports. Second, the most important factor influencing accounting policy choice and disclosure was found to be the Companies Act followed by proposals from auditors and tax authorities. Third, the expenses involved in preparing information were considered to be the most significant cost of disclosure, whilst competitive disadvantage and disadvantage in collective bargaining processes were regarded as being of less importance.

Ho and Wong (2003) to explore the perceptions of preparers of annual reports of Hong Kong listed companies about a variety of reporting and disclosure issues. The results revealed that institutional shareholders were perceived as the most important users of Hong Kong companies' annual reports. The findings also revealed that the CFOs or finance directors were regarded as the most influential group affecting corporate disclosure policies. In terms of major external bodies, the Hong Kong Exchange (HKEx) was perceived to have the most important influence on the corporate disclosure policy.

## 6. RESEARCH METHODOLOGY

This study was carried out via a questionnaire survey. A questionnaire survey is used to examine the opinions of preparers of annual reports in order to evaluate and investigate perceptions of Libyan banks' financial disclosure practices. The preparer groups who are targeted by the questionnaire survey are: general managers; deputy general managers; managers of accounting departments; and accountants. Table 1 outlines the distribution numbers and response rates for the questionnaires as well as the rate of response for each group and for the whole sample.

**TABLE 1: QUESTIONNAIRE DISTRIBUTION AND RESPONSE RATES OF THE QUESTIONNAIRES**

Preparers	Distribution Number	Responses	Rate of Response
General managers	10	7	70%
Deputies of general managers	10	6	60%
Managers of accounting departments	20	12	60%
Accountants	35	29	82.8%
<b>Total</b>	<b>75</b>	<b>54</b>	<b>72%</b>

The questionnaire was divided into two main parts. The majority of questions were designed to ask respondents to record their perceptions according to a five-point Likert scale. To obtain a score for these questions, the mean score was calculated. In addition, the views of the four groups of preparers were compared using Kruskal-Wallis  $H$  statistics.

## 7. RESEARCH HYPOTHESES

This study seeks to test the following null hypotheses:

1. H1: There is no significant difference among the groups of preparers about the degree of Libyan banks' compliance with existing mandatory disclosure requirements.
2. H2: There is no significant difference among the preparer groups in terms of perceptions of the quality and quantity of financial disclosure in Libyan banks' annual reports.
3. H3: There is no significant difference among the groups of preparers in terms of the quality and quantity of financial disclosure in Libyan banks' annual reports relative to other sectors.
4. H4: There is no significant difference among the groups of preparers about the importance of the LSM's role regarding Libyan banks' financial disclosure practices.
5. H5: There is no significant difference among the preparers of accounts about the effects of recent economic reforms on financial disclosure practices in Libyan banks' annual reports.
6. H6: There is no significant difference among the groups of preparers about the normative statements regarding financial disclosure practices within Libyan banks' annual reports.

## 8. EMPIRICAL RESULTS

### *The Profile of the Preparers*

In Section 1 of the questionnaire, respondents were asked several questions regarding their occupations, age, experience, qualifications, educational level and place of study. It is generally considered to be useful to have an overall idea of the socio-economic and demographic characteristics which might provide insights regarding the source of diversity in a sample of questionnaire responses.

The first part of Section 1 dealt with the broad issue of preparers' occupation. An inspection of Table 2, which summarises these results, reflects the targeting of four specific types of preparers, (based upon differences in the likely nature and extent of involvement in the preparation of Libyan banks' annual reports), i.e. general managers, deputy general managers, managers of accounting departments and accountants.

**TABLE 2: THE PERSONAL PROFILE OF TARGET PREPARER GROUPS**

Description	Preparer-groups				Whole sample
	General managers	Deputy general managers	Managers of accounting departments	Accountants	
<b>Sample size</b>					
Count	7	6	12	29	54
Percentage	13	11.1	22.2	53.7	100
<b>Age (years)%</b>					
22-25	-	-	-	24.1	13.0
26-35	-	-	25.0	41.4	27.8
36-45	28.6	33.3	16.7	20.7	22.2
Over 45	71.4	66.7	58.3	13.8	37.0
<b>Experience (years) %</b>					
Less than 1	-	16.7	-	10.3	7.4
1-5	-	-	16.7	41.4	25.9
5-10	-	33.3	16.7	20.7	18.5
10-15	14.3	-	-	3.4	3.7
Over 15	85.7	50.0	66.7	24.1	44.4
<b>Professional Qualification %</b>					
Yes	71.4	83.3	91.7	89.7	87.0
No	28.6	16.7	8.3	10.3	13.0
<b>Level of Education %</b>					
Diploma	28.6	33.3	25.0	37.9	33.3
Bachelors Degree	57.1	50.0	66.7	44.8	51.9
Masters Degree	-	-	-	13.8	7.4
PhD	-	-	-	-	-
Other (Advanced Diploma)	14.3	16.7	8.3	3.4	7.4
<b>Place of Study %</b>					
Libya	85.7	100.0	91.7	93.1	92.6
Other Arabic Country	14.3	-	8.3	3.4	5.6
UK	-	-	-	-	-
USA	-	-	-	3.4	1.9

**Note:** this table details the numbers of respondents in each of the four preparer groups both in total and when disaggregated on various characteristics.

The table illustrates the distribution of the respondents across the four groups. Of the 54 respondents, 7 (13%) were general managers, 6 (11%) were deputy general managers, 12 (22%) were managers of accounting departments and the remaining 29 (53%) represented accountants. As can be seen from Table 2, most of the respondents (37%) were older than 45, with 27.8% aged between 26 and 35 years old and 22.2% between 36 and 45. These averages mask some variability across the sample; for example, amongst the accountants, less than 14% were in the oldest group, compared with more than 70% of general managers. These, and other differences outlined below, illustrate the importance of identifying groups of respondents rather than assuming that the sample are homogeneous both in background and likely response to the questionnaire. With regard to time spent in current position, Table 2 reveals that 44.4% of the participants had more than 15 years of experience, while only 7.4% of participants reported having been in place less than one year. Twenty five per cent of participants had experience of between 1-5 years; 18.5% had between 5-10 years and the remaining 3.7% of participants had experience spanning 10-15 years. Again, the accountants appear to be markedly different from the rest of the sample, in this case with untypically low levels of experience. With regard to qualifications, inspection of Table 2 indicates that 87% of the whole sample of participants is professionally qualified in accountancy or finance, although the figures for individual groups ranged from 91.7% (for managers of accounting departments) to 71.4% (for general managers).

Table 2 also outlines the educational level of participants. More than half of the sample (51.9%) had been educated to Bachelor's degree level, while 7.4% had a Masters degree. This evidence suggests that the majority of participants might be characterised as well educated, when considered in conjunction with the findings that 33.3% of participants had a diploma and 7.4% an advanced diploma. For three of the four groups, none of the respondents had a Masters degree, but 13.8% of the accountants had gained such a qualification. This result might be explained on the grounds that Masters programmes have only recently been offered by Libyan universities and academies and some accountants have been taking these degrees to enhance their career prospects. Additionally, Libyan banks' management have provided encouragement and financial support to their younger employees to help with the attainment of higher degree certificates (e.g., Wahda Bank). In contrast, the remaining three groups are all managerial in nature and, as outlined earlier, are older and have been in place longer, suggesting that in terms of both time - and the need for rapid promotion - the level of higher degree qualifications are as might reasonably have been expected. Finally, Table 2 also demonstrates the distribution of participants according to their place of study. The vast majority of the sample (92.6%) completed their studies and obtained their higher degrees from Libya, while 5.6% of participants were educated in other Arab countries (Jordan or Egypt) with the remaining 1.9% having undertaken their studies in the USA; none of the respondents studied in the UK. This evidence might again be argued to be expected, since the vast majority of respondents have either diploma or Bachelor's degree (undergraduate level) and the Educational People's Committee<sup>1</sup> has not sent Libyan students abroad for undergraduate study since the 1980s.

#### **The Degree of Libyan Banks' Compliance with Existing Mandatory Disclosure Requirements**

One of the main objectives of the current study is to assess the degree of Libyan banks' compliance with mandatory disclosure requirements, it seems therefore to be essential to elicit the preparers' perceptions about the extent of Libyan banks' compliance with existing regulations. To achieve this purpose, the respondents were asked to state their views by using a five-point Likert scale, where 1 indicates "very poor" and 5 indicates "excellent". To compare the views of four groups of preparers, a Kruskal-Wallis test was used with the null hypothesis  $H_1$  underpinning the analysis on this occasion:

**TABLE 3: PREPARERS' VIEWS ABOUT THE DEGREE OF LIBYAN BANKS' COMPLIANCE WITH LIBYAN DISCLOSURE REQUIREMENTS**

	Preparer groups				Whole sample		
	GM	DGM	MAD	AC	Mean	SD	KWS p-value
The degree of Libyan banks' compliance with existing mandatory disclosure requirements	3.571	3.400	3.167	3.107	3.211	0.775	0.487

**Notes:** R = Rank; SD = Standard Deviation; KWS = Kruskal-Wallis H significance level; GM = General managers; DGM = Deputy general managers; MAD = Managers of accounting departments; AC = Accountants. Responses are based on a Likert scale where 1 = very poor and 5 = excellent.

Table 3 reveals that all the preparer groups generated mean responses about the midpoint of 3, but the overall average was just 3.211. Noticeable is the fact that the accountant-based groups (Managers of accounting department and accountants) provided less support for the notion of mandatory compliance than did the managerial groups (General managers and Deputy general managers); this suggests that those closer to the process have greater concerns in this aspect of disclosure than do the managers of Libyan banks. This (relative) degree of apparent concern is surprising, given the limited nature of the disclosure requirements required by the Libyan regulatory bodies and laws as well as the absence of local and international accounting standards (Abulkarim, 2005). However, an alternative explanation may lie in the likelihood of the managerial-based group being less familiar with statutory requirements than accountant-based groups. The perceptions of accountants-based group might more closely reflect the genuine extent of compliance with the rules and regulations.

The findings of Kruskal-Wallis test revealed that there was no significant difference among the four preparer groups in terms of the degree of Libyan banks' compliance with existing mandatory disclosure requirements, and the null hypothesis  $H_1$  cannot be rejected.

#### **The Quality and Quantity of the Financial Disclosures in Libyan Banks' Annual Reports**

This section of the questionnaire asked for views regarding the quality and quantity of financial disclosure in Libyan banks' annual reports. To accomplish this, the respondents were once again asked to indicate their views by using a five-point Likert scale.

**TABLE 4: PREPARERS' VIEWS ABOUT THE QUALITY AND QUANTITY OF THE FINANCIAL DISCLOSURES IN LIBYAN BANKS' ANNUAL REPORTS**

Attributes	Preparer-groups				Whole sample			
	GM	DGM	MAD	AC	Mean	R	SD	KWS p-value
Relevance of the information	3.571	3.600	3.000	3.500	3.404	1	1.089	0.515
Comparability of the information	3.286	3.400	2.917	3.357	3.250	2	1.026	0.745
Quantity of information	3.429	3.600	2.917	3.250	3.231	3	0.831	0.429
Reliability of the information	3.286	3.400	3.000	3.259	3.216	4	1.006	0.768
Materiality of the information	3.571	3.400	2.917	3.214	3.211	5	1.073	0.587
Understandability of the information	3.571	3.200	2.917	3.179	3.173	6	0.834	0.290

**Notes:** R = Rank; SD = Standard Deviation; KWS = Kruskal-Wallis H significance level; GM = General managers; DGM = Deputy general managers; MAD = Managers of accounting departments; AC = Accountants. Responses are based on a Likert scale where 1 = very poor and 5 = excellent.

The factors included in this section were drawn from the conceptual framework models of the world's leading accounting authorities. Table 4 indicates that in all cases, overall means were greater than 3, suggesting that respondents were reasonably satisfied with the financial disclosures in Libyan banks' annual reports. However, most of means were little more than 3.2; with the managers of accounting departments providing means of less than 3 for four out of six factors and exactly 3 for the other two. The managerial-based groups appeared to be more satisfied than the accountant-based groups with the quality and quantity of financial disclosures in Libyan banks' annual reports. This result is consistent with the evidence in Table 3 regarding compliance with mandatory requirements, and suggests a fundamental difference in perceptions between the two broad classes of preparers. Finally, inspection of Table 4 reveals that the Kruskal-Wallis test results indicated a degree of consensus on all six attributes across the four preparers. Therefore, the null hypothesis  $H_2$  cannot be rejected.

#### **The Quality and Quantity of the Financial Disclosures in Libyan Banks' Annual Reports Relative to Other Sectors**

Having examined a series of issues relating to the perception of Libyan banks' annual reporting, in *absolute* terms, the analysis switched to state of reporting in the sector *relative* to others. The respondents were therefore given a list of the same six attributes as in Table 4 but this time were asked to judge them.

<sup>1</sup> The Educational People's Committee is the body responsible for education programmes and for sending Libyan students to study outside the country. In 2006, it resumed sending Libyan students for undergraduate study abroad.

TABLE 5: PREPARERS' VIEWS ABOUT THE QUALITY AND QUANTITY OF THE FINANCIAL DISCLOSURES IN LIBYAN BANKS' ANNUAL REPORTS RELATIVE TO OTHER SECTORS

Attributes	Preparer groups				Whole sample			
	GM	DGM	MAD	AC	Mean	R	SD	KWS p-value
Comparability of the information	<b>3.714</b>	3.800	3.500	<b>3.423</b>	<b>3.520</b>	1	0.974	0.794
Quantity of information	3.571	<b>4.000</b>	<b>3.667</b>	3.357	3.519	2	0.918	0.533
Relevance of the information	3.571	<b>4.000</b>	3.454	3.214	3.392	3	1.060	0.361
Understandability of the information	<b>3.714</b>	<b>4.000</b>	3.333	3.214	3.385	4	0.911	0.189
Reliability of the information	3.429	3.600	3.417	3.200	3.326	5	0.922	0.743
Materiality of the information	3.286	3.800	2.917	<b>3.423</b>	3.320	6	0.978	0.247

**Notes:** R = Rank; SD = Standard Deviation; KWS = Kruskal-Wallis H significance level; GM = General Managers; DGM = Deputy general managers; MAD = Managers of accounting departments; AC = Accountants. Responses are based on a Likert scale where 1 = very poor and 5 = excellent.

Table 5 illustrates that the quality and quantity of financial disclosure in Libyan banks' annual reports were considered by respondents to be strong relative to other sectors, with an overall mean of 3.520 resulting. Not only is this average above the equivalent figure in Table 4 regarding the absolute qualities of banks' annual reports, but five of the six specific aspects exhibited higher means in Table 5 than in Table 4 (the exception related to relevance). The respondents gave the attribute of comparability the highest ranking, while materiality was given the lowest ranking. The first result might be expected since Libyan commercial banks are all subject to the same regulatory supervision and instructions of the Central Bank of Libya.

Table 5 also indicates that the respondents ranked quantity of the information in second position. This result probably reflect the fact that -in addition to general Commercial law-, the CBL has legal authority to request commercial banks to reveal additional information about their activity and internal operations during the year, in order to fulfil its remit regarding supervision and monitoring, other sectors are not subject to any such statutory power to release extra information. This result is consistent with earlier emerging result studies, by Al-Shayeb (2003) and Aljifri (2008) who found that UAE banking and insurance companies disclose more information than firms in other industries. However, a recent study by Bribesh (2006) found that the manufacturing sector in Libya discloses more information than does finance sector, although the finance sector reveals more than the services and construction sectors. As can be seen from Table 5, deputy general managers were more satisfied than the other three groups regarding the six aspects of banks' disclosure put to them, while the accountants assigned the lowest level of satisfaction in most cases. Nonetheless, the overall picture of a positive view of the relative strength of annual reports in the sector is clear.

Inspection of the final column in Table 5 reveals that, once again there was no statistically significant difference across the four groups of preparers. The results therefore do not support rejection of the null hypothesis H3.

#### **The Importance of the Libyan Stock Market's Role Regarding Financial Disclosures Practices in Libyan Banks' Annual Reports**

The newly established Libyan Stock Market (LSM) is expected to play an important role in improving financial disclosure practices in Libyan corporations. The respondents were therefore given with a list of potential aspects of such a role and asked to indicate the importance they attach to these.

TABLE 6: PREPARERS' VIEWS ABOUT THE IMPORTANCE OF THE LSM'S ROLE REGARDING LIBYAN BANKS' FINANCIAL DISCLOSURE PRACTICES

Potential Roles	Preparer groups				Whole sample			
	GM	DGM	MAD	AC	Mean	R	SD	KWS p-value
Ensuring banks publish their accounts in timely fashion	<b>4.571</b>	4.600	4.333	4.458	<b>4.458</b>	1	0.617	0.829
Ensuring banks comply with statutory requirements	4.143	4.600	<b>4.500</b>	<b>4.500</b>	4.456	2	0.690	0.459
Improving the understandability of the information	4.286	4.200	4.417	4.375	4.354	3	0.699	0.930
Encouraging Libyan banks to disclose more information	<b>4.571</b>	4.600	4.167	4.292	4.333	4	0.808	0.746
Improving the comparability of the information	4.286	4.000	4.417	4.333	4.312	5	0.776	0.937
Improving the reliability of the information	<b>4.571</b>	4.400	4.167	4.250	4.292	6	0.798	0.774
Improving the relevance of the information	4.286	4.400	4.417	4.208	4.292	7	0.771	0.675
Protecting the interests of investors and other users	4.286	<b>4.800</b>	4.333	4.087	4.255	8	0.793	0.337
Improving the materiality of the information	3.857	4.000	4.167	4.208	4.125	9	0.703	0.621

**Notes:** R = Rank; SD = Standard Deviation; KWS = Kruskal-Wallis H significance level; GM = general managers; DGM = Deputy general managers; MAD = managers of accounting departments; AC = accountants. Responses are based on a Likert scale where 1 = not important at all; 5 = very important.

Inspection of Table 6 indicates that the LSM is seen as having a widespread positive influence on annual reporting in the Libyan banking sector; all nine of the statements yielded whole sample means greater than 4. Ensuring banks publish their accounts in timely fashion was ranked by respondents as the most important role that the LSM is expected to play with an overall mean of 4.458, but followed closely by the function of ensuring banks comply with statutory requirements, with a mean of 4.456. The first result indicates that preparer groups regarded the delay in publishing annual reports as the most significant problem for users of Libyan banks' annual reports. To tackle this problem the LSM has made clear that they will force all listed companies including banks, to publish their annual reports by a specified time or be subjected to penalties. The result regarding compliance with mandated rules might also be argued to be as expected because all listed firms will have to comply with the LSM's statutory disclosure requirements in order to be listed on the LSM. As in most countries, including the UK and US, market rules tend to go beyond legal rules and thereby improve corporate governance levels via increased accountability (Solomon, 2007). Thus, the development of the LSM should in future lead to improvements to disclosure practices beyond simple compliance with legal statute.

Table 6 also indicates that a role for the LSM in "improving the understandability of the information" was ranked by respondents in third position. This finding may reflect the fact that stock exchange markets often issue publications (via leaflets, textbooks or on their websites) for their customers and clients for identifying and clarifying the meanings of technical accounting words and expressions to promote users knowledge and understanding, and to ensure proper usage of the information disclosed<sup>2</sup>. The respondents considered improving the materiality of the financial information to be the least important potential role for the new exchange, but even here, then as 4.125.

The two managerial-based groups ranked "ensuring banks publish their accounts in timely fashion" and "encouraging Libyan banks to disclose more information" as the most important roles for the LSM, while the accountant-based groups considered the role of "ensuring banks comply with statutory requirements" to be the most important role. The latter result is consistent with the finding reported in Table 3 that the accountant-based groups were less satisfied about the level of Libyan banks' compliance with mandatory disclosure requirements; Therefore, these groups appear to be pinning a substantive degree of hope on the role of the LSM in ensuring compliance with reporting rules.

While accountants, and respondents as a whole, ranked the role of "protecting the interests of investors and other users" as the second least important for the new LSM, both managerial-based groups considered this to be much more important. This result might be explained on the grounds that managerial-based groups (75% of this group had more than 10 years of experience, while 14.3% of general managers had studied and attended a numbers of sessions in finance and accounting abroad<sup>3</sup>) might be more familiar with the role of a modern stock exchange in protecting the interests of finance providers than the accountant-based groups (more than 51% of whom had less than 10 years of experience).

Regarding the extent to which the differences among the four groups of preparers' answers were significant, the Kruskal-Wallis test again revealed that there was no significant difference among the groups of preparers' responses. Therefore, the results do not support rejection of the null hypothesis H4.

<sup>2</sup> For example, the LSM has issued publications on 'how to read financial statements', for more information visit <http://www.lsm.gov.ly/>.

<sup>3</sup> The majority of these sessions were conducted in Egypt and Jordan where stock markets have been introduced recently and influenced the Libyan model.



**The Potential Effects of Economic Reforms that are Expected on Financial Disclosure Practices in Libyan Banks' Annual Reports**

Libya is currently undergoing a period of major economic reforms with liberalization and privatisation programs being introduced at a rapid pace. These are aimed at reducing government expenditure and inviting the private sector to take a more effective part in shaping the national economy. Potentially, these reforms may affect many operational aspects of the Libyan corporate sector including the nature of annual reporting. Therefore, this study attempts to identify the preparers' perceptions about specific potential effects of the economic changes on banks' disclosure practices. To achieve this, the respondents were presented a list of potential impacts of the reforms and asked to express the extent of their agreement with each one.

**TABLE 7: THE POTENTIAL EFFECTS OF RECENT ECONOMIC REFORMS ON FINANCIAL DISCLOSURE PRACTICES IN LIBYAN BANKS' ANNUAL REPORTS**

Statements	Preparer groups				Whole sample			
	GM	DGM	MAD	AC	Mean	R	SD	KWS p-value
The quantity of the information will rise	4.286	4.400	4.182	<b>4.333</b>	<b>4.298</b>	1	0.623	0.854
The reliability of the information will improve	4.286	<b>4.600</b>	4.182	4.208	4.255	2	0.607	0.568
The relevance of the information will improve	4.286	<b>4.600</b>	4.182	4.208	4.255	3	0.642	0.622
The compliance with regulatory requirements will improve	<b>4.571</b>	4.400	<b>4.273</b>	4.083	4.234	4	0.560	0.176
The comparability of the information will improve	4.286	4.400	4.091	4.208	4.213	5	0.623	0.825
The materiality of the information will improve	4.286	4.400	4.000	4.208	4.191	6	0.613	0.557
The understandability of the information will improve	4.286	<b>4.600</b>	4.182	4.042	4.170	7	0.701	0.402

**Notes:** R = Rank; SD = Standard Deviation; KWS: Kruskal-Wallis H significance level; GM: General manager; DGM: Deputy general manager; MAD: Manager accounts department; AC: Accountant. Responses are based on a Likert scale where 1 = strongly disagree; 5 = strongly agree.

As was the case with the LSM reforms analysed in Table 6, the evidence in Table 7 demonstrates respondents saw multifaceted positive impact of the changes at macro-economic level on-going in Libya at the time of the research the overall mean scores were above 4 in all cases. The statement that "the quantity of the information will rise" received the strongest support, with a mean of 4.298, while the view that "the understandability of the information will improve" generated the lowest mean of 4.170. This evidence differs somewhat from Table 6; although the role of the LSM in encouraging "more information" generated a similar mean in both cases, the LSM reforms were seen as having a stronger impact on 'understandability' than did the economic once (means of 4.354 versus 4.170). This result makes sense in terms of the micro-level exchange reforms having a relatively strong impact on the clarity of annual reports than broader macro-level changes.

In all cases, inspection of Table 7 demonstrates that the two managerial-based groups see a stronger impact stemming from the reforms than do the accountant-based groups. This contrasts with the pattern evident in Table 6 regarding the impact of the development of the LSM. For example, in terms of the understandability, comparability and materiality, Table 6 reveals that both accountant-based groups saw a stronger impact of the market changes than did the general managers and their deputies. While this evidence suggests that those closer to the generation of annual reports see the stock market's role as being relatively more important than do managers, the findings again point to an underlying difference in perception across the two broad types of preparers.

With regard to whether there are any significant differences across the preparer groups' responses, the Kruskal-Wallis test suggested that there no statistically significant differences exist at the 5% level, and so the null hypothesis  $H_5$  cannot be rejected.

**Preparers' Views about Normative Statements Regarding Financial Disclosure Practices within Libyan Banks' Annual Reports**

The final part of the questionnaire was designed to obtain respondents' views about ten statements regarding specific aspects of financial disclosure practices in Libyan banks' annual reports. These statements primarily related to a series of broad normative issues underlying the more detailed earlier questions. The statements were designed to capture views about a range of potentially critical propositions regarding disclosure practices that were asked about only indirectly elsewhere in the questionnaire.

**TABLE 8: PREPARERS' VIEWS ABOUT A SET OF NORMATIVE STATEMENTS REGARDING FINANCIAL DISCLOSURE PRACTICES WITHIN LIBYAN BANKS' ANNUAL REPORTS**

Statements	Preparer groups				Whole sample			
	GM	DGM	MAD	AC	Mean	R	SD	KWS p-value
Libyan banks' external auditors should be independent of management influence	<b>4.857</b>	4.200	<b>4.818</b>	<b>4.640</b>	<b>4.667</b>	1	0.595	0.484
The CBL should play a major role in monitoring the implementation of laws and regulations	4.286	<b>4.800</b>	4.636	4.520	4.542	2	0.651	0.740
The professional skills of financial statements' preparers need to be improved	4.286	4.400	4.636	4.520	4.500	3	0.505	0.513
All the annual reports should be prepared using the same accounting standards	4.429	4.400	4.636	4.360	4.437	4	0.649	0.739
IASs should be applied to the banking sector by the Libyan authorities	4.286	3.800	4.636	4.375	4.362	5	0.870	0.682
Financial disclosure practices need to be improved	4.286	4.400	4.636	4.240	4.354	6	0.564	0.277
The CBL should play a major role in regulating and observing the disclosures	4.143	4.200	4.273	4.375	4.298	7	0.976	0.934
Reports' content should be regulated and not left to the manager	3.714	4.000	4.000	4.500	4.213	8	0.998	0.138
All annual reports should be presented using a standard format	4.143	4.000	4.300	4.000	4.087	9	0.865	0.944
Annual report should be available publicly	3.714	2.600	4.454	3.792	3.808	10	1.076	0.036*

**Notes:** R = Rank; SD = Standard Deviation; KWS = Kruskal-Wallis H significance level; GM = general managers; DGM = Deputy general managers; MAD = managers of accounting departments; AC = accountant. Responses are based on a Likert scale where 1 = strongly disagree; 5 = strongly agree. A\* indicates significance of the 5% level on the basis of a two-tailed test.

Table 8 indicates that the respondents either strongly agreed or agreed with all ten the listed normative statements regarding financial disclosure practices in Libyan banks' annual reports. The notion that Libyan banks' external auditors should be independent of management influence was given the highest of ranking by nearly all respondents, with a mean of 4.667; the exception was deputy general managers who favoured the statement that the CBL should play a major role in monitoring the implementation of laws and regulations. The result regarding auditors suggests that respondents see a need for robust external monitoring of reporting in the banking sector.

At the other extreme, the statement that "annual reports should be available publicly" generated the lowest mean of 3.808 (although managers of accounting departments ranked this statement in third position). This result suggests that preparers have only limited enthusiasm for releasing their banks' annual report to the public. However, Banking Law No. 1 of 2005 requires banks to display, -throughout the year and in an obvious place at its head office and at all of its branches-, a copy of its most recent, audited financial statements<sup>4</sup>. The accountant groups supported this statement more strongly than did the two managerial groups. This result might be explained on the grounds that 75% of the managerial-based respondents were appointed more than 10 years earlier, and may be still affected by the former situation in Libya (characterised by privacy) and laws<sup>5</sup> which still did not require management to release its annual report to the public.

<sup>4</sup> Banks are also required to publish these statements in a domestic newspaper (Article, 84).

<sup>5</sup> Commercial Law does not require companies to provide their information to the public.

Also evident from Table 8, is a perception that “the professional skills of financial statements’ preparers need to be improved”, which yield a mean response of 4.5. This result indicates that preparer groups regarded a lack of professional or qualified accountants as the most significant factor restricting the quantity of disclosure in Libyan banks’ annual reports. Respondents appear to believe that to overcome this problem the Libyan authorities should take steps to improve the professional skills of financial statements’ preparers.

Table 8 also indicates that the accountant-based groups provided relatively more support for the notion that “IASs should be applied to the banking sector by the Libyan authorities”. This result suggests that those closest to financial reporting see tangible benefits from a movement to the IAS-regime, although the most striking evidence in this regard again relates to deputy general managers, who responded with a mean of 3.8 against a whole sample figure of 4.362. Clearly this group has an idiosyncratic perspective on the accounting process in the sector.

Notwithstanding the differences noted above, a Kruskal-Wallis test was conducted for each of the ten statements. Inspection of Table 8 suggests that there were significant differences among the respondents’ views. In relation to the statement that “annual reports should be available publicly”; thus the null hypothesis  $H_0$  is rejected for this statement. As mentioned above, the main drivers of this difference are evidently the responses from the deputy general managers.

## 9. SUMMARY AND DISCUSSION

In general, respondents believed that Libyan banks comply reasonably well with existing mandatory disclosure requirements. All the preparer groups questioned are quite satisfied with the quality and the quantity of the existing financial disclosure in Libyan banks’ annual reports both in absolute terms and especially relative to other sectors. Encouragingly, it appears that the development of the Libyan stock market is seen as overwhelmingly positive in terms of financial reporting in the banking industry.

The questionnaire was administered to four preparer groups, two of these being managerial-based and two accountant-based, with the latter presented to be closer to the detailed preparation of the annual reports. It became increasingly evident that within both groups, perceptions were often similar, but across the groups (i.e. between managers and accountants) views regularly seemed to differ. To investigate this pattern more closely, Table 9 outlines eight areas where the differences across the two preparer classes were notably different.

**TABLE 9: THE MAIN DIFFERENCES OF PERCEPTIONS BETWEEN MANAGERIAL-BASED AND ACCOUNTANT-BASED GROUPS**

	Statement	Groups	
		Managerial-based	Accountant-based
1	the degree of Libyan banks’ compliance with mandatory disclosure requirements	Very good	Good
2	The quality and quantity of financial disclosure in Libyan banks’ annual reports	Very good	Good
3	The most important roles the LSM play regarding the financial disclosures practices	Ensuring banks publish their accounts in timely fashion and encouraging banks to disclose more information	Ensuring banks comply with statutory requirements

Inspection of Table 9 further reveals that, managerial-based groups were generally more satisfied than accountant-based groups about the degree of Libyan banks’ compliance with mandatory disclosure requirements and the quality and quantity of the financial disclosures in Libyan banks’ annual reports. This evidence can arguably be interpreted as suggesting that managerial-based groups’ perceptions reflect the point of view of managers who like to perceive his/her entity is performing well, in this case coming close to best practice in disclosure. It could be argued that the perceptions of accountant-based groups are more objective, and provide a more realistic reflection of the de-facto situation.

With regard to the roles that the LSM is expected to play concerning Libyan banks’ financial disclosures practices, managerial-based groups considered the role of ensuring timely publication of accounts and encouraging the disclosure of more information to be most important. This evidence could be interpreted in terms of the managerial-based groups having concerns about the delay in publishing annual reports, and thus believing that the main function of the LSM is ensuring that banks publish their accounts in a timely fashion and with extensive information content in order to reduce information asymmetry and attract cheap funding. The accountant-based groups, on the other hand, ranked the role of ensuring banks comply with statutory requirements first; this might reflect a lack of satisfaction among the accountant-based groups about the degree of Libyan banks’ compliance with mandatory disclosure requirements. This is consistent with the accountants seeing a major role for the LSM in terms of key qualities of reporting such as comparability and materiality. This evidence also fits with that reported in Table 8 where the accountants perceive relatively a strong impact on a lack of qualified professionals.

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# APPRAISAL OF INFLUENCE OF MAJOR EXOGENOUS FACTORS ON VOLUME OF LENDING BY DEPOSIT MONEY BANKS IN NIGERIA (1990 -2011)

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## ABSTRACT

*The study is an ex-post facto research work which was carried out to appraise the influence of major exogenous factors on the aggregate volume of lending by the Deposit Money Banks in Nigeria from 1990 to 2011 based on statistical data from Central Bank of Nigeria. Multiple Regression Analysis was employed to test the relationship between aggregate volume of loans & advances (VLA) as dependent variable and independent variables such as lending rate (LRt), liquidity ratio (LR) and cash reserve ratio (CRR), and volume of deposits (VD). The result of the test revealed that LRt, LR, and CRR have significant positive impact on volume of loans and advances (VLA) of Nigerian DMBs within the period under review. Conversely, VD appears to have insignificant and negative impact on VLA. It is recommended that the CBN should be using the regulatory variables (LRt, LR, CRR and VD) in such a way that will enhance robust volume of lending by the DMBs to enhance the growth of the Nigerian economy.*

## KEYWORDS

Appraisal, Exogenous Factors, Volume of Lending, Deposit Money Banks, Structure of Lending, Multiple Regression Analysis.

## 1.0 INTRODUCTION

Banking operations thrive on financial intermediation with twin preoccupations of sourcing for funds and lending of such funds to the productive sector and public sectors of the economy. In the process of financial intermediation, therefore, the DMBs source for their funds through deposits from customers while on the other hand, they lend such funds out to members of the public which include corporate bodies, government at various levels, institutions, and individuals (Jhingan, 2008).

Financial intermediation in the banking industry all over the world revolves around a tripod of sourcing for funds from depositors, lending of such funds to customers, and managing inherent risks of operations. Therefore, the operations of DMBs involve maintaining a delicate balance between meeting the demands of depositors and lending their funds to customers. Hence the fragile nature of operations of money deposit banks necessitates the regulations and intervention of their supervisory authorities. The deposit money banks are regulated more by banking supervisory authorities (apex banks, deposit insurance institutions, etc) and less by their boards of directors. Therefore, lending aspect of banking operations is subject to the actions of both regulatory authorities and the boards of directors of deposit money banks.

By large and large, the lending behaviour of DMBs is influenced by certain factors which are both exogenous and endogenous to their operations. Some of these influencing factors on lending behaviour of these banks are, therefore, established by their directors while others arise from the regulatory actions of apex banks, deposit insurance institutions, and other regulatory authorities in the financial sector of the economy.

The implication is that some of the factors or determinants of lending by deposit money banks are subject to the whims and caprices of their directors. And since the other determinants that influence lending by these banks are exogenous, they are not subject to their control and manipulation because they are normally formulated and imposed by regulatory authorities for implementation in any given economy.

While there are many empirical studies on the determinants of lending behaviour of deposit money banks in advanced economies, there has been only a few studies on the lending behaviour of deposit money banks in developing economies such as Nigeria. Particularly in Nigeria, the only empirical studies on the lending behaviour of the deposit money banks include: Osayameh's (1991) work on lending and credit administration model for commercial banks; Adedoyin and Sobodun (1996) in their study on commercial banks' lending activities in the country; Ajayi (2007) in his study investigates some major determinants of loans and advances in the Nigerian financial system; Olokoyo's (2011) work on determinants of commercial banks' lending behavior in the country; and Olusanya, Oyebo and Ohadebere. (2012) in their study on determinants of lending behaviour of commercial banks: evidence from Nigeria, a co-integration analysis (1975-2010).

However, none of such studies is able to consider those factors that were not included in the regression analysis but also influence the DMBs in their lending behaviour generally in Nigeria. Therefore, this paper is an attempt to investigate in holistic terms the determinants of lending behaviour of deposit money banks in the country.

## 1.1 OBJECTIVE OF THE STUDY

The main objective of the study is to investigate the major exogenous factors that influence lending behaviour of deposit money banks in the country, drawing from the past studies on such a subject matter. The study also investigates the structure of lending of deposit money banks in Nigeria with the period under review (1980-2011).

## 1.2 METHODOLOGY

An ex-post facto research design (quantitative research design) was employed in carrying out this study. The data that have been used for the study were analyzed and interpreted using relevant statistical package based on statistical formulations. The data for the study have been generated from Statistical Bulletin published by the Central Bank of Nigeria. The test which made use of regression analysis was based on Eview7 package.

## 2.0 LITERATURE REVIEW

### 2.1 EMPIRICAL REVIEW

A lot of studies have been carried out in attempts to determine the significant influencing factors on lending behaviour of deposit money banks in Nigeria in particular and around the world generally. Since there are varied studies on the lending behaviour of banks, it is only pertinent that some cursory scrutiny on such studies is considered in terms of highlighting the influencing factors on bank lending and inherent gaps in such studies.

Ajayi (2007) investigates some major determinants of loans and advances in the Nigerian financial system. He uses explanatory variables such as liquidity ratio, capital base, bank deposit and lending rates to determine their effect on loans and advances. The study discovers that a relationship exists between dependent variable (loans and advances) and independent variables of total deposit, capital base, liquidity ratio, and lending rate. The gap in this study lies in the fact that the independent factors as used for the study such as total deposit, capital base, liquidity ratio, and lending rate to investigate their relationship with dependent variable (bank loans and advances) are very few and far between.

In a recent study on determinants of commercial banks' lending behavior in Nigeria, Olokoyo (2011) utilizes explanatory variables such as volume of deposits, investment portfolio, interest rate, cash reserve requirement, liquidity ratio, foreign exchange and gross domestic product to determine their influence on



commercial banks' lending. The findings of the study reveal that all these explanatory variables do affect, in varying degree, the lending behaviour of money deposit banks in the country. The study reveals that explanatory variables such as volume of deposit, investment portfolio, foreign exchange, and gross domestic product in particular play significant role in influencing the lending behaviour of deposit money banks in the country. However, a major gap in the study is the neglect of the relationship factors (Chodechai, 2004), monetary authorities' guidelines and collateral securities which play important role in lending decisions of commercial banks in the country.

Adedoyin and Sobodun (1996) lay emphasis only on intermediation activities of deposit money banks. They posit that lending is undoubtedly the heart of banking business, and therefore, the administration of lending requires bank management to employ skill and dexterity in policy formulation and application that would guarantee reasonable income and adequate liquidity while ensuring safety of bank's funds. Furthermore, Adedoyin and Sobodun (1996) posit that commercial banking in Nigeria has gone through an era of impressive profitability arising from huge deposits and varied investment opportunities but characterized by high competition. The gap in this study is that the banking era of the 1990s in the country has been swept away by widespread distress and failure in the industry to the extent that only a few deposit money banks are in operations these days.

Usman (1999), posits that the factors that affect commercial banks' lending behaviour depend on the choice of certain policy instruments in their banking operations. Such policy instruments (Usman, 1999) include a rigidly administered interest rate structure, directed credit, unremunerated reserve requirements and stabilizing liquidity control measures like the stabilization securities. Furthermore, Usman (1999) observes that "a major regulation affecting commercial banks' lending in Nigeria is the restriction on the amount of interest banks are allowed to pay on deposits which in turn affects their efforts to attract reasonable volume of deposits and the interests they charge on their loans and advances. However, the study does not consider holistically the factors that influence the behaviour of bank lending generally except a few factors such as interest rate structure, directed credit, reserve requirements and liquidity control measures (e.g., stabilization securities, which he highlighted.

Osayameh (1991) opines that the increasing trend in bad debts and absence of basic business/corporate advisory services in most Nigerian commercial banks, are indicative of an apparent lack of use of effective lending and credit administration techniques in these banks. Furthermore, Osayameh (1991) observes that since 1980s interest rates for both deposits and loans are being heavily regulated and therefore, the money deposit banks should pay adequate attention to lending and credit administration given the fact that lending constitutes the single most important source of their earnings. Moreso, in the study, Osayameh (1991) posits that the present volume and complexity of transaction in bank lending and credit administration in the country call for the use of scientific techniques such as operations research to aid their lending and credit administration. In this study, the researcher does not identifying explicitly the factors that influence lending behaviour in money deposit banks in the country other than mere making allusion to regulation and interest rate.

Chizea (1994) posits that there are certain aspects of fiscal and monetary policies which affect the lending behaviour of commercial banks with emphasis on the interest rate regime. Furthermore, Chizea (1994) observes that the low interest rates being required by commercial banks to be charged on agricultural loans serve as disincentive because of the effect of inflation. The gap inherent in this treatise is the emphasis on interest rate as the only factor affecting bank lending behaviour in agricultural financing.

Ewert and Schenk (1998) observe that big companies that provide more collateral sends some signals to convince banks that they are less risky customers, with the hope type of securing lower interest rates. This is not the case with high risky companies that are required to comply with provision of collaterals and restrictive covenants, and yet are still charged higher interest rates on loan facilities. The shortcomings in this study include; consideration of interest rate as the only factor affecting bank lending behavior, and the fact that the study is based on German economy.

Chodechai (2004) investigates factors that affect interest rates, degree of lending volume and collateral setting in the loan decision of banks. The emphasis of the study is on mainly on the influence of interest rates on lending behaviour of banks to the neglect of other significant factors that affect the behaviour of commercial banks in lending generally. Furthermore, the study is based on a distinct economic climate with peculiar regulatory framework and banking practices which are different from what obtains in Nigeria's banking industry. However, this study is based in the context of what obtains in another economy.

Olusanya, Oyebo, and Ohadebere (2012) observe that there is positive relationship between Loan and advances and Volume of deposits, annual average exchange rate of the naira to dollar, Gross domestic product at current market price and cash reserve requirement ratio except Investment portfolio and Interest rate (lending rate) that have a negative relationship. And that there is a long run relationship between Loan and advances and all the explanatory variables in their model, which is indicative that commercial banks also influence their lending behaviour.

Some previous empirical studies provide evidence of a causal relationship between the size of bank capital and the extent of banking sector credit (Fadare, 2010). Bernanke and Lown (1991) observe that the size of bank capital has a positive and significant effect on bank lending.

## 2.2 CONCEPTUAL CLARIFICATION

Bank lending is inherently ingrained in financial intermediation. The commercial banks which otherwise are called deposit money banks operate on financial intermediation. These banks usually source for funds through deposits from customers while they lend such funds out to corporate bodies, government at various levels, institutions, and individuals. Lending of funds (Nwankwo, 2000; Olokoyo, 2011) constitutes the largest single income-earning asset in the portfolio of most deposit money banks generally. Therefore, banks deploy huge resources to manage the quality of their loan portfolio. This is justifiably imperative when considered in line with the fact that practice of credit management and administration impacts significantly on magnitude and diversification of banks' loans.

The practice of lending by deposit money banks essentially constitutes the pivot of their operations and business. This is the more reason which informs their deployment of considerable expertise and deftness on the part of the bank management teams on lending administration and management. Basically deposit money banks are normally irreversibly committed to honour the constant demands of the depositors. This explains the reason why they are under operational obligations to determine appropriate avenues where deposit funds could be placed to generate reasonable returns while striving to maintain liquidity through pragmatic lending policies (Adedoyin and Sobodun, 1996).

Goldfield and Chandler (1980) succinctly observe that commercial banks usually pay more attention to liquidity because of the high turnover of their debt liabilities. Furthermore, the practice is that a large quantum of the periodic payments by a bank is normally met from current gross receipt of funds in the normal course of the banking business. The ability of money deposit banks to ensure their liquidity and survival while contributing towards promoting growth and development of the economy depends on their effective handling of lending operations. This explains why transactions on loans and advances are carried out with trust and confidence devoid of lending risks. The required safe and sound bank lending practices involves taking into cognizance the regulatory requirements and the internally entrenched factors affecting loans and advances (John, 1993).

Similarly, Ituwe (1983) contends that a bank's ability to grant loans and advances is curtailed by the quantum of cash in its vault. The demands by depositors in terms of withdrawals from their deposits have to be met instantaneously. Money deposit banks, therefore, typically maintain reasonable quantity of cash to meet their customers' demands, which implies that these banks cannot afford to grant loans and advances in excess of the available cash liquidity. This is where liquidity in banking operations also affects the lending behaviour of deposit money banks.

Generally, monetary policy also affects bank assets which do arise because of their lending (loans) as well as banks' liabilities (deposits). The implication of operations of monetary policy is that besides shifting the supply of deposits it also shifts the supply of bank loans.

## 2.3 CONCEPTUAL FRAMEWORK OF THE STUDY

There are many theories which seek to explain the behaviour of money deposit banks in their lending activities in various economies around the world. For the purpose of this study, the theory that is considered relevant is the loan pricing theory.

The loan pricing theory posits that banks cannot always set high interest rates by trying to earn maximum interest income. Banks should consider the problems of adverse selection and moral hazard since it is very difficult to forecast the borrower type at the start of the banking relationship (Stiglitz and Weiss, 1981). If banks set interest rates too high, they may induce adverse selection problems because high-risk borrowers are willing to accept these high rates. Once these borrowers receive the loans, they may develop moral hazard behaviour or so-called borrower moral hazard since they are likely to take on highly risky projects or investments (Chodecai, 2004). From the reasoning of Stiglitz and Weiss (1981), it is usual that in some cases we may not find that the interest rate set by banks is commensurate with the risk of the borrowers.

### 3.0 FINDINGS AND DISCUSSION OF RESULTS

The multiple regression formulated for the study has the general equation for ECM and Co-integration test is as follows:

$$Y_t = \beta_0 + \beta_1 X_{1t} + \dots + \beta_n X_{nt} + U_t \text{ and } \Delta Y_t = \beta_1 + \beta_2 \Delta X_{1t} + \dots + \beta_n \Delta X_{nt} + \delta u_{t-1} + \epsilon_t \dots \quad (1)$$

$Y_t$  = the dependent variable

$\beta_0$  = the intercept term

$\beta_1$  = the regression coefficient,

$X_t$  = a set of explanatory variables,

$\mu_t$  = the error term.

Therefore, in re-specifying the model above to capture the objective of our study, we have:

$$LOA = F(LR_t, VD, LR, CRR) \dots \quad (2)$$

Where LOA is the volume of loan and advance, LRt is lending rate, VD is volume of deposit, LR is the liquidity ratio and CRR is the cash reserve ratio. Appendix 1 is the data used for the study as generated from the apex bank's statistical publication.

Dependent Variable: LOA

Method: Least Squares

Date: 05/10/13 Time: 01:50

Sample: 1990 2011

Included observations: 22

**TABLE I**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	116512.14	4206783.	2.769625	0.0000
VD	-12.37942	44.64283	-0.277299	0.7849
LRt	310048.9	137373.8	-2.256973	0.0000
LR	2476.521	80150.05	-0.030899	0.9757
CRR	402260.9	265206.9	-1.516781	0.0004
R-squared	0.967041	Mean dependent var	2231216.	
Adjusted R-squared	0.865168	S.D. dependent var	3162232.	
S.E. of regression	2312609.	Akaike info criterion	32.34237	
Sum squared resid	9.09E+13	Schwarz criterion	32.59033	
Log likelihood	-350.7660	Hannan-Quinn criter.	32.40078	
F-statistic	15.566175	Durbin-Watson stat	1.800224	
Prob(F-statistic)	0.000000			

From the result of the test (Table I above), there is a negative/inverse relationship between volume of deposit (VD) and volume of loans and advances (VLA), that is, 1 unit increase in volume of deposit (VD) will lead to -12.37942 units decrease in volume of loans and advances, which implies that as volume of deposit (VD) increases overtime, the volume of loans and advances and vice versa.

However, it is known from the result as shown above that there is a direct/positive relationship between lending rate (LRt) and volume of loans and advances (VLA), that is, 1 unit increase in volume of loans and advances (VLA) will lead to 310048.9 unit increase in lending rate (LRt)

Furthermore, it is also seen that there is a direct/positive relationship between liquidity ratio (LR) and volume of loans and advances (VLA), which implies that 1 unit increase in the volume of loans and advances (VLA) will lead to 2476.521 unit increases in liquidity ratio (LR). Also, there is a direct relationship between cash reserve ratio (CRR) and volume of loans and advances (VLA), which implies that 1 unit increase in volume of loans and advances (VLA) will lead to 402260.9 unit increase in cash reserve ratio (CRR).

However, the t statistic for volume of deposit is not statistically significant using 5% level of significance. It implies that 5% level of significance is 1.96 which is the tabulated value and the calculated value is -0.277299. Therefore,  $1.96 > -0.27729$  then acceptable the null hypothesis and reject the alternative hypothesis, then we conclude that the parameter volume of deposit (VD) is not statistically significant at 5% level of significance. The implication of this is all the parameters are not good explanatory variables for loans and advances.

Furthermore, the F statistic calculated is 15.566275 and using 5% level of significance, F tabulated value is 2.442. Since F calculated is greater than F tabulated, we reject the null hypothesis and accept the alternative hypothesis and conclude that the overall parameter is statistically significant.

Date: 05/10/13 Time: 01:42

Sample (adjusted): 1992 2011

Included observations: 20 after adjustments

Trend assumption: Linear deterministic trend

Series: LOA VD LR LQR RESQ

Lags interval (in first differences): 1 to 1

**TABLE II: UNRESTRICTED COINTEGRATION RANK TEST (TRACE)**

Hypothesized	Trace	0.05		
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.778192	69.72125	63.81889	0.0000
At most 1*	0.536186	47.60236	33.85613	0.0003
At most 2*	0.488569	29.23691	18.79707	0.0005
At most 3*	0.212859	15.826041	8.49471	0.0000
At most 4*	0.001953	3.639092	0.841466	0.0000

The trace test indicates a co-integration at 5% level of significance (0.05) and the Table II above revealed that null hypothesis of co-integration is rejected. This implies that the long-run test revealed co-integration relationship among variables that were included except only one variable. Therefore, we deduced that there is long-run relationship between volume of loans and advances and its explanatory variables (LRt, LR, and VD) except cash reserve ratio (CRR) that has no long-run relationship with the dependent variable (volume of loans and advances)



TABLE III: UNRESTRICTED COINTEGRATION RANK TEST (MAXIMUM EIGENVALUE)

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.778192	33.11889	30.87687	0.0000
At most 1*	0.536186	27.36545	15.58434	0.0008
At most 2*	0.488569	21.41087	13.13162	0.0002
At most 3*	0.212859	14.786949	4.26460	0.0000
At most 4*	0.001953	3.239092	0.841466	0.0000

Max-eigenvalue test indicates no cointegration at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

TABLE IV: UNRESTRICTED COINTEGRATING COEFFICIENTS (normalized by  $b^*S_{11}b=l$ ):

VLA	VD	Lrt	LR	CRR
2.51E-07	-8.07E-05	0.218839	-0.198523	0.742492
-1.72E-07	-9.77E-05	-0.172419	0.168608	-0.244312
-8.49E-08	3.27E-05	0.411565	0.052563	-0.545454
4.57E-07	9.06E-06	0.281802	0.144064	-0.168509
-2.84E-07	2.25E-05	0.022279	0.047795	-0.012361

The result of the above test from Tables III and IV(Maximum Eigen Value) reveals that all the explanatory variables except cash reserve ratio (CRR0 has long-run relationship with the dependent variable (volume of loans and advances) at 5% level of significance.

TABLE V: UNRESTRICTED ADJUSTMENT COEFFICIENTS (alpha)

D(VLA)	61377.52	60659.41	-44962.82	-84538.92	-20286.22
D(VD)	11166.03	5302.401	2653.425	639.2220	28.41468
D(Lrt)	-1.500583	1.583249	-1.090790	-0.621155	0.054097
D(LR)	2.753486	-2.893073	-0.655878	-1.761016	-0.056330
D(CRRR)	-0.270366	0.046504	0.452462	-0.411769	0.031163
1 Cointegrating Equation(s):		Log likelihood	-643.6512		
Normalized cointegrating coefficients (standard error in parentheses)					
LOA	VD	Lrt	LR	CRR	
1.000000	-321.5608	871719.6	-790793.0	2957636.	
	(78.0926)	(295413.)	(178100.)	(538366.)	
Adjustment coefficients (standard error in parentheses)					
D(VLA)	0.015408				
	(0.03526)				
D(VD)	0.002803				
	(0.00071)				
D(Lrt)	-3.77E-07				
	(2.3E-07)				
D(QR)	6.91E-07				
	(4.1E-07)				
D(CRR)	-6.79E-08				
	(9.2E-08)				
2 Cointegrating Equation(s):		Log likelihood	-635.9684		
Normalized cointegrating coefficients (standard error in parentheses)					
VLA	VD	Lrt	LR	CRR	
1.000000	0.000000	919303.9	-859602.0	2402784.	
		(316219.)	(198845.)	(545769.)	
0.000000	1.000000	147.9789	-213.9844	-1725.496	
		(867.756)	(545.664)	(1497.68)	

Adjustment coefficients (standard error in parentheses)				
D(VLA)	0.004985 (0.04242)	-10.88032 (17.6689)		
D(VD)	0.001892 (0.00074)	-1.419354 (0.30762)		
D(LRt)	-6.49E-07 (2.5E-07)	-3.35E-05 (0.00010)		
D(LR)	1.19E-06 (4.3E-07)	6.03E-05 (0.00018)		
D(CRR)	-7.59E-08 (1.1E-07)	1.73E-05 (4.6E-05)		
3 Cointegrating Equation(s):		Log likelihood	-629.2630	
Normalized cointegrating coefficients (standard error in parentheses)				
VLA	VD	LRt	LR	CRR
1.000000	0.000000	0.000000	-834093.6 (247960.)	2943317. (658648.)
0.000000	1.000000	0.000000	-209.8783 (548.856)	-1638.487 (1457.91)
0.000000	0.000000	1.000000	-0.027747 (0.17945)	-0.587981 (0.47666)
Adjustment coefficients (standard error in parentheses)				
D(VLA)	0.008804 (0.04386)	-12.34843 (18.1729)	-15532.20 (69017.2)	
D(VD)	0.001667 (0.00073)	-1.332715 (0.30271)	2621.383 (1149.65)	
D(LRt)	-5.56E-07 (2.4E-07)	-6.91E-05 (9.9E-05)	-1.050299 (0.37413)	
D(LR)	1.24E-06 (4.5E-07)	3.89E-05 (0.00019)	0.831453 (0.70347)	
D(CRR)	-1.14E-07 (1.1E-07)	3.21E-05 (4.5E-05)	0.119033 (0.17055)	
4 Cointegrating Equation(s):		Log likelihood	-626.8695	
Normalized cointegrating coefficients (standard error in parentheses)				
VLA	VD	LRt	LR	CRR
1.000000	0.000000	0.000000	0.000000	864691.3 (326494.)
0.000000	1.000000	0.000000	0.000000	-2161.521 (612.371)
0.000000	0.000000	1.000000	0.000000	-0.657130 (0.20853)
0.000000	0.000000	0.000000	1.000000	-2.492078 (0.40280)
Adjustment coefficients (standard error in parentheses)				
D(VLA)	-0.029841 (0.07605)	-13.11440 (17.9549)	-39355.41 (78200.7)	-16499.57 (41371.0)
D(VD)	0.001959 (0.00128)	-1.326924 (0.30255)	2801.516 (1317.71)	-1091.121 (697.115)
D(LRt)	-8.40E-07 (4.1E-07)	-7.48E-05 (9.6E-05)	-1.225341 (0.41868)	0.418027 (0.22149)
D(LR)	4.39E-07 (7.4E-07)	2.30E-05 (0.00017)	0.335196 (0.75902)	-1.322600 (0.40155)
D(CRR)	-3.03E-07 (1.8E-07)	2.83E-05 (4.2E-05)	0.002996 (0.18488)	0.025976 (0.09781)

The result of Table V above indicates that after adjustment all the parameters have long-run relationship with the adjusted variable (volume of loans and advances). Note that cash reserve ratio is now co-integrated with the volume of loans and advances after using the log-likelihood analysis. In conclusion, there is a long-run relationship between the determinants of lending behavior of DMBs and the volume of loans and advances by the banks. while standard error and the values of t-statistic have been shown.

FIGURE 1

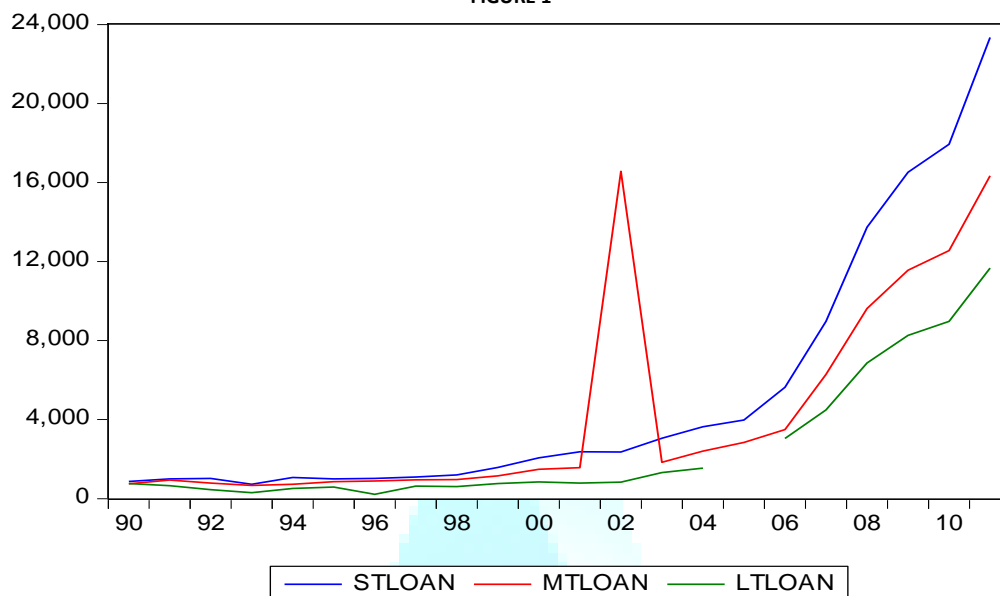


FIGURE 2

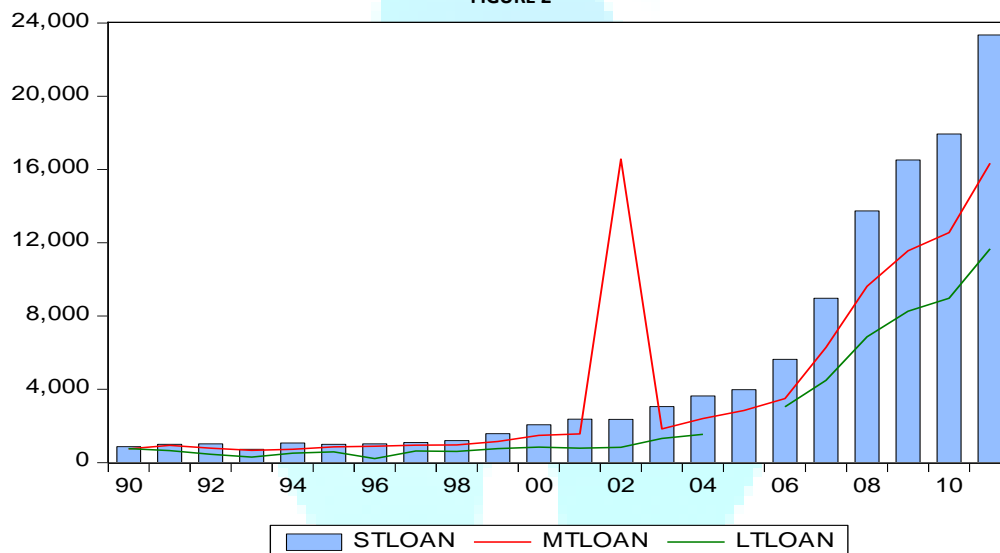
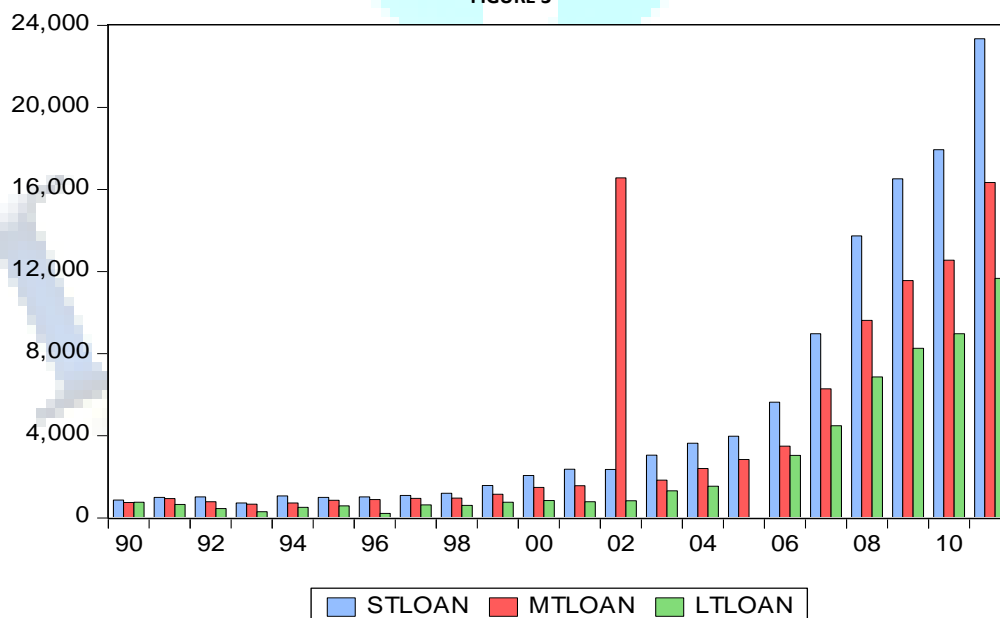


FIGURE 3



The result of the study from Figures I to III also showed that the structure that the proportionate volumes of short-term lending by deposit money banks to the economy during the period under review (1990 – 2011) are greater than the loans and advances granted on the bases of medium-term and long-term to the

economy. It was only during the year 2002 that the volume of loans and advances on medium-term basis astronomically outstrips the volumes of lending on both short-term and long-term bases as depicted by Figure 3 above.

## CONCLUSION & RECOMMENDATION

This study focuses on the determinants of lending behaviour of deposit money banks in Nigeria. In basic terms, the lending capacity of deposit banks is affected by factors such as volume of deposit, lending or interest rate, cash reserve ratio, and liquidity ratio, among others.

The regression result reveals that about 96% of the systematic variation in the dependent variable is explained by the four (4) independent variables such as LR, VD, RESQ and LQR. The F-statistic is significant at the 5% level showing that there is a linear relationship between LOA and the four (4) independent variables used for the regression. The result revealed that volume of deposit (VD), lending rate (LR), liquidity ratio (LQR) and cash reserve ratio (RESQ) are the main determinants of lending behaviour of deposit money banks in Nigeria. The implication of this is that a change in these variables will have a great change in banks' loans and advances to the economy.

Conclusively, the short-term lending of deposit money banks, as discovered from the study, has been on the increase throughout the period under review due to increase in short-term deposits except in 2002 when there is enormous increase in medium-term lending. However, the volume of short-term loans continues to dominate the lending portfolio of these banks from 2003 till 2011. This means that a reasonable number of bank customers were favoured for loans and advances which were granted to them for use for a reasonable number of months far beyond a period of one year within the period under review.

Based on the findings of this study, the it is recommended that the Central Bank of Nigeria should be using the regulatory variables (monetary policy rate, cash reserve ratio, and liquidity ratio) in such a way that will enhance robust volume of lending by such banks in order to grow the economy.

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## WEBSITE

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## APPENDIX I

YEAR	LOA	VD	LR	LQR	STLOAN	MTLOAN	LTLOAN	RESQ
1990	26000	8,360.00	27.7	44.3	875	749.9	765.1	2.9
1991	31306.2	10,580.70	20.8	38.6	998.5	943.2	654.3	2.9
1992	42735.8	4,612.20	31.2	29.1	1022.6	781.6	453.7	4.4
1993	65665.3	19,542.30	18.32	42.2	727	663.2	306.1	6
1994	66127.6	4,855.20	21	48.5	1066.6	731.1	516.1	5.7
1995	114668.9	8,807.10	20.8	33.1	996.5	852.7	585.6	5.8
1996	169437.1	12,442.00	20.86	43.1	1020.8	898.8	221.9	7.5
1997	385551	19,047.60	23.32	40.2	1091.9	954	632.2	7.8
1998	272895.5	18,513.80	21.34	46.8	1204.1	960.8	608.1	8.3
1999	322764.9	15,860.50	27.2	61	1574.2	1153.4	763.7	11.7
2000	508302.2	20,640.90	21.55	64.1	2068.7	1490.2	841.5	9.8
2001	796164.8	16,875.90	21.34	52.9	2376.8	1564.2	792.3	10.8
2002	954628.8	14,861.60	29.7	52.5	2354.7	16562.9	833.5	10.6
2003	1210033	20,551.80	22.47	50.9	3060.3	1841.9	1322.7	10
2004	1519243	64,490.00	20.62	50.5	3634	2401.6	1548.4	8.6
2005	1847823	18,461.90	19.47	50.2	3975.6	2839.3	2,453.8	9.7
2006	2524298	3,118.60	17.26	55.7	5635.1	3500	3048.2	7.4
2007	4813489	3,082.30	16.94	48.8	8975.6	6282.9	4487.8	3
2008	7799400	13,411.80	15.14	44.3	13738.4	9616.9	6869.2	1.3
2009	8912143	6,025.50	18.36	30.7	16515	11560.5	8257.5	2
2010	7706431	988.28	17.59	30.4	17942.2	12559.5	8971.1	1
2011	8997654	1,025.20	16	31.7	23343.9	16340.7	11672	1

Source: CBN Statistical Bulletin 2012



**DOMESTIC ROOF WATER HARVESTING PRACTICES: AN EMPIRICAL INVESTIGATION IN MEKELLE, ETHIOPIA**

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**ABSTRACT**

*The population size of Mekelle grows very fast while water supply remains inadequate to satisfy the demand. Despite the progress Mekelle Water Supply Service Office (MWSSO) made so far, there is still the challenge of providing adequate and persistent pure water supply in the town. The objective of this study is, therefore, designed to analyze the extent of the adoption of Domestic Roof Water Harvesting (DRWH) practices. The results of the study are based on data collected from a survey of 120 households which are selected using purposive and stratified sampling techniques to select enumeration areas and sampling unit (sample strata) respectively. And 30 sample respondents are selected using purposive sampling from each stratum. Different factors were significantly affecting the extent of adoption of DRWH practices these are age, income, perception towards quality & reliability of existing water supply, social responsibility and attitude towards importance of roof water harvesting, house ownership and affordability of the technology. Therefore, this study focuses on the extent of adopting DRWH as an alternative source of fresh water in the face of increasing water scarcity since it is remaining untapped resource.*

**KEYWORDS**

Mekelle, potable water, roof water harvesting, technology adoption.

**1. INTRODUCTION**

Water is the major substance on the earth, covering more than 70% of its surface. Out of the total volume of water available on the surface of the earth, only 2 percent (over 28,000,000 km<sup>3</sup>) is fresh water. This fresh water is a prerequisite for life and without it there will be no living thing. Fresh water is used for the purpose of human use, industries and agriculture (A. K. Dwivedi. et al. 2009). According to IFPRI (2010), access to safe drinking water can make an immense contribution to health, productivity, and social development. However, population growth; pollution and climate change are likely to produce a drastic decline in the amount of water in many parts of the developing world. As a result, millions of people throughout the world do not have access to clean water for domestic purposes. And this would have a consequence that 1.1 billion people lack access to improved water supply due to population growth and rapid urbanization WHO/UNICEF (2000), cited by A.K.Dwivedi. and Bhadauria, 2009. And this number will likely rise rapidly in the coming years unless serious measures are undertaken to stem the tide. Therefore, the problem of fresh water will be remained a serious issue in both urban and rural areas in developing as well as developed countries (Tripathi and Pandey, 2005; A.K. Dwivedi and Bhadauria, 2009). This led the international community to set goal in the United Nations Millennium Declaration to reduce by half the population with no access to safe water by 2015.

In many parts of the world, conventional piped water is either absent, unreliable or too expensive. Therefore, rainwater harvesting (RWH) has been identified as a valuable alternative or supplementary water resource, along with more conventional water supply technologies (Janette W. et. al, 2006).

RWH is primary source of fresh water and in many literatures; it is broadly defined as a collection and concentration of the rain for productive purposes like drinking, food making, cloth washing, back yard vegetables, permanent fruit production and livestock. But most of the rainwater from the roof top of the city goes back to rivers without being properly used. And, the rapid urbanization has further aggravated the urban runoff problem which causes erosion and land degradation (FAO, 2000).

People in some parts of the world where water shortage exists have a better understanding of the way to mix domestic roof water harvesting (DRWH) with other water supply options, in which it is usually used to provide full coverage in the wet season and partial coverage during the dry season as well as providing short-term security against the failure of other sources (Thomas and Martinson, 2007).

But, the application of RWH technique although potentially high is still traditional and low in Ethiopia Ngigi (2003), The reason that DRWH is rarely considered and becomes traditional is often simply due to lack of information on technical and financial feasibility, inadequate strategies, human resources and policies for its promotion.

Despite the progress registered for the last 10 years in Ethiopia, still it is one of the developing countries which facing several social and economic problems. As a result, its cities are confronted mainly with extensive poverty, which is characterized, among other things, by environmental problems and underdevelopment of physical infrastructure such as low access to health, education, water and low level of investment in social services. In line with the above facts of Ethiopia in general, the study area is highly characterized by inadequate availability and poor quality of ground and surface water supplies.

In general, DRWH has the potential to fill part of household's fresh water demand in Mekelle where other sources of fresh water have been limited. But so far, its adoption has been very limited for various reasons. However, there is a traditional (informal) practice of roof water harvesting in Mekelle as well as in other parts of Ethiopia.

Water resource availability or its lack is linked to economic and social progress, which suggests that development is strongly influenced by water resource availability and its management (Sullivan, 2002). This is because adequate and safe water supply is one of the basic urban services, which highly influence economic progress of towns and the health of their dwellers. Because,

'If there is water poverty, any measures to reduce income poverty are unlikely to be successful'. That is why the importance of adequate and safe water supplies for poverty reduction has attracted the attention of governments and different world organizations'.

Though, DRWH technology will have the capacity and should be designed with the aim of raising the urban water supply coverage to satisfy the full demand along with other sources under use widely, the Ethiopian water resources management policy didn't point out anything about rainwater harvesting. In fact, recently there are some attempts mainly in rural areas and the national safe water supply target established in the national water sector development program indicates coverage will be 96 percent by the end of 2016. So, it would be a challenging to the ministry to achieve its plan without considering 'rainwater' the ultimate source of fresh water which is simple and affordable technological option.

In relation to the population growth, the population projection made by regional bureau of plan and finance, stated that the city's population is 272, 539 in 2012 with annual growth rate of 4.7%. Thus the daily water requirement of the city is 43,992 m<sup>3</sup> per day while the existing supply is 20,500 m<sup>3</sup> per day and average per capita water requirement is 161 liters per capita domestic consumption while the existing condition reveals 40 liters per capita domestic consumption (MWSSO, 2012). Therefore, this persistent shortage of water brings an increasing interest to low cost alternatives generally referred to as 'water harvesting' especially for DRWH which can be used for different purposes.

The immediate output of this study is assessing different socio-economic and other factors affecting the extent of adoption of RWH by providing adequate information towards increasing its exploitation. Because sustainable availability of safe water supply in the required quality and quantity promotes the socio-economic development of the city in particular and the region in general. And investment is attracted and the city's socio-economic development brings structural change from traditional economic activity to modern scale business ventures.

However, there are many researchers who conducted research on RWH for agricultural purposes in Ethiopia but as to my knowledge; no published study is available which assesses the extent of adoption of RWH as an alternative source of potable water supply in urban areas.

## 2. CONCEPTS OF ROOF WATER HARVESTING

A. K. Dwivedi. (2009) stated that the human civilization, entirely depend upon rivers, lakes and ground water to fulfill their water demands. However rain is the ultimate source that feeds all these sources. The implication of rainwater harvesting is to make optimum use of rainwater at the place where it falls i.e. to conserve it without allowing it to drain away. Rainwater harvesting is an ancient technique enjoying a revival in popularity due to the inherent quality of rainwater. Rainwater is valued for its purity and softness. It has a nearly neutral pH<sup>6</sup>, and is free from impurities such as salts, minerals, and other natural and man-made contaminants.

According to Befekadu k., (2008), about 70 Percent of the precipitation that reach on the land area is evaporated or transpired directly back to the atmosphere; 10 Percent soaks in and becomes ground water, and 20 Percent runs off in to lakes, streams and rivers.

Thus using DRWH system we can use the rainwater before any of the losses mentioned in the above paragraph and avoid the difficult to regain it back by investing huge amount of money for pumping, construction of Dams or reservoirs, construction of purifications or treatment plants and convey the stored water from head works to each house through various pipe size and length etc (Thomas. T, Martinson, D.B, 2003)

Indiscriminate exploitation of ground water and the decline in ground water level have rendered many bore wells dry either seasonally or throughout the year. To overcome such a situation, bore wells and tube wells are now being drilled to greater depths, often tapping ground water from deep aquifers till then considered 'static'. (www.arpnjournals.com, 2006)

Butler et al (2011) suggested that rooftop rainwater harvesting for household purpose only represent a small part of the total water balances. In areas with significant variations in the annual rainfall pattern, the matching of water supply and water demand may be difficult. However, in terms of economic and human welfare it has a crucial role to play. Rainwater in many cases is the easiest to access, most reliable, and least polluted source. It can be collected and controlled by the individual household or community as it is not open to abuse by other users.

## 3. EMPIRICAL STUDIES ON TECHNOLOGY ADOPTION

The contribution of new technology to economic growth can only be realized when and if the new technology is widely diffused and used. According to Hall and Khan (2002), decisions to begin using the new technology are often the result of a comparison of the uncertain benefits. That means the decision of whether or not to adopt a new technology hinges upon a careful evaluation of a large number of technical, economical and social factors.

Yapa and Mayfield (1978) also suggested that the adoption of an entrepreneurial innovate by an individual requires at least four conditions. These are (a) the availability of sufficient information (b) the existence of a favorable attitude towards the innovation (c) the possession of the economic means to acquire the innovation (d) the physical availability of the innovation.

## 4. DECISION BEHAVIOR OF HOUSEHOLDS ABOUT RAIN WATER HARVESTING

Degnet (1999) had summarized different empirical studies on the association between adoption decision and the factors which influence adoption particularly in less developed countries into the following groups. 1) household characteristics such as age, education, gender, family size, experience and social status of the head of the family, 2) economic characteristics such as house ownership, availability of cash, 3) supply and institutional factors such as households access to credit, awareness creation and sensitization service, access to and availability of skilled labor and raw materials.

Thus, Martison et al (2001), suggested the success or failure of any rainwater harvesting technology will ultimately depend on the degree of acceptance by the households. It is essential that the needs and aspirations of the households are clearly understood and fully provided in the planning, designing and implementation process. It should give sense in terms of productivity of resources used.

As mentioned in CTA (2000) also, widespread adoption of rainwater harvesting techniques by the local population depends on cost and simplicity of the technology for implementation and maintenance. Another consideration would be whether success in rainwater harvesting promotion and adoption is facilitated by integrating different forms of rainwater harvesting systems. And many other researchers and experts in the field of natural resources conservation and rain water harvesting also forwarded their reasons about different factors that affect the decision of household's to participate and efficiently use rainwater-harvesting works.

Adoption of rainwater harvesting technologies despite their technical benefits will depend on knowledge of socio-economic and cultural dynamics, on the part of the technology developer, and on the household/ community perceptions. A comparison of promotion approaches of the same technology in different environments, either by the same or different actors, reveals the importance of participatory, household friendly approaches, and due consideration of socio-economic and cultural backgrounds (Ngiggi, 2003).

Abdulkarim (2002) enumerated conditions that should be considered during rain water harvesting system planning and design for the technology to be more acceptable by the users. These are a) Socio-economic aspects which may include community acceptance and participation, Understanding of needs and aspirations, prioritization of needs, appropriate technology, proper planning and analysis, pilot scheme approach, technical services, cost and benefit consideration of investment and operation, application.

Hence, it is essential to mention and summarize focusing on very influential factors that affects the extent of rain water harvesting practices. And, the following points were commonly cited in many literatures, as determinants of household behavior towards rain water harvesting practices.

**Awareness and sensitization:** surprising deposited the fact that rainwater harvesting have been around for hundreds of years. It has never been sufficient attention as viable solutions to our food and environmental problems. If it had been given sufficient attention, like other technologies, with the accompanying services, equipment and personnel, the situation would have been radically different (Critchley, 1991; FAO, 1994).

**Legal, policy and institutional issues:** despite the centrality and potential of rainwater harvesting in alleviating water scarcities, it is surprising to find no comprehensive policy guiding it in the Greater Horn of Africa countries (Ngiggi, 2003).

**Environmental issues:** in general rainwater harvesting systems are environmental friendly, rainwater harvesting technologies have been reported to reduce soil erosion by capturing roof water and hence reduce run offs and land degradation (Hatibu and Mahoo, 2000).

**Awareness creation by Water sector service:** Making use of the available service within government departments and equipping them with the necessary skills and material support would enhance adoption and replication. Households' exposure visits and stakeholders' collaboration and networking would suffice in disseminating the technologies (Ngiggi 2003).

**Public perception and acceptability:** One of the key factors in the success or otherwise of any water reuse scheme is the perception of the users and the acceptability to them of the existing or proposed technology. It is important that the social and cultural aspects of water use are considered when planning and designing such systems because past failure to adequately take into account and address public concerns has led to the cancellation of a number of potentially beneficial reuse schemes. (Jeffrey & Gearey, 2006).

**Satisfaction with present water sources:** If households have no problem in terms of accessibility and convenience of water supply, cost and quality of water. There may be a tendency to overlook the need to adopt DRWH practices.

**Limited previous exposure to permanent DRWH systems:** lack of familiarity with DRWH systems within the community hinders the adoption and effective use of the technology.

**Shortage of skilled masons to construct water retaining structures:** specialist training is usually required to develop the community's skills base in the new technology.

**Lack of responsibility for self help:** in some countries, there is the widespread expectation that water provision is the government's responsibility. Consequently many communities are unwilling or not motivated to address their water supply problems alone, particularly if it may compromise their subsequent involvement in piped water supply projects (for example, Uganda and Sri Lanka).

<sup>6</sup> PH indicates the acidic nature of rain water as compared to surface and sub surface water sources. As a result, it is valued for its purity and softness.

**Socio economic factor:** These factors include households' income, size, level of education, occupation and other demographic characteristics. Therefore, those factors are used to assess the extent of adoption and use of DRWH. Hence, a consideration of socio-economic factors is very important. Household surveys often gather a large amount of information on household socioeconomic and demographic characteristics such as size and composition (by sex and age) of the household, education level and occupation of each member, and earnings, as well as data on household living conditions such as number of both rooms, toilet rooms, availability of laundry machine, car etc.).

Household water consumption is also partly influenced by the level of education of household members (mainly household heads). It is believed that education is directly related to household per capita water consumption. The reason is that as the level of education of household heads increases; there would be more awareness of the health benefits of water and frequent bathing and washing in the household.

**Household's Perception on Quality of Water Service:** Because water quality and reliability may vary from one source to another, such variables should be included in household behavior to adopt other alternative sources choice. These include quality opinion variables about the taste, smell, and color of the water and hours of water availability and potential pressure problems (Gould and Nissen-Peterson, 1999). Also, quality perceptions may be correlated with income and education, implying collinearity issues. To avoid such biases, one could develop an average of opinion (on water quality) for households living in the same neighborhood, or relying on the same water source, if the average could be computed without considering the opinion of the individual household under consideration.

**Rainwater quality and health:** Some other literature states rainwater is often used for drinking and cooking and so it is vital that the highest possible standards are met. Rainwater, unfortunately, often does not meet the World Health Organization (WHO) water quality guidelines. This does not mean that the water is unsafe to drink. Gould and Nissen-Peterson (1999), in their recent book, point out that the Australian government have given the all clear for the consumption of rainwater 'provided the rainwater is clear, has little taste or smell, and is from a well-maintained system'. It has been found that a favorable user perception of rainwater quality (not necessarily perfect water quality) makes an enormous difference to the acceptance of RWH as a water supply option. There are several simple methods of treatment<sup>7</sup> for water before drinking.

## 5. MATERIALS AND METHODS

### 5.1 DEMOGRAPHIC DETAILS OF THE STUDY AREA

Mekelle town is one of the ancient towns of Ethiopia. Today, mekelle is one of the fast growing town having total area of 19,200km<sup>2</sup> and it is located in the north part of Ethiopia some 783km far from Addis Ababa. The city is the center of many federal, regional and international organizations. According to the regional bureau plan and finance population projection, the projected population estimate based on the population census of 2007, is a total population of 272,519. (BoFED, 2011). Thus, the population of Mekelle city has been growing considerably in the last 10 years. The city water supply service has attempted to cover the growing water demand. However, so far it has only achieved limited results. Reasons for water shortage of the city includes expansion of construction and industrial activities, increase in city's population due to both natural growth and immigration from surrounding areas in search of better living conditions. (MWSSO, 2012).

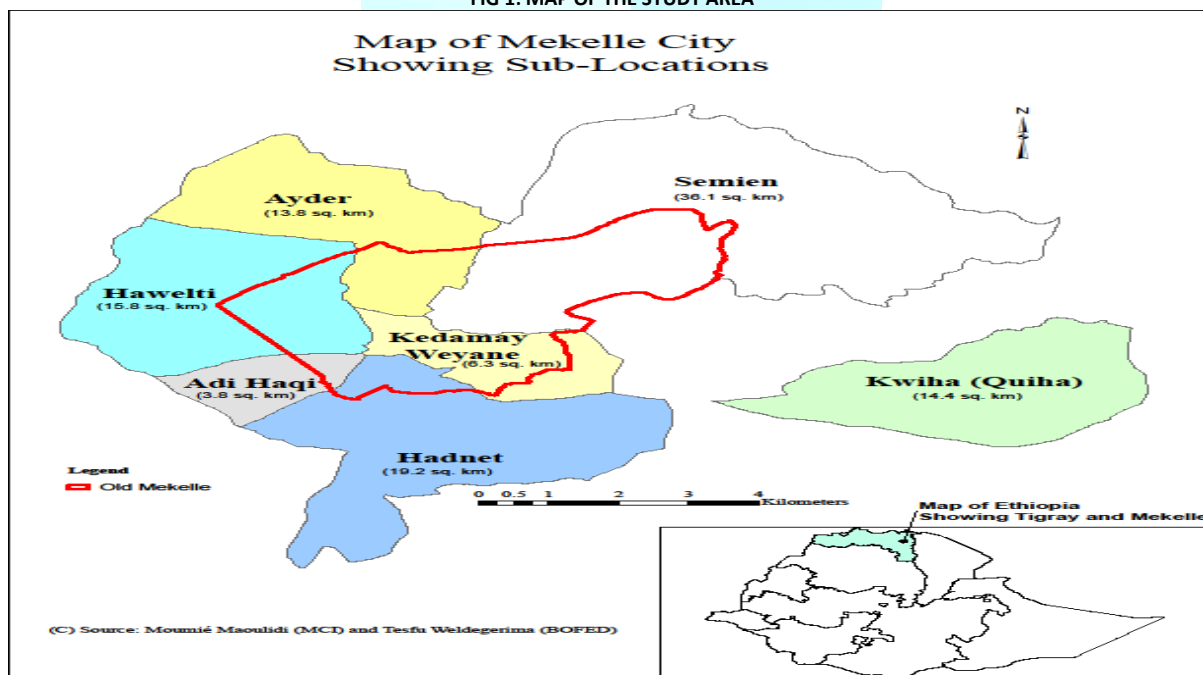
In order to distribute the available scarce water equitably among the population of the city, the enterprise has introduced a shifting system since four years ago. However, the current water supply situation of the city continues to be inadequate.

TABLE 1: POPULATION PROJECTION OF THE STUDY AREA

Year	2004	2007	2010	2015	2020	2025
Population	207,308	237,456	272,223	337,686	413,420	505,422
Annual G. rate	4.63	4.66	4.45	4.4	4.13	3.95

Source: Appraisal report of MWSSO expansion project, 2008

FIG 1: MAP OF THE STUDY AREA



Source: Adopted from BoFED Mekelle city profile, 2011

### 5.2 EXISTING WATER SUPPLY SOURCE AND PRODUCTION CAPACITY OF MEKELLE

As to the information obtained from Mekelle Water Supply Service Office, the introduction of a modern water supply system in Mekelle town began by 1950 ec and in the last 50 years only small changes has been made on the water service production and distribution system. The main water source for mekelle water

<sup>7</sup> • Boiling water will kill any harmful bacteria which may be present

• Adding chlorine in the right quantity (35ml of sodium hypochlorite per 1000 litres of water) will disinfect the water

• Slow sand filtration will remove any harmful organisms when carried out properly

• A recently developed technique called SODIS (Solar Disinfection) utilizes plastic bottles which are filled with water and placed in the sun for one full day.

supply is from 22 boreholes with depth ranging from 65 m to 250 m. Water production is effected by submersible pumps. The water that is produced from these boreholes is located in to the town's reservoirs, and then after disinfection process the water is delivered to the distribution networks.

The supply capacity of the existing water sources is deteriorating from time to time and some boreholes are abandoned due to the increase in demand and consequent shortage of water and over depletion. The production and distribution capacity of Mekelle water supply in 2012 is 20,500 M<sup>3</sup>/day including about 20% of non revenue water ( system leakage) while daily average demand for water of the city is estimated to be 43,992m<sup>3</sup>. This supply covered only around 50% with 40 liters per capita domestic consumption. Water services are provided to about 272, 539 people in the city through 23,000 connections and about 32 public stand posts. This service is provided to residential and non residential uses out of the total service connections, about 87% are residential, using about 52.7% of water supplied; 13% are governmental, commercial and business, which uses 47.3% of the remaining water supplied. (MWSSO, 2012).

### 5.3 METHOD OF DATA COLLECTION AND ANALYSIS

#### 5.3.1 DATA SOURCES AND DATA COLLECTION PROCEDURE

##### 5.3.1.1 DATA SOURCES

Both primary and secondary data sources are used for this study. The primary data is collected using structured questionnaire. The data on socio-economic aspects of the households such as age of a household head, education level, residential plot size, family size, and other economic, institutional and technological factors which explain household's decision behavior regarding domestic roof water harvesting participation.

The secondary data is collected from relevant sources such as the water supply service office of Mekelle, city Municipality and other related offices and officials. The data are collected from reports, statistical document as well as published and unpublished documents.

##### 5.3.1.2 SAMPLING PROCEDURE AND SAMPLE SIZE

According to Mekelle town administration classification, the town is classified in to seven administration units (kefele ketmas); the sample for the study is draw from two sub towns, and the selection of the two sub towns is using purposive sampling method aiming to ensure representativeness of adopters and non adopters of DRWH as well as all residence types. Thus, based on the categories of settlement that consist all types of residence and the presence of both adopters and non adopters of DRWH practices, Hadenet and Adihaki having total population of 49,994 and 28,049 respectively are selected as Enumeration areas (EA). After selecting the area, the total community living in those kefele<sup>8</sup> ketma (sub towns) was stratified using stratified sampling method in to four groups (strata) based on their house ownership type. As a result, the main stratification unit was their house ownership registration. Then, the types of house were classified as follow. Group 1 includes residences having Nebar Tehzeto registration type (old settlements), group 2 includes residences having condominium registration type , group 3 includes residences having Lease registration type and group 4 includes residences having Mahber (association) registration type. In view of this 30 sample households were selected using purposive sampling technique from each stratum or survey domain, This was done by considering the financial constraints, time shortages, lack of transportation and the presence of similar socio economic characteristics of the population groups (presence of homogenous characteristics) in the study area. Thus, a total of two Enumeration areas (EA) and four enumeration categories (EC) out of which a total of 120 households were included in the study as sample respondents.

Prior to the final administration of the questionnaires several steps were passed through. First, enumerators had given training and briefings on the objective and contents of the questionnaire and have been also acquainted with the basic techniques of socio-economic data gathering and interviewing techniques. Secondly, the questionnaires were tested at the household level on 15 purposively selected households. Thirdly, some amendments on the questionnaire were made following the results of the pretest.

##### 5.3.2 METHODS OF DATA ANALYSIS

Descriptive statistics is employed to study the extent of roof water harvesting practices. Using descriptive statistics the mean, standard deviation, minimum as well as maximum values of variables were indicated. The result obtained is used as an indicator of the household behavior towards roof water harvesting practices.

## 6. RESULTS AND DISCUSSIONS

This part is mainly concerned with the description and interpretation of the findings. Thus, some of the socio-economic, attitudinal and technological characteristics are discussed below. And the analysis was made to identify the most important factors that affect the extent of adoption of DRWH.

### 6.1 RESULTS OF DESCRIPTIVE STATISTICS

#### 6.1.1 HOUSEHOLD CHARACTERISTICS

TABLE 2: DEMOGRAPHIC CHARACTERISTICS OF SAMPLE RESPONDENTS BY HOUSEHOLD GROUP

Category	Adopters		Non adopters		Total	Chi-square	
	Freq	%	Freq	%	Freq		
<b>Sex of respondents</b>							
Male	23	74.20	79	88.76	102	85.00	3.83*
Female	8	25.80	10	11.34	18	15.00	
<b>Marital status</b>							
Married	24	77.42	72	80.90	96	80.00	8.68**
Single	1	3.22	13	14.61	14	11.67	
Divorced	6	19.35	4	4.49	10	8.33	
<b>Educational status</b>							
Illiterate	2	6.45	18	20.22	20	16.67	3.81
Primary School	9	29.03	19	21.35	28	23.33	
Secondary School	6	19.35	20	22.47	26	21.67	
Diploma & above	14	45.16	32	35.96	46	38.33	

Source: survey result

The minimum and maximum ages registered were 31 and 67 years respectively, with a standard deviation of 7.73 years. The average age of the sample households was 50.5 years and the average age figure is 48.5 and 51.2 for adopters and non adopters respectively. This shows young people have more probability to adopt new technology (Table 3).

- <sup>8</sup> Kefle ketma, Hadenet, Adi Haki, are to mean specific administration units
- Nebar tehzt, Mahber, lease and condominium are to mean types of house ownership registration of individual respondents.
- Ketena= specific local administration unit



TABLE 3: HOUSEHOLD CHARACTERISTICS OF SAMPLE RESPONDENTS BY HOUSEHOLD GROUP

Attributes		Obs	Mean	Std. Dev.	Min	Max	t-test
Age	Adopters	31	48.48387	6.587215	37	60	1.699*
	Non adopters	89	51.20225	8.010192	31	67	
Family size	Adopters	31	5.225806	1.627066	3	9	-3.089***
	Non adopters	89	4.202247	1.575233	1	9	

Source: survey result

\*, \*\*, \*\*\* Significant at 10%, 5%, 1% level of significant respectively.

## 6.1.2 ECONOMIC CHARACTERISTICS

With respect to monthly income of the sample household, it was calculated by comparing the monthly income reported by the respondent with that of the monthly expenditure plus a 5 percent estimated saving of that respondent. In this regard, the monthly income of the respondents ranges from 2000 birr to 9,500 birr. The average income is 4,543.333 birr with a standard deviation of 1,741.087 birr. The survey result indicates that adopters have average income of 6,367.742 birr. The corresponding figure for non adopters was 4,676.404 birr. About 39.17 percent of the sample respondents have other source of income other than the income of the household head from employed family member or house rent. The figure will be 22.50 and 16.67 percent for adopters and non adopters respectively. (Table 4)

TABLE 4: ECONOMIC CHARACTERISTICS OF HOUSEHOLD BY HOUSEHOLD GROUP

Attributes		Obs	Mean	Std. Dev.	Min	Max	t-test
Monthly Income	adopters	31	6367.742	1473.632	4000	9500	-5.84***
	Non adopters	89	4676.404	1358.31	2000	8000	
Plot size	adopters	31	302.5806	99.34679	175	500	4.49***
	Non adopters	89	188.1798	129.0353	41	500	
Monthly expenditure	adopters	31	5851.613	1484.334	3200	9000	5.07***
	Non adopters	89	4391.573	1345.41	1800	7600	

Source: survey result

Accordingly, the survey result indicates the respondents residential plot size ranges from 41 sqm to 500 sqm. The average residential plot of adopters is 302.58 sqm with a standard deviation of 99.3468 sqm. The corresponding figure for the non adopters is 188.18 sqm with standard deviation of 129.0353 sqm. This result indicates that large plot size encourages household's decision to adopt DRWH practices. (Table 4)

Of the total sample household heads 15.8 percent have some responsibility at their kebele (ketena). The figure was 29 percent and 11.2 percent for the adopters and non adopters respectively. The higher figure for the adopters when compared with the non adopters may indicate that as the household head assume some responsibility, the chance of getting information and hence understanding about the advantages of DRWH increase. Thus contributes to decide to construct some form of rain water harvesting tank.

The situation in the perception of water supply reliability and quality shows, 74.2 and 25.8 percent of the non adopters reported that there is unreliable and reliable water supply respectively in the study area. The corresponding figure for the adopters is 67.7 and 32.3 percent respectively. With respect to the quality of pipe water supply, the adopters reported that 19.35 and 80.65 percent were satisfactory and poor quality respectively. The corresponding figure for the non adopters is 65.17 and 34.83 percent were reported satisfactory and poor quality respectively. Thus, the existing water supply reliability and quality contributes to decide to adopt DRWH practices.

TABLE 5: THE IMPORTANCE OF ADOPTING DRWH

Attributes	adopters		Non adopters		Total		Chi-square
	Freq	%	Freq	%	Freq	%	
Important	27	87	30	33.71	57	47.5	26.28***
Less Important	4	13	59	66.29	63	52.5	
Not important	0	0	0	0	0	0	

Source: survey result

From the existing water supply problem point of view the number of adopters are few in number. Out of the total 120 sample respondents, a total of 31 households were reported as adopters. With regard to the importance of adopting DRWH, 87 and 13 percent of the adopters reported that important and less important respectively. The corresponding figure for the non adopters is 34 and 66 percent respectively. But no household is reported that DRWH is not important. This figure indicates that those non adopters now are more interested to have in the future.(Table 5).

TABLE 6: SHORTAGE OF MONEY

Attributes	adopters		Non adopters		Total		Chi-square
	Freq	%	Freq	%	Freq	%	
No	18	58.06	25	28.09	43	35.83	8.98***
Yes	13	41.94	64	71.91	77	64.17	

Source: survey result

The study found that about 85.8 % of the sample respondents have their own private house. The figure was 87.1 and 85.39 percent of the adopters and non adopters of DRWH technology have their own private house respectively. This result indicates that respondents having their own private house are encouraged to adopt DRWH practices (table 7).

TABLE 7: HOUSE OWNERSHIP TYPE OF SAMPLE RESPONDENTS

Category	adopters		Non adopters		Total		Chi-square
	Freq	%	Freq	%	Freq	%	
Private	27	87.1	76	85.39	103	85.83	11.1***
Rent	4	12.9	13	14.61	17	14.17	
Relative's house	0	0	0	0	0	0	

Source: survey result

TABLE 8: GOVERNMENT FOCUS TO WATER SUPPLY

Attribute	adopters		Non adopters		Total		Chi-square
	Freq	%	Freq	%	Freq	%	
Some attention	0	0	47	52.81	47	39.17	6.46**
Less attention	31	100	42	47.19	73	60.83	

Source: survey result



Water is the most important element of life and base of every economic development. Hence, without availability of adequate and safe water supply there will be no development and life at all. In this regard, the respondent's perception towards government role and level of attention to this crucial element in the study area was assessed. The result of the survey revealed that of the total sample respondents 31 (100 %) of the adopters responded that government gives less attention to water supply issue especially for alternative sources of water. While 53 and 47 percent of the non adopters responded that government gives some attention and less attention to water supply problem.

The total sample households (adopters and non adopters) reported that they did not get awareness about the formal way of practicing DRWH as an alternative source of water supply by government bodies. This shows that government policy has traditionally focused on increasing water supply by investing in large scale and centralized projects. But the importance of securing water supply necessitates that all options has to be explored was not taken in to account. Thus the result of the survey study indicates that lack of awareness on DRWH technology affects household decision to adopt DRWH practices highly.

A fast growth rate of population together with large investment in construction and manufacturing sectors causes shortage of water supply in the study area. The survey result indicated that as ground water is the only source of water supply in the study area there is shortage of water supply at source due to over depletion of ground water, quality problem of pipe water, less government focus for water supply problem and technical problems of the municipal in maintenance and mapping of distribution systems of the existing water supply unable to meet the ever increasing demand for water and those are the main driving causes for some households to practice DRWH

## 6.2 TESTS OF THE MEAN AND FREQUENCY DIFFERENCE OF HOUSEHOLD RELATED VARIABLES

The mean values of the above continuous variables in both adopters and non adopter groups were compared using t-test is used to indicate the mean difference between groups. That is why the test was used to identify the mean difference between adopters and non adopters. The t- values of 3 continuous variables were computed and in all of these variables the two groups were found to differ significantly.

Indeed, the two groups may not only differ in terms of quantitative variables, but also in terms of qualitative variables. In this respect, a chi square test was used to examine the existence of statistically significances between the two groups. Accordingly, 8 discrete variables were considered and the two groups were found to be different in terms of 6 variables. More specifically, the chi- square test reveals that 6 discrete variables showed statistically significant differences between the two groups at 5 % probability level.

From the total sample households, 59, 17 and 9 percents of the respondents were use rain water only during rainy season, full rainy season and partial dry seasons, full rainy and dry seasons respectively. The figure was 25.8 % and 59.2 % for the adopters and non adopters respectively. Full rainy & full dry season, full rainy & partial dry season and only rainy season consumption of rain water was mainly indicated by the adopters of the technology and non adopters having traditional practices respectively. While some 15% of the respondents mainly living in condominiums responded that they did not use rain water because the design of the house did not allow them to use (Table 9).

TABLE 9: DURATION OF RAIN WATER USE BY SAMPLE HOUSEHOLDS

Category	adopters		Non adopters		Total	
	Freq	%	Freq	%	Freq	%
Rainy season only	0	0	71	79.77	71	59.17
Full rainy & partial dry season	20	64.52	0	0	20	16.67
Full rainy & full dry seasons	11	35.48	0	0	11	9.17
Rain water non users	0	0	18	20.22	18	15.00

Source: Survey result

The study found that 14, 10 and 3 percents of the respondents were adopting the practice of DRWH because of the presence of shortage of water supply, quality problem of pipe water and to save water tariff respectively. Saving pipe water tariff is not only from the income approach but mainly from the water resource management perspective (i.e freely available rain water has to be utilized). The figure was 100% for the adopter group. With respect to the non adopters the main reasons not to adopt the practice of DRWH are 26, 45 and 29 percent for Shortage of income, lack of awareness about DRWH technology and lack of space in the residential compound for reservoir construction or installation respectively (table 10).

TABLE 10: REASONS TO ADOPT AND PRACTICE DRWH

Main reasons	Freq	Percent
Shortage of pipe water supply	17	14.17
Quality problem of pipe water supply	12	10.00
To save pipe water tariff	4	3.3

Source: Survey results

## 6.3 HOUSEHOLD'S DECISION TO ADOPT DRWH

As it has been mentioned one of the gauges of a community's acceptance of a new idea is availability of information about the technology up to decision to practice and invest on it. It was encouraging to note that in all the situations where the idea of cost of adopting rain water harvesting technologies was introduced and readily accepted provided the cost is within their reach (Ngiggi, 2003).

Thus, the meaning of adoption in this study carries investment in rain water collecting tank. Therefore, in the context of this study, a respondent is said to be adopter if he/she is formally harvesting rain water for domestic uses by investing in above or underground tank. In this regard, 25 % of the respondents were adopters. On the other hand, 75 % of the sample respondents are non adopters. Those non adopters were asked as to why they are not adopting DRWH are most responded that lack of awareness about practicing DRWH in its formal way than its traditional practices consciously. Some of the respondents also reported that they are unable to afford its cost according to this group of respondents, the cost of the technologies were beyond their ability to pay. They also pointed out that there is problem of space within their compound and fear of leakage from septic tank to the water tank. Still there are other respondents believed that, the issue of water supply is not the concern of private households but that of government only.

## 7. CONCLUSION

In spite of being water is the basic element of life and urbanization, investment and industrialization in particular and economic development in general depends highly on availability of adequate water supply, however, water supply in the study area still remains in adequate. The supply of safe and adequate water is below the ever increasing demand for water and still is characterized by insufficient supply. Many people attribute the problem to the growth of population at a rate faster than water supply would guarantee, over depletion of ground water, environmental degradation, poor water resource management and inefficient water use, Insufficient capital for surface water harvesting and ill- thought- out policy . This shortage water supply coupled with rapid population growth and urbanization, has an impact on household water security and profound effect on productivity and the economy in general.

Hence, promoting domestic roof water harvesting practices at individual household levels plays important role. However, there is no study as such which can indicate the status of promotion and adoption of roof water harvesting works across potential users' in urban areas.

Therefore, this study has tried to look in to the socio-economic and other factors, which can influence the household decision behavior to participate in domestic roof water harvesting. Indeed it will give a brief understanding about perception of existing water supply quality and reliability, perception on the importance of adopting DRWH, the extent of DRWH adoption, and duration of use. Therefore the study took 120 households to conduct the survey in which the household respondents were purposively selected from two kefel ketma within the study area and the result of the study understands the following findings:

Evidences from the descriptive analysis indicates that adopters of DRWH have better education standards, enough residential space, have relatively higher income and good understanding about importance of DRWH and quality perception of water supply and most of them did not face financial constraints. Non

adopters on the other hand have relatively low level of education in proportion to adopters, have no adequate awareness about importance of DRWH, as compared to adopters they also have financial constraints and no adequate residential plot size. This means non adopters having relatively better education and good understanding about DRWH have financial and space problem to adopt the technology, while some other non adopters have adequate income and space but they have lack of awareness about the technology and even their perception towards water supply is not their issue but the responsibility of government only. On top of this; they have lack of access to credit.

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# PRICE DISCOVERY AND INFORMATION TRANSMISSION IN SPOT AND FUTURE SEGMENTS FOR NSE 50: AN EMPIRICAL STUDY

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## ABSTRACT

*If markets are informationally efficient then information should be factored in both spot and forward markets simultaneously, but market imperfections results in lead/ lag relationship and one market acts a dominant while other acts a satellite market. In this study, we examine the information transmission process between spot and futures segments for the NIFTY 50 index in India. The daily data files stretch from 1 April 2009 to 31 March 2014. Cointegration and related tools were used to examine the price discovery process and it was empirically results confirm that spot is the dominant trading platform vis-à-vis futures for NIFTY 50 index and price signals emanating from spot are being factored in by the speculators in futures market. The findings are useful for investment professionals, traders, regulators and academia.*

## JEL CLASSIFICATION

G13, G14, C32

## KEYWORDS

price discovery, information transmission, market efficiency, cointegration.

## INTRODUCTION

Ever since the introduction of derivatives segment in the Indian equity markets, there has been interactions between the spot and futures markets. The two segments are linked to one another through information transmission and other linkages. The direction and quantum of investment in the two is determined by the price discovery process, which, in turn, determines the extent of arbitrage opportunities available. Price discovery is one of the core functions of any financial market. It is the process of determining the prices of securities through the demand and supply orders of buyers and sellers. Price discovery is the process by which markets attempt to find their fair prices (Schreiber and Schwartz, 1986). If the markets are efficient and frictionless, then price discovery should be instantaneous and contemporaneous. Price discovery function in turn depends on three factors namely: trading costs, trading restrictions and liquidity and leverage benefits. The market having advantage in these will be the dominant market and the other would be satellite market. Risk hedging and price discovery are two important roles of futures market.

CNX Nifty 50 Index of the National Stock Exchange (NSE) which is India's leading stock exchange provides fully automated screen-based trading system with pan India presence. The daily traded volume of equity was INR 26,168 crore as on June 9 2014. Trading in derivatives based on index futures commenced at NSE on June 12, 2000. The daily traded volume of index futures was INR 14,964 crore as on June 9 2014. Both Nifty Index spot and futures are regulated by the Securities and Exchange Board of India (SEBI) under the provisions of the SEBI Act, 1992.

The purpose of this study is to examine the price discovery and information transmission mechanism of the spot and futures market trading platform for NSE 50 stock index. The remainder of the paper is organized as follows: Section two gives a brief review of literature. Section three discusses data sources and description. Section four deals with the methodology while section five discusses the empirical results. Section six provides summary and concluding observations.

## REVIEW OF LITERATURE

According to Schwarz and Laatsch (1991), futures markets are an important means of price discovery in spot markets. Powers (1970) argued that futures markets increase the overall market depth and informativeness. Stroll and Whaley (1988) stated that futures markets enhance market efficiency. Fleming, Ostidiek and Whaley (1996) also show that futures lead the spot markets and note that investors prefer low cost markets and futures market will react faster to new information. Chan (1992) and Ghosh (1993) further report the dominant role of S&P 500 futures in the price discovery process. However, using a cointegration approach like that of Ghosh, the study by Wahab and Lashgari (1993) finds that error- correcting price adjustments occur significantly in both the S&P 500 futures and cash markets in price discovery. Ng (1987) finds that futures returns generally lead spot returns for a variety of futures contracts, including the S&P 500 Index. Studies from Non US markets include Iihara, Kato, and Tokunaga (1996) on the Nikkei Stock Average and Abhyankar (1995) on the FTSE 100 and both find that futures lead the spot. As for the Indian context, Thenmozhi (2002), Anandbabu (2003) have found that the futures market in India has more power in disseminating information and therefore has been found to play the leading role in the matter of price discovery. Mukherjee and Mishra (2004) have investigated the possible lead-lag relationship, both in among the Nifty spot index and index futures markets in India and found a strong contemporaneous and bidirectional relationship between the returns in the spot and futures markets.

Although there is no dearth of literature available on the price discovery and information transmission in the mature markets, this paper is an attempt in the direction to ascertain the lead lag relationship between the spot and futures segment of the NSE 50 index spanning a more recent study period.

## DATA SOURCES AND ITS DESCRIPTION

The sample used in the study is the NIFTY 50 spot index and NIFTY futures. The data used in the study covers the period from 1<sup>st</sup> April 2009 to 31 March 2014. The daily prices data for NIFTY 50 spot and futures was extracted from the Bloomberg database. NIFTY futures data obtained was continuous price series of the most liquid near month contracts. Non-trading days were excluded and the remaining data was made date synchronous by eliminating those dates where either the futures or the spot prices were unavailable.

## METHODOLOGY

The methodology used includes first converting the daily closing price data to daily returns by taking the log first difference. Return  $R_t$  at time  $t$  is given by  $R_t = \ln P_t - \ln P_{t-1}$ , where  $P_t$  is the closing price for day  $t$ . This was followed by an analysis of the characteristic properties of the return series, by looking at the first four moments (mean, standard deviation, skewness and kurtosis), and substantiating the results of skewness and kurtosis through the Jarque Bera Test for testing normality, and finally, the Ljung Box to check the independence of the series. Thus, the i.i.d. (identically and independently distributed) property of the all the series was tested.

This was followed by testing for stationarity of the data through the Augmented Dickey Fuller (ADF) Test. Then, the appropriate lag length for the autoregressive process, was estimated through the Schwarz Information Criteria (SIC), by selecting the lag length which minimized the SIC. Next, the Johansen's Cointegration

procedure was applied to the data to capture the presence of any long run equilibrium relationships between the spot and futures segments. In the context of the spot and futures segments in a market, the current futures (or spot) price could be represented as being dependent on the spot (or futures) price, as under:

$$F_t = \alpha_1 + \beta_1 S_t + \epsilon_{1t} \text{-----} \quad (1)$$

or

$$S_t = \alpha_2 + \beta_2 F_t + \epsilon_{2t} \text{-----} \quad (2)$$

where  $F_t$  and  $S_t$  are the futures and the spot prices at time  $t$ .

The above can be re-written with residuals, as under:

$$F_t - \alpha_1 - \beta_1 S_t = \hat{\epsilon}_{1t} \text{-----} \quad (3)$$

or

$$S_t - \alpha_2 - \beta_2 F_t = \hat{\epsilon}_{2t} \text{-----} \quad (4)$$

where  $\hat{\epsilon}_t$  is the white noise residual term. Equations 3 and 4 are linear combinations of  $F_t$  and  $S_t$ . If either  $\hat{\epsilon}_{1t}$  or  $\hat{\epsilon}_{2t}$  is stationary, then one of them is  $I(0)$  and there is at least one long run relationship between  $F_t$  and  $S_t$ . After confirming the long run relationship, Vector Error Correction Model (VECM) test was undertaken to check their short-run dynamics. Accordingly, the VECM for change in the say futures prices and in the spot prices can be represented as under:

$$\Delta F_t = \delta_f + \alpha_f \hat{\epsilon}_{t-1} + \beta_f \Delta F_{t-1} + \gamma_f \Delta S_{t-1} + \epsilon_{ft} \quad (5)$$

$$\Delta S_t = \delta_s + \alpha_s \hat{\epsilon}_{t-1} + \beta_s \Delta S_{t-1} + \gamma_s \Delta F_{t-1} + \epsilon_{st} \quad (6)$$

where  $\hat{\epsilon}_{t-1}$  measures how the current price of the dependent variable adjusts to the previous period's deviation from the long run, while  $\Delta S_{t-1}$  and  $\Delta F_{t-1}$  measure how the current price adjusts to the change in the variables in the previous period. The first part represents the error correction (EC), and its coefficients ( $\alpha_f$  and  $\alpha_s$ ) indicate the speed of adjustment in the futures prices and the spot prices respectively; the smaller the absolute value of the EC term, faster is the adjustment made by the concerned market towards equilibrium and leads the price discovery process. Results of the VECM tests were confirmed through the Granger Causality Test which indicates direction of the causality.

## 5. EMPIRICAL RESULTS

The descriptive statistics regarding daily returns for the Nifty spot and futures are given below:

TABLE 1: DESCRIPTIVE STATISTICS OF RETURN SERIES

Statistic	Spot	Futures
Mean	0.000609	0.000611
Maximum	0.1633	0.1619
Minimum	-0.0638	-0.0661
Std. Dev.	0.0141	0.0146
Skewness	1.3506	1.2014
Kurtosis	19.1699	17.022
Jarque Bera	13516.60 (0.000)*	10178.95 (0.000)*
Ljung Box	18.111	15.524
(Q Statistic)	(0.112)	(0.214)
Observations	1207	1207

Note: Fig. in ( ) indicate p-values; \* denotes significance at 5% level.

Ljung Box statistics are reported upto 12 lags.

The Nifty Index Spot has daily mean returns of .060%, with standard deviation, as a measure of volatility, being 1.4%. The Nifty Futures has a slightly higher mean return of .061% percent, with standard deviation being slightly higher at 1.46%. Both the Nifty Spot and Futures returns show evidence of fat tails, since the kurtosis exceeds three, which is the normal value, implying leptokurtic distribution; these returns also show evidence of positive skewness, which means that the positive tail is particularly extreme. This result is confirmed by the Jarque Bera test which indicates zero probability for both series, thus the null hypothesis of normal distribution is rejected. Accordingly, both the series are not normal, i.e., not identically distributed. Next, the Ljung Box (LB) test at level indicates a p-value for Q-statistic (for 12<sup>th</sup> lag) of more than 0.05 for spot series as well as for futures series. Thus, the null hypothesis of no autocorrelation is accepted. Therefore, past values of the innovations do not affect current values in both series, implying that both series are independently distributed.

The results for the stationary tests are as shown below:

TABLE 2: TEST FOR STATIONARITY

Test Statistic	Spot	Futures
At Level	-2.955141 (-0.1455)	-2.7928 (0.2002)
At First Difference	-36.67748 (0.0000)*	-33.5827 (0.0000)*

Note: Figures in brackets indicate the p-values;

\* denotes significance at 5% level

Results confirm the existence of unit root at level and exhibit stationarity at first difference for all sample series thus conforming that they are integrated to the first order. The Johnson Cointegration results as shown below clearly confirm the strong informational linkages between the two trading platforms having 2 cointegrating vectors.

TABLE 3: RESULTS OF JOHANSEN'S COINTEGRATION TEST

Test Statistic	r=0	r=1
Maximum Eigen value	87.957 (0.0000)*	6.947 (0.0084)*
Trace Statistic	94.905 (0.0000)*	6.947 (0.0084)*
Lag length#	2	2

Note: r – cointegration rank of the model; Figures in brackets indicate the p-values;

\* denotes significance at 5% level;

# - Based on minimum values of the Schwarz Information Criteria

This also implies that there is informational efficiency across the spot and futures segments in equity market. The VECM has been estimated with the lags as indicated by the Schwarz Information Criteria, and the results are reported below:



TABLE 4: VECM ANALYSIS

Test Statistic	Spot	Futures
Error Correction Coefficient	-0.0159	0.1987
[T-stat]	[-2.431]*	[0.832]

Note: T Statistic or [ ];

\* denotes significance at 5% level;

It shows error correction coefficient of the spot is smaller than futures. Hence if the co-integrated series is in disequilibrium in the short-run, it is the spot price that makes less adjustment than the futures price in order to restore the equilibrium. In other words, the spot markets lead the price discovery process. The information provides market traders an incentive to sell/short-sell spot and go long on options and exercise lending opportunities to make arbitrage profits. Such an arbitrage process is probably ensuring a long-run equilibrium relationship between these market pairs as confirmed by cointegration results. Further Granger causality test was performed to ascertain the direction of relationship. The results for the same are shown below in Table 5:

TABLE 5: GRANGER CAUSALITY TEST

Null Hypothesis	F Statistic	P-value
Spot does not Granger Cause Future	2.43228	0.0882**
Future does not Granger Cause Spot	0.3381	0.7132

Note: Lag structure based on minimum values of the Schwarz Information Criteria;

\*\* denotes significance at 10% level

It can be inferred that we have a weak unilateral causality from spot to the futures (interpreted at 10% level of significance). Combining this result with VECM results, shows that spot market relatively leads in price discovery. Thus the information flow is from spot to futures and investors are basically setting the price in spot markets for the speculators to follow while hedging through the futures market.

## 6. SUMMARY AND CONCLUSIONS

This paper examines the price discovery process in the spot and futures markets for Nifty 50 in India during the sample period from 1 April 2009 to 31 March 2014. The spot and forward price series were found to be integrated to order 1 and subsequently longrun equilibrium relationship was confirmed. VECM analysis showed that the spot market relatively leads in price discovery process and is the dominant platform to trade the NIFTY 50 index vis-à-vis futures which acts as a satellite platform for the same. Thus although volume wise future trading is lagging behind spot, the market participants in the futures are predominantly speculators who are taking price signals from the investors in spot to take positions in futures. Since inspite of low trading cost and fewer restrictions in futures, price signals seem to be emanating from spot challenges the market efficiency theory and points that other competing markets within India, e.g. the market for BSE as well as markets abroad where Nifty is traded, e.g. Singapore, have been ignored. It is quite possible that signals to the Nifty spot or futures markets are coming from a third market. The study is useful for the investment professionals who can make long/short strategies to make profits. It is also useful for the regulators to see the imperfections prevailing in the market microstructure to better and efficiently manage the smooth functioning of the equity markets.

However, the study has been limited to analysis of information flows between the spot and futures segments of the market. Volatility has been examined only with reference to the standard deviation. In order to broad-base the results of the study, volatility patterns could be studied in greater detail through higher order moments, to arrive at conclusions regarding volatility persistence and clustering, which could increase the usefulness of the study. The relevance of the study could also be enhanced further by extending its scope to cross-markets analysis, to include inter-market linkages, particularly volatility spillovers between markets. Further research could be undertaken along these lines.

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# EFFECTIVE GOVERNANCE FOR SUSTAINABLE GROWTH OF INDUSTRIAL UNDERTAKINGS AND MSME'S IN INDIA

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## ABSTRACT

*The objective of this topic is to discuss the role of effective governance for the sustainable growth and development of the industrial undertakings and MSMEs in India. As we know after recovering to a growth of 9.2 per cent in 2009-10 and 2010-11, growth of value added in industrial sector, comprising manufacturing, mining, electricity and construction sectors, slowed to 3.5 per cent in 2011-12 and to 3.1 percent in the current year. The manufacturing sector, the most dominant sector within industry, also witnessed a decline in growth to 2.7 per cent in 2011-12 and 1.9 per cent in 2012-13 compared to 11.3 per cent and 9.7 per cent in 2009-10 and 2010-11, respectively. The growth in electricity sector in 2012-13 has also moderated. The growth of the mining sector in 2012-13 is estimated at 0.4 per cent, though it showed an improvement over a negative growth of 0.63 per cent recorded in 2011-12. So with good governance and regulation we can expect the growth of industrial and MSME sector.*

## KEYWORDS

MSME's, effective governance.

## INTRODUCTION

Corporate governance refers to the system by which corporations are directed and controlled. The governance structure specifies the distribution of rights and responsibilities among different participants in the corporation (such as the board of directors, managers, shareholders, creditors, auditors, regulators, and other stakeholders) and specifies the rules and procedures for making decisions in corporate affairs. Governance provides the structure through which corporations set and pursue their objectives, while reflecting the context of the social, regulatory and market environment. Governance is a mechanism for monitoring the actions, policies and decisions of corporations. Governance involves the alignment of interests among the stakeholders.

## LITERATURE REVIEW

According to the Financial Stability Forum (2001), among the main factors the support the stability of any country's financial system include:

- good corporate governance effective marketing discipline
- strong prudential regulation and supervision
- accurate and reliable accounting in financial reporting systems
- a sound disclosure regimes
- the enforcement of effective laws
- an appropriate savings deposit protection system.

of particular interest to this study is corporate governance. Corporate governance has been looked at and defined variedly by different scholars and practitioners; however they all have pointed to the same end hence giving more of a consensus in the definition. For example, the Financial Times (1997) defines corporate governance as the relationship of the enterprise to shareholders or in the wider sense as the relationship of the enterprise to society as a whole, however,

The Financial Stability Forum (2001) offers a definition with a wider outlook and contends that it means the sum of the processes, structures and information used for the directing and overseeing the management of an organization. The OECD on the one hand, has defined corporate governance as a system on the basis of which business companies are directed and managed. It is upon this system that specifications are given for the division of competencies and responsibilities between individual included parties, such as the board of directors, the supervisory board, the management and majority and other shareholders and formulates rules and procedures for adopting decisions on corporate matters.

In another perspective, Arun and Turner (2002f) contend that there exist a narrow approach to corporate governance which views the subject as the mechanism through which shareholders are assured that managers will act in their interests.

Shleifer and Vishny (1997), Vives (2000) and Oman (2001) observe that there is a broader approach which views the subject as the methods by which suppliers of finance control managers in order to ensure that their capital cannot be expropriated and that they earn a return on their investment. There is a consensus, however that the broader view of corporate governance should be adopted in the case of banking institutions because of the peculiar contractual form of banking which demands that corporate governance mechanisms for banks should encapsulate depositors as well as shareholders.

Arun and Turner (2002) joins the consensus by arguing that the special nature of banking requires not only a broader view of corporate governance, but also government intervention in order to restrain the behaviour of bank management. They argue further that the unique nature of the banking firm, whether in the developed or developing world, requires that a broad view of corporate governance, which encapsulates both shareholders and depositors, be adopted for banks. They posit that, in particular, the nature of the banking firm is such that regulation is necessary to protect depositors as well as the overall financial system.

## GROWTH OF INDUSTRIAL SECTOR

The index of industrial production (IIP) with 2004-5 as base is the leading indicator for industrial performance in the country. Compiled on a monthly basis, the current IIP series based on 399 products/ product groups is aggregated into three broad groups of mining, manufacturing, and electricity. The IIP as an index shows both the level of production and growth. Overall industrial performance, as reflected by the IIP continued to moderate from Q1 of 2011-12 with growth turning negative in Q1 of 2012-13, before improving to 2.1 per cent in Q3 of 2012-13. The Mining sector production has contracted in the last six quarters. The contraction in the current year was largely because of decline in natural gas and crude petroleum output. Manufacturing, which is the dominant sector in industry, also witnessed deceleration in growth, as did the electricity sector (Table 9.1). There was, however, a sharp pick-up in growth in October 2012 with manufacturing growth improving to 9.8 per cent, the highest recorded since June, 2011. Growth, however, turned negative in November and December, 2012 and was placed at (-) 0.8 per cent and (-) 0.6 per cent respectively.

## WHY HAS GROWTH MODERATED?

The moderation in industrial growth, particularly in the manufacturing sector, is largely attributed to sluggish growth of investment, squeezed margins of the corporate sector, deceleration in the rate of growth of credit flows and the fragile global economic recovery.

## INVESTMENT IN THE INDUSTRIAL SECTOR

Gross capital formation (GCF) in the industrial sector comprising mining, manufacturing, electricity and construction recorded an average growth of per cent during 2004-5 to 2011-12. Growth turned negative during 2008-9 and again in 2011-12. The combined industry sector in 2007-8 accounted for 55 per cent of total GCF (excluding valuables) in the country, which declined 44.4 per cent in 2011-12 (Table 9.3). 9.9 The decline in overall share of GCF in industry in the total GCF for the economy and overall negative annual growth during 2008-09 and 2011-12 was largely due to a negative growth in GCF in the registered and unregistered manufacturing sector. Share of the registered manufacturing sector in overall GCF declined from a peak of 38.1 per cent in 2007-8 to 27.9 per cent in 2011-12. As percentage of GDP originating from industry, the share of GCF reached 78.7 per cent in 2007-8, though it moderated to 62.4 per cent in 2011-12. The GCF of the registered manufacturing sector in 2008 had reached a level of over 97 per cent income of this sector. 9.10 Investment in industry has generally been buoyant and witnessed an increase in its share in overall GCF of the economy. The share peaked to reach 56.2 per cent of total GCF in the economy in 1995-6 in the post reform period. The rate of growth of GCF, however, moved with the rate of growth of industry. This sector has continued to allocate a significantly high share of its income to the capital formation.

## CREDIT FLOW TO THE INDUSTRIAL SECTOR

Moderation in investment was largely because of two factors: decline in profitability and deceleration in the rate of growth of credit to the industrial sector. Overall rate of growth of credit flow to industry moderated from 26.48 per cent on an average in 2010-11 to an average 15.52 per cent in Q3 of 2012-13. The moderation in the growth was even sharper for the construction sector with overall growth in credit disbursement declining from 16.3 per cent in 2010-11 to 6.6 per cent in Q3 of 2012-13. Mining and electricity sectors also suffered a decline in the growth of credit disbursement. The momentum of credit growth to the industrial sector based on seasonally adjusted annualized rate indicates a downward trajectory suggesting that credit pick up may be slow.

## CORPORATE PERFORMANCE

Sluggish industrial performance also affected corporate performance. The rate of growth of sales of the corporate sector particularly in respect of listed manufacturing companies for the private sector, declined from an average of 28.8 per cent in Q1 of 2010-11 to 11.4 per cent in Q2 of 2012-13, the latest quarter for which comparable set of data are available. There was a significant increase in the rate of growth of interest expenditure with year on year growth peaking at 41.5 per cent in Q2 of 2011-12. Together with a deceleration in the rate of growth of sales, the ratio of net profit to sales also moderated. The ratio of profit to sales which averaged 8 per cent in the first two quarters of 2010-11 has also moderated to 3.6 per cent in Q3 of 2011-12 and has been in the range of 5 to 6 per cent in the last three quarters (Table 9.6). The growth of interest payments moderated to 10 per cent in Q2 of 2012-13, reflecting stabilization of the interest rate with repo rates remaining unchanged from April, 2012 to January, 2013. Consequently, profit in Q2 2012-13 grew somewhat, in part also because of a sharp increase in other incomes. As has already been indicated in Chapter 4, the corporate sector has only had limited pricing power, with inflation for non-food manufacturing recording a sharper deceleration than headline inflation. Inflation for capital goods remained relatively low.

## COMPARATIVE PICTURE OF INDIA AND WORLD MANUFACTURING PRODUCTION

India is one of the top ten manufacturing countries though its share in total manufacturing value added (MVA) is only about 1.8 per cent. The impact of the post-crisis slowdown on industrial growth has been relatively mild on developing countries including India yet the downward trend in MVA has been significant. The intensity of the slide did vary across countries as shown in Figure in the box. The growth rate of world MVA had declined from 5.4 per cent in Q1 of 2011-12 to 2.2 per cent in Q2 of 2012-13. During the same period China's MVA growth rate declined from 14.3 per cent to 7.3 per cent but the deceleration rate has been sharper in the case of India as the rate of growth dipped from 7.3 per cent to 0.2 per cent. Analysis of the sub-group level MVAs shows sharp differences between India vis-à-vis other major manufacturing countries. The production of machinery and equipment, one of the key segments of the capital goods sector, has been growing at faster rate in the United States, Canada, China, Malaysia as compared to the deceleration in India's case. A similar pattern is observable in other capital goods segments and high technology sectors. The reason is India's competitive disadvantage owing to low-level technology, higher input costs and poor quality infrastructure. A long term trend analysis from 1995 to 2009 shows that India has lagged behind in increasing its share in MVA of sophisticated products. It has fared better in medium-low technology products in labour-intensive sectors such as textiles, wearing apparel and leather products. Even in these three sectors India's share was low as compared to China, which dominates all three sectors. A two-digit industry level analysis of world manufacturing shows that in recent years the five fastest-growing sectors were - office accounting and computing; radio, TV and communication equipment; electrical machinery and apparatus, other transport; and basic metal. Other than basic metal all these sectors are medium and high technology activities. India's performance in recent years has been dismal in some of these fast moving sectors. In contrast, China accounted for more than 50 per cent of the developing economies total MVA in 15 out of the 22 industrial sectors -- India's share was significant only in a few of these sectors. The latest competitive industrial performance index (CIP) compiled by the United Nations Industrial Development Organization (UNIDO), ranks India 42nd out of 118 countries the same as in 2005. China is ranked 5th..

## MICRO, SMALL AND MEDIUM ENTERPRISES (MSME) SECTOR

The MSME sector covers both the registered and informal sectors. The classification of micro, small and medium enterprises at present is based on the criterion of investment in plant and machinery by each enterprise. Detailed information for the registered MSMEs on the various economic variables such as employment, investment, products, gross output, and exports is available based on the Fourth Census of MSME (2006-07). The size of the registered MSMEs was estimated to be about 15.84 lakh units with sub-sector wise composition in the proportion of 94.9 per cent micro enterprises, 4.89 per cent small and 0.17 per cent medium enterprises. The total registered MSME sector comprised of 67.1 per cent manufacturing enterprises and 32.9 per cent services enterprises. About 45 per cent of these registered enterprises were located in rural areas. More detailed information based on the Fourth Census on the unorganized sector units, constituting about 94 per cent of the entire MSME sector is awaited.

In the recent past the Prime Minister's Task Force on MSMEs and the Twelfth Plan Working Group on MSMEs have discussed issues related to the MSME sector. The Twelfth Five Year Plan policy framework is guided by the recommendations of these key committees. The Plan covers various aspects of the MSME sector and its key recommendations fall under six broad verticals, viz. 1) finance and credit (ii) technology (iii) infrastructure (iv) marketing and procurement (v) skill development and training, and (vi) institutional structure. The Plan has a separate set of recommendations for the khadi and village industries and the coir sector. In order to boost the MSME sector, several schemes are under operation including the following ones.

1. **PROCUREMENT POLICY:** The government has notified a Public Procurement Policy for Goods Produced and Services rendered by Micro & Small Enterprises (MSE) order, 2012 effective from 1st April, 2012. The policy mandates that all the central ministries / departments / central public sector undertakings (CPSUs) shall procure a minimum of 20 per cent of their annual value of goods / services required by them from MSEs. Further, policy has earmarked a sub-target of 4 per cent procurement out of this 20 per cent from MSEs owned by scheduled caste/ scheduled tribe (SC / ST) entrepreneurs.
2. **MSE: Cluster Development Programme (MSE- CDP):** The Ministry of MSME has adopted a cluster approach for holistic development of MSE in a cost effective manner. To build capacity of MSMEs for common supportive actions, soft interventions are undertaken in the existing clusters/new industrial areas/ estates or existing industrial areas/estates. To ensure transparency and speedy implementation of the MSE-CDP, office of the Development Commissioner, MSME has started an online application system from 1 April 2012. Hard interventions are taken up to create/upgrade infrastructure facilities and setting up of common facility centres in new/ existing industrial estates/clusters.
3. **CREDIT GUARANTEE SCHEME:** The Government is implementing the Credit Guarantee Fund Scheme for MSEs with the objective of facilitating flow of credit to the MSEs, particularly to micro enterprises by providing guarantee cover for loans upto ` 100 lakh without collateral / third party guarantees. For making the scheme more attractive to both lenders as well as borrowers, several modifications have been undertaken which, inter alia, include: (a) enhancement in the loan limit to ` 100 lakh; (b) enhancement of guarantee cover from 75 per cent to 85 per cent for loans upto ` 5 lakh; (c) enhancement of

guarantee cover from 75 per cent to 80 per cent for MSEs owned/operated by women and for loans in north eastern region (NER); (d) reduction in one-time guarantee fee from 1.5 per cent to 1 per cent and annual service charges from 0.75 per cent to 0.5 per cent for loans upto ` 5 lakh and (e) reduction in one-time guarantee fee for NER from 1.5 per cent to 0.75 per cent.

4. **CREDIT LINKED CAPITAL SUBSIDY SCHEME FOR MICRO AND SMALL ENTERPRISES (CLCSS) FOR MSEs:** The scheme aims at facilitating technology up-gradation of MSEs by providing 15 per cent capital subsidy (limited to maximum ` 15 lakh) for purchase of plant & machinery. Maximum limit of eligible loan for calculation of subsidy under the scheme is ` 100 lakh. Presently, 48 well established and improved technologies/sub sectors have been approved under the scheme. The CLCSS is implemented through 11 nodal banks/agencies including the Small Industries Development Bank of India (SIDBI), National Bank for Agriculture and Rural Development (NABARD) and Tamil Nadu Industrial Investment Corporation (TICC), Chennai (TIIC) and National Small Industries Development Corporation (NSIC) Ltd.

## CORPORATE GOVERNANCE PRINCIPLES FOR SUSTAINABLE GROWTH

Contemporary discussions of corporate governance tend to refer to principles raised in three documents released since 1990: The Cadbury Report (UK, 1992), the Principles of Corporate Governance (OECD, 1998 and 2004), the Sarbanes-Oxley Act of 2002 (US, 2002). The Cadbury and OECD reports present general principles around which businesses are expected to operate to assure proper governance. The Sarbanes-Oxley Act, informally referred to as Sarbox or Sox, is an attempt by the federal government in the United States to legislate several of the principles recommended in the Cadbury and OECD reports.

**Rights and equitable treatment of shareholders:** Organizations should respect the rights of shareholders and help shareholders to exercise those rights. They can help shareholders exercise their rights by openly and effectively communicating information and by encouraging shareholders to participate in general meetings. **Interests of other stakeholders:** Organizations should recognize that they have legal, contractual, social, and market driven obligations to non-shareholder stakeholders, including employees, investors, creditors, suppliers, local communities, customers, and policy makers.

**Role and responsibilities of the board:** The board needs sufficient relevant skills and understanding to review and challenge management performance. It also needs adequate size and appropriate levels of independence and commitment.

**Integrity and ethical behavior:** Integrity should be a fundamental requirement in choosing corporate officers and board members. Organizations should develop a code of conduct for their directors and executives that promotes ethical and responsible decision making.

**Disclosure and transparency:** Organizations should clarify and make publicly known the roles and responsibilities of board and management to provide stakeholders with a level of accountability. They should also implement procedures to independently verify and safeguard the integrity of the company's financial reporting. Disclosure of material matters concerning the organization should be timely and balanced to ensure that all investors have access to clear, factual information.

## CORPORATE GOVERNANCE MODELS AROUND THE WORLD

There are many different models of corporate governance around the world. These differ according to the variety of capitalism in which they are embedded. The Anglo-American "model" tends to emphasize the interests of shareholders. The coordinated or Multistakeholder Model associated with Continental Europe and Japan also recognizes the interests of workers, managers, suppliers, customers, and the community. A related distinction is between market-orientated and network-orientated models of corporate governance.

### CONTINENTAL EUROPE

Some continental European countries, including Germany and the Netherlands, require a two-tiered Board of Directors as a means of improving corporate governance. In the two-tiered board, the Executive Board, made up of company executives, generally runs day-to-day operations while the supervisory board, made up entirely of non-executive directors who represent shareholders and employees, hires and fires the members of the executive board, determines their compensation, and reviews major business decisions.

### INDIA

India's SEBI Committee on Corporate Governance defines corporate governance as the "acceptance by management of the inalienable rights of shareholders as the true owners of the corporation and of their own role as trustees on behalf of the shareholders. It is about commitment to values, about ethical business conduct and about making a distinction between personal & corporate funds in the management of a company." It has been suggested that the Indian approach is drawn from the Gandhian principle of trusteeship and the Directive Principles of the Indian Constitution, but this conceptualization of corporate objectives is also prevalent in Anglo-American and most other jurisdictions.

### UNITED STATES & UNITED KINGDOM

The so-called "Anglo-American model" of corporate governance emphasizes the interests of shareholders. It relies on a single-tiered Board of Directors that is normally dominated by non-executive directors elected by shareholders. Because of this, it is also known as "the unitary system". Within this system, many boards include some executives from the company (who are ex officio members of the board). Non-executive directors are expected to outnumber executive directors and hold key posts, including audit and compensation committees. The United States and the United Kingdom differ in one critical respect with regard to corporate governance: In the United Kingdom, the CEO generally does not also serve as Chairman of the Board, whereas in the US having the dual role is the norm, despite major misgivings regarding the impact on corporate governance.

## CONCLUSION

Corporate governance affects the development and functioning of capital markets and exerts a strong influence on resource allocation. In an era of increasing capital mobility and globalisation, it has also become an important framework condition affecting the industrial competitiveness and economies of Member countries. This paper set out to further develop our understanding of corporate governance and its effect on corporate performance and economic performance. In doing so, it addresses some of the underlying factors that promote efficient corporate governance, and examines some of the strengths, weaknesses and economic implications associated with various corporate governance systems. It also provided a survey of empirical evidence on the link between corporate governance, firm performance and economic growth, identifying areas in which a consensus view appears to have emerged in the literature and areas in which further research is still needed.

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