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IMPACT OF MICROFINANCE ON HOUSEHOLD INCOME, LIVESTOCK HOLDINGS, AND LAND PRODUCTIVITY: THE CASE OF RURAL HOUSEHOLDS IN TIGRAY, NORTHERN ETHIOPIA

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ABSTRACT

Impact evaluation pinpoints the average effects of a program on participants using impact indicators by estimating the counterfactual from a control group of non-participants. It is marred by conceptual and methodological complexities. The paper uses a cross-sectional data collected from a quasi-experimental sample obtained from four rural sub-districts (tabias) in the northern Ethiopian region of Tigray for measuring impact of microfinance. Propensity score matching has been used to deal with selection bias and measure the average treatment effect on the treated (ATT). Household consumption expenditure, livestock possession, and land productivity have been used as impact indicators. Findings show that microfinance has had statistically significant positive impact on household consumption (food and non-food) expenditure and livestock holdings measured in Tropical Livestock Unit (TLU). Percapita household income also showed statistically significant impact on participating households. However, we did not find statistically significant impact on land productivity indicating that most of the benefits of microfinance may have been used for purposes of consumption rather than for investments intended to promote land productivity.

KEYWORDS

ATT, PSM, Tigray, counterfactual.

1. INTRODUCTION

Microfinance refers to the provision of mainly, but not exclusively, small loans and savings services to poor and low-income clients. It is considered as a crucial tool widely used all over the world to fight against poverty. Governments as well as non-governmental organizations utilize various policies and programs, microfinance being one of them, with the objective of attaining specified ends. Evaluating the actual impact of these interventions has been a point of academic and practical discourse for some time now. The most challenging part in measuring impact has been the complexities involved in controlling for selection bias (see Ravallion, 2001; Heckman et al., 1998).

In impact evaluation, the main focus is on finding the difference between what is happening with the program and what would have happened without the program, the latter is what is known as the counterfactual. A number of studies have been conducted to evaluate the impact of microfinance (see Sharma and Buchenrieder, 2002; Khandker, 2005; Brau and Woller, 2004; Coleman, 2006). Most of these studies point to a positive impact of microfinance on client income and welfare, hence on poverty reduction. Others are less enthusiastic on its income/consumption effects but stress on its impact in reducing vulnerability through income smoothing, consumption smoothing, and asset accumulation (for example see, Morduch, 1998; Zaman, 1999; Hulme, 2000). A widely cited study on the impact of microfinance group loans in Bangladesh by Pitt and Khandker (1998) produced significant impact on consumption (income). An article produced by Morduch (1998) using the same data set by employing an alternative method for controlling selection bias did not obtain significant improvement in income on participants showing the methodological difficulties of evaluating impact of programs.

In line with what has been found elsewhere in the world, most of the microfinance impact studies conducted in Ethiopia indicate significant positive impact on consumption/income (e.g., Zaid, 2008; Doocy et al., 2005; Borchgrevink et al., 2003; Kebede et al., 2002) although many of them fail to utilize appropriate methods to deal with selection bias. The main purpose of this study is to evaluate the impact of microfinance on household consumption (used as a proxy for income), livestock possessions, and land productivity using data gathered from rural households in the northern Ethiopian region of Tigray by employing bias corrected estimation techniques. We used the propensity score matching method introduced by Rosenbaum and Rubin (1986) to deal with problems associated with selection bias.

The rest of the paper is organized as follows. Section 2 outlines the dataset and method of analysis used for the study. Section 3 provides estimated results and discussion associated with the results, and Section 4 concludes.

2. DATA AND METHODOLOGY

2.1. DATA

Data used for this study were collected from 361 households in four rural sub-districts (*tabias*) located in three zones of Tigray region; namely, Eastern, Central, and South Eastern zones. Dedebit Credit and Savings Institution (DECSI) is the only microfinance (MFI) service provider in the stated *tabias*. Established in 1994, DECSI is one of the biggest and renowned MFIs operating in the country. Data collection was administered in 2009. It may also need to be noted that a similar dataset was collected in 2007 using the same questionnaire from the same study areas enabling comparative analysis of both datasets. A summary of sample households used for the study is shown in the table below disaggregated by *tabia*, participation, and gender of household head.

TABLE 1: SAMPLE HOUSEHOLDS BY PARTICIPATION AND GENDER OF HOUSEHOLD HEAD

	Program Participants			Non Participants			Total Sample		
Tabia	M	F	T	M	F	T	M	F	T
Arato	56	14	70	9	7	16	65	21	86
Rubafeleg	33	39	72	9	10	19	42	49	91
Siye	32	15	47	29	10	39	61	25	86
Tsenkanet	50	25	75	9	14	23	59	39	98
Total	171	93	264	56	41	97	227	134	361

Arato is located in the Enderta *wereda* (district) of the South Eastern zone; Rubafeleg and Tsenkanet are found in the Eastern zone of the region, in Hawzen and Atsbi-Wenberta *weredas*, respectivfely. Tabia Siye is located in the Tanqua-Abergele *wereda* of the Central zone. DECSI started its microfinance loan provision using the classical Grameen Bank model of solidarity groups. It later introduced new modalities of loan delivery along with the group model and this enabled it to expand its client base tremendously. The major additions to the group loans are the package loans that are based on individual delivery modality and guaranteed by regional government budget and the microenterprise loans provided to a group of microenterprise operators or individuals on the basis of collateral (DECSI, 2007). The microenterprise credit scheme is designed to cater to the capital needs of small and microenterprises, targeting mainly urban clients and extended against asset collateral. The package loans are, however, designed to provide individual loans to farmers entitled for access to a package of services and inputs based on the integrated household oriented package program introduced in 2003 with a clear objective of raising household income and thereby reducing poverty. The introduction of package loans has attracted many clients in rural areas with the end result of majority of households becoming clients of DECSI. This is also reflected in our sample which is gathered on a proportional basis to the number of program participants/non-participants and gender composition of household heads in each of the study sites.

2.2. METHODOLOGY

As indicated earlier, the actual impact of program participation can be obtained as a difference of what is happening with the program and what would have happened without the program to program participants. In other words, after determining the impact indicator, say income, program impact can be computed as the difference between the current level of income (after program participation) and what the level of income would have been had the program participants did not take part in the program. The question here is how does one estimate the "what would have happened" part, also called the counterfactual, for those who are participating in the program as it is not observable.

Put in term of equations the average effect of treatment, or program impact, denoted by ATT, can be represented as follows:

$ATT = E(Y_1 - Y_0 / D=1)$ (1)

which is the same as:

$ATT = E(Y_{1i} \mid D_i = 1) - E(Y_{0i} \mid D_i = 1)$

The sample equivalent of this gives:

$$ATT = \frac{1}{n}\sum_{i=1}^{n}(Y_{1i} - Y_{0i}) \quad \mid D_i = 1 \text{ or}$$

$$ATT = \frac{1}{n}\sum_{i=1}^{n}(Y_{1i} \mid D_i = 1) - (Y_{0i} \mid D_i = 1) \quad (2)$$

Where E refers to expected value or mean; Y_1 is outcome with the program; Y_0 is outcome without the program, and D_i shows program participation (or participation dummy) with D=1 showing participation and D=0 indicating non-participation. While the outcome of what has happened to the individual participating in the program (i.e., $(Y_{1i} \mid D_i = 1)$ is indeed observable, the outcome of what would have happened to the same individual without the program (i.e., $(Y_{0i} \mid D_i = 1)$) is not observable. This is because it would not be possible to observe the same person in different states at the same time. In other words, in a sample survey one can only observe outcomes for those participating in the program and/or for those not participating in the program. It would not be possible to observe outcomes regarding what would have happened without the program for those who are in the program; and outcomes regarding what would have happened with the program for those who are not in the program (Ravallion, 2001; Heckman et al., 1998; Cobb-Clark and Crossley, 2003).

Now the question is whether we can approximate the counterfactual from a similar group of persons not participating in the program. Under conditions of randomized program placement; that is, if participants were randomly selected to the program, then Y_1 for program participants and Y_0 for non-participants would be the same. However, if participants self-select to the program, these two will not be equal and our estimates will be biased and inconsistent due to selection bias. In terms of regression, selection bias occurs when one or more regressors are correlated with the error term. In other words, one or more of the regressors are not exogenous or are confounded resulting in biased estimates. Put in terms of standard econometrics formulation, outcome can be measured using the following equation:

$Y_i = \alpha + \beta D_i + \delta X_i + \varepsilon_i$ (3)

where Y_i is the dependent variable representing outcome or effect; D_i is the treatment indicator or participation dummy (D = 1 indicating participation, and D = 0 showing non-participation); X_i stands for the control variables such as age, family size, and other characteristics; α, β and δ are the parameters or coefficients and ε_i is the residual term capturing other determinants of Y_i as well as measurement errors.

For a participating individual (i.e., when D = 1), outcome will be equal to $\alpha + \beta D_i + \delta X_i + \varepsilon_i$. In the case of a non-participant (i.e., when D = 0), outcome will be measured by $\alpha + \delta X_i + \varepsilon_i$. The difference between the two, which is β, provides program impact. But this assumes that there is no selection bias.

In programs like the one under study where participants self select, impact evaluation requires the use of methods that correct for the bias. The methods widely used to generate bias corrected estimates under non-randomized program placement are instrument variable estimation, matching, and difference in difference methods (see for example, Ravallion, 2001; Cobb-Clark and Crossley, 2003). The alternative employed for this study to generate bias corrected estimates is the matching method using propensity score introduced by Rosenbaum and Rubin (1983). Propensity score is the conditional probability of participation given pretreatment characteristics. The basic tenet behind propensity score matching (PSM) is that since outcome is independent of participation given pretreatment characteristics, then it is also independent of participation given the propensity score (ibid.). Hence, observations with the same propensity score will have the same distribution of observable and unobservable characteristics irrespective of treatment (Becker and Ichino, 2002).

In PSM, program participants and non-participants are matched on the basis of their propensity score. The propensity score, P(x), provides the conditional probability of participation given a vector of pretreatment control variables (X_i) and, as a probability measure, its value ranges between zero and one ($0<P(x)<1$). It can be computed as:

$P(x) = Pr(D = 1 \mid X)$ (4)

where, D and X refer to participation dummy and a vector of pretreatment control variables respectively.

Once the propensity score is known impact or ATT can be estimated as shown in (5) below. Using the propensity score to deal with selection bias, equation (1) is thus modified as (Becker and Ichino, 2002):

$ATT = E(Y_{1i} - Y_{0i} \mid D_i = 1)$

$= E(E(Y_{1i} - Y_{0i} \mid D_i = 1, P(x_i)))$

$= E[E(Y_{1i} \mid D_i = 1, P(x_i)) - E(Y_{0i} \mid D_i = 0, P(x_i)) \mid D_i = 1]$ (5)

As a conditional probability of treatment, the propensity score is continuous and it is difficult to find observations with identical scores for matching. The best option is therefore to match observations on the basis of closeness of their propensity scores. And there can be different ways of determining nearness. The most widely used methods are the nearest neighbor, stratification, radius, and kernel matching. With each method having limitations of sort, joint consideration of these methods provides a way of judging the robustness of the estimates. In this study we use the matching estimators developed by Becker and Ichino (2002). The outcome indicators used to measure impact are household income using consumption (food and non-food consumption) as proxy, livestock holdings, & land productivity. We thus evaluate the impact of participating in the microfinance program using these indicators & the results are outlined in the subsequent section.

3. RESULTS AND DISCUSSION

As indicated in the preceding section, estimation of program impact or ATT by using propensity score matching involves these steps; (1) estimating the propensity score, (2) matching observations using their propensity score, and (3) computing the mean difference between the outcome of the treated subjects and that of the control units. The propensity score is estimated using participation (1=participant; 0=non-participant) as a dependent variable regressed on a number of explanatory variables.

The regressands used for propensity score estimation are those that are not affected by program participation. Microfinance participation does not affect the land holding size of households as land in Ethiopia is a public property without any relation to microfinance. Land distribution took long time ago in the study area before microfinance was introduced. Moreover, we have excluded land rented in, which may have some relationship with microfinance participation. Similarly, household size and age of the household head have little to do with microfinance participation. Moreover, literacy and level of schooling have little, if at all, relation with participation in the program because they have more to do with availability of schools in the study areas or their vicinity. The location dummies (i.e., the study *tabias* that we have included in the explanatory variables) will obviously have no relationship with participation in the program as the program is universally available for all rural villages in the region. After running the model, we found that the balancing property is satisfied and the estimated results are provided in the table below. We used robust standard errors to ensure that the problem of heteroskedasticity is taken care off.

TABLE 2: PROBIT ESTIMATION OF THE PROPENSITY SCORE (PROBABILITY OF PARTICIPATION)

Variables	Description	Coef.	Robust Std. Err.	P>z
Land Size	Household Landholding size in *tsimad* (continuous)	0.0440	0.0352	0.211
Irrigated Land	Availability of irrigated land (dummy)	0.2789	0.2162	0.197
Household Size	Household size (continuous)	0.1227***	0.0466	0.008
Age of HHH	Age of the household head (continuous)	0.0645**	0.0326	0.048
Age Squared	Age squared (continuous)	-0.0007**	0.0003	0.032
Literacy	Literacy of household head (dummy)	0.2430	0.1964	0.216
Pre-secondary School	Family members with pre-secondary education (continuous)	0.0495	0.0688	0.472
Post-Elementary School	Family members with post-elementary education (continuous)	0.2893*	0.1480	0.051
Dependency Ratio	Dependency ratio (continuous)	0.3622	0.3750	0.334
Tabia Arato	Arato sub-district (dummy)	-0.0460	0.2625	0.861
Tabia Siye	Siye sub-district (dummy)	-0.9931***	0.3021	0.001
Tabia Tsenkanet	Tsenkanet sub-district (dummy)	-0.3187	0.2278	0.162
Constant		-1.6689**	0.7316	0.023

*** = significant at 1% level
** = significant at 5% level
* = significant at 10% level
Number of Obs. = 361
LR chi2(12) = 68.56
Prob > chi2 = 0.0000
Pseudo R2 = 0.1632

Once the propensity score is estimated the next step would be to match observations based on their propensity score and then obtaining the impact as a difference of the outcomes for treated and control observations. Following Becker and Ichino (2002), we used four matching alternatives; namely, nearest neighbour, stratification, radius, and kernel. In nearest neighbour matching each treated observation is matched with a control observation with the nearest propensity score. In the case of stratification, matching the data set is divided into various intervals or blocks with each block containing treated and control observation with, on average, the same propensity score. In radius matching, each treated observation is matched with those control observations that fall within a pre-specified radius of the propensity score of the treated observation. Kernel matching is that method of matching where all treated observations are matched with a weighted average of all control observations. In the case of kernel matching, we used bootstrapping to be able to obtain a large number of matches. After treated and control observations are matched, the ATT is found by summing the differences in outcomes between the treated and control observations in each of the matched groups. Note that some observations from the control units are omitted while conducting the matching because they could not obtain appropriate matches from the treated units, and this is more so in the case of nearest neighbour matching which, as explained above, is based on a one to one matching.

TABLE 3: ATT RESULTS (IMPACT) BASED ON FOUR MATCHING METHODS

Variables	Matching Method	No. of Treated Obs.	No. of Control Obs.	ATT	Std. Err.
Food Consumption Expenditure	Nearest Neigbour	264	64	175.58*	100.543
	Stratification	264	90	206.2***	77.94
	Radius	264	90	179.47**	88.664
	Kernel	264	90	174.19*	90.31
Non Food Expenditure	Nearest Neigbour	264	64	113.967***	30.727
	Stratification	264	90	115.261***	18.83
	Radius	264	90	106.927***	21.198
	Kernel	264	90	99.207***	22.352
Total Expenditure	Nearest Neigbour	264	64	289.55**	140.636
	Stratification	264	90	321.469***	86.032
	Radius	264	90	286.393***	97.639
	Kernel	264	90	273.4***	94.441
Percapita Total Expenditure	Nearest Neigbour	264	64	52.55**	21.749
	Stratification	264	90	18.426	21.619
	Radius	264	90	43.113*	24.916
	Kernel	264	90	49.405***	16.026
Tropical Livestock Unit (TLU)	Nearest Neigbour	264	64	1.31*	0.682
	Stratification	264	90	0.981***	0.392
	Radius	264	90	0.937**	0.454
	Kernel	264	90	0.999**	0.414
Land Productivity	Nearest Neigbour	264	64	65.993	455.032
	Stratification	264	90	-27.399	479.115
	Radius	264	90	-7.322	251
	Kernel	264	90	65.706	442.205

**** = significant at 1% level; ** = significant at 5% level; *=significant at 10% level

As indicated earlier, the outcome indicators we used to measure the impact of microfinance participation are household consumption expenditure (as a proxy for income), livestock holdings in TLU, and land productivity per hectare. Instead of using one or two, we employed all four matching methods as a means of testing the robustness of results. As shown in the table above, the results of the analysis show that microfinance participation has brought statistically significant gains on income/welfare and livestock ownership but not on land productivity. A participant household has gained between 273 to 321 ETB (Ethiopian Birr) of monthly consumption/income that is attributable to microfinance. Disaggregated in terms of food and non-food consumption, the gains amount to between 174 to 206 ETB, and between 99 to 117 ETB of monthly consumption, respectively, as a result of participation in the program. Not only overall household consumption levels but also per capita consumption levels have displayed positive gains to participating households amounting to between 43 to 52 ETB of monthly consumption.

Similarly, household livestock holdings show positive gains as a result of participation in microfinance. Thus, participating households gained about an ox equivalent (i.e., 1 TLU) of livestock compared to non-participant households. However, we did not find significant gains in land productivity in favour of participating households. This may be because of the fact that whatever gains households obtain from microfinance most of it is used for consumption purposes rather than land improvement related investments. A previous study conducted in the same study area using the same questionnaire also show similar findings indicating the robustness of the results (Zaid, 2008). We may thus learn from the findings that the benefits obtained from microfinance are mainly used for purposes of consumption smoothing rather than long term investments geared towards increasing land productivity.

CONCLUSION

The microfinance industry that has flourished all over the world today began as a movement against the highly subsidized and unsustainable agricultural credit of the 1960s and 1970s. Since the early 1980s, provision of credit to the poor started to emphasize on financial discipline, institutional sustainability, and the belief that the poor are bankable. And there have been many tales of success stories associated with microfinance. An important question in relation to this is "how does one measure the actual benefit or impact associated with the program?" Measuring the impact of microfinance, and for that matter any program, is replete with conceptual and methodological difficulties. In this study, we have attempted to evaluate the impact of microfinance using a cross-sectional data collected from the northern Ethiopian region of Tigray. We used income (using consumption expenditure as proxy), livestock ownership, and land productivity as impact indicators. In terms of methodological approach, we applied the propensity score matching to deal with selection bias associate with programs where participants are not randomly assigned. We found in the study that microfinance has had statistically significant impact on program participants in terms of income and livestock ownership. However, the impact of microfinance on land productivity was not found to be statistically significant.

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THE IMPACT OF OWNERSHIP ON THE FINANCIAL PERFORMANCE OF ETHIOPIAN FINANCIAL SECTORS

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ABSTRACT

In 1994, in Ethiopia, privatization has been started in the form of transfer of ownership form public to private enterprises ranging from decreasing political intervention on the operation of enterprises to sale of the enterprises to the private investors. Specifically, the financial sector reform in Ethiopia has been started with the Proclamation Number of 84/1994 that permits private enterprises to invest in financial sector. Consequently, the financial sector is increasing in number and currently (as of 2017) there are 16 private companies, 1 public insurance company, 16 private, and 3 public commercial banks in the country. These privatizations present an opportunity for the investigation of the impact of ownership on firm's performance. This study was conducted on the impact of ownership on the financial performance of Ethiopian financial sector. The data set contains 12 (2005 to 2016) years' data of 18 financial institutions. Return on Assets and Return on Equity are used as proxy of financial performance and dummy variable for ownership is used. Size, Volume of capital, Leverage, and Liquidity are also used as control variables. Ordinary List Square regression has been carried out and the result shows that private financial institutions reported higher Return on Assets and Return on Equity than public institutions, which means the result of this study, confirms Agency theory, property right theory and many empirical studies. The study further revealed that ownership has strong and positive impact on the Ethiopian financial institutions' financial performance. The study suggests that the Ethiopian privatization Agency should consider the performance of public and private financial sector so that the agency can make right decision with respect to privatizing the institutions. The study further suggests that future researchers should conduct research on ownership and profitability of non-financial sectors in Ethiopia.

KEYWORDS

financial institutions of Ethiopia, financial performance, impact of ownership.

1. INTRODUCTION

In Africa, in 1960s and 1970s governments widely involved in the operation of firms believing that the firms' operation should be in line with developmental goal of the states. According to Martin and Charles (1998), the financial reforms of the 1980s and 1990s in Africa strongly argued that development would be better if firms are operating without any government interventions. Africa requires more vigorous private firms, well-developed infrastructure and promoted investments from both local and overseas sectors (John Nellis, 2005) and privatization is the best way to achieve these required conditions. Consequently, from 1991 to 2001, African governments' share of equity declines from 89.1% to 10.3% from the whole sectors and from 86.7% to 8.2% from financial sector after privatization (World Bank, 2002 as sited in John Nellis, 2005) and indicates that there was a remarkable change in ownership from public to private firms in the region.

Similarly, in Ethiopia, privatization was began in 1994 that involves the transfer of ownership form public to private enterprises in the form of sales, lease, management contracts, liquidation, and deregulation with the aim of achieving major, offering competition, enhancing performance of public firms, creating adequate income, and decreasing political involvement on the operation of firms (John Nellis, 2005). More specifically, the financial sector reform in Ethiopia has been started in the year 1994 with the Proclamation Number of 84/1994 that permits private enterprises to invest in financial sector. As a result, financial institutions are increasing in number and currently there are 16 private companies and 1 public insurance company and 17 private and 2 public commercial banks. However, Ethiopian financial sector is not opened to the foreigners to invest with the persistent fear that privatization might eventually lead to uncontrollable takeover of key sectors of the economy (financial institutions) by foreign investors (Eshete Tadesse). These privatizations provide possibility of investigating the impact of ownership on firms' performance in different nations and time.

This research is initiated by the debate on the performance of public and private firms. The property right theory of the firm suggests that public enterprises should perform less efficiently and less profitably than private firms (Anne O. Krueger, 1990 and Kathryn et al, 2001). Anthony et al (1989) found that public firms are less efficient or less profitable compared to private firms as politicians causes public firms to employee excess labor inputs and such firms might be tends to hire politically linked persons rather than those who best qualified to perform anticipated jobs. Despite, public firms may sacrifice maximum profit in the quest of social and political purposes. Hence, public firms are supposed to be less profitable than private firms. However, the relationship between ownership and financial performance of firms is remained controversial. Vickers and George Yarrow (1991) found that agency problems arise in private firms. In most large private firms managers own little of the stock as monitoring managers is costly, a divergence arises between their objectives and those of private shareholders. Private shareholders basically hold a small stake in the firm and it may not pay any shareholder to afford the cost of monitoring management. Yidersal and Wang (2017), Kenenisa and Chawla (2015) also found that privately owned commercial banks are less profitable than public commercial banks in Ethiopia.

There are also other some empirical evidences; Millward and Parker, (1983), Borins and Boothman (1985), and Boyd (1986) that found no difference between the performance of public and private firms. As a result of this controversy, examining the impact of ownership on financial performance of firms is an important financial management studies. Moreover, the issue of ownership is important for the regulators and policy makers (privatization agency) in Ethiopia for making better decision with respect to privatization. Despite, only few empirical studies (Yuvaraj and Abatae, 2013; Demis Hailegebreal, 2016; Daniel Mehari and Tilahun Aemiro, 2013; *Simon Nahusenay Ejigu, 2016)* carried out an examination of firm specific and macroeconomic determinants of profitability of Ethiopian insurance

industry and any of those didn't include ownership as the determinant variable of insurance industry's profitability in Ethiopia. On the other hand, empirical studies of Kokobe Seyoum Alemu and Birhanu Diriba Negasa (2015), Kenenisa Lemie Debela and A.S. Chawla (2015), Yidersal Dagnaw Dinberu and Man Wang (2017) and *Ermias Bogale(2017) investigated the relationship between commercial banks performance and ownership, however none of the above studies consider profitability and ownership of insurance industry in Ethiopia.*

This study is vital since information on the relationship between ownership and firm performance is critical in privatization issues in Ethiopia. Moreover, this study is justified on the grounds: (1) relatively little is known about the relationship between ownership and firm performance in the Ethiopian financial institutions; that is important for policy makers and regulators in relation to privatization by providing information about the relationship between ownership and firm performance; (2) there is no comparative empirical investigation on financial institutions in Ethiopia. As a result, we tried to compare the financial performance of publicly and privately owned financial institutions and (3) the study may contribute to the literature and may provide suggestions for future researchers in investigating the same on other sectors. Accordingly, the purpose of this study is to investigate the impact of ownership on the financial performance of Ethiopian financial institutions bay taking data from the year 2005 to 2016 of 18 financial institutions. The financial institutions include publically and privately owned banks and insurance companies. The study used Return on assets (ROA) and Return on Equity (ROE) as measure of financial performance of the above stated institutions. The explanatory variable of this study is ownership dummy variable based on the purpose of the study. Following several previous empirical studies, size, leverage, liquidity, and volume of capital are considered as control variable to show the clear impact of ownership on financial performance of the aforementioned sectors of Ethiopia. Correlation among variables, Multicolinearity and Heteroskedasticity tests have been carried out and the result of the tests shows that there is no serious autocorrelation, Multicolinearity and Heteroskedasticity problem in this study. OLS regression has been carried out and the result shows that ownership has positive and statistically significant impact on financial performance of Ethiopian financial sector. This study also confirms the property right and agency theories as regression analysis indicates that private financial institutions reported better financial performance compared to its competitors. The rest part of this paper is organized as follows. Part 2 of this study discuss the theoretical and empirical literature related to ownership and firms' financial performance. The 3rd part of the study incorporates the methodology of the study including the definition of variables with its measurements and econometric model. The 4th part of the study presents the profitability of financial institutions of Ethiopia. The 5th and 6th part of this paper presents different diagnostic tests and descriptive statistics. The 7th and 8th part of the study presented the regression result and conclusion of the study respectively.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

In the economics, finance, and management literatures, agency theory embodies a leading theoretical framework for examining the relationship between ownership and performance (Shleifer & Vishny, 1997). This theory climaxes the idea that principals and agents often have conflicting goals and different capabilities to effect corporate behavior and consequences (Milgrom & Roberts, 1992). An important contribution of agency theory is that it promotes an organized approach to the analysis of economic encouragements and the inducements of managers and shareholders (Eisenhardt, 1989). This theory further stated that ownership difference in any kind of firms affects its financial soundness and proposes private firms have been more profitable than public firms. Many previous empirical studies favored the assumption of this theory. Similarly, the property right theory of the firm states that private firms perform better in efficiency and profitability than public firms.

Eric Gedajlovic and Daniel M. Shapiro (2002) investigated the relationship between ownership structure and financial performance of 334 Japanese firms starting from1986 to 1991. The study documented a positive relationship between ownership and Japanese firms' performance leading to a conclusion that agency theory is relevant in Japan. Likewise, Alexander Pivovarsky (2003) investigated the relationship between ownership concentration and performance of 376 partially and fully privatized Ukrainian firms. The result of this study shows that that ownership concentration is positively related with firms' performance and concentration of ownership by foreign companies and banks shows better performance than ownership concentrated by the domestic owners in Ukraine. Again Abdelmohsen and Gehan (2013) explored the relationship between ownership concentration and identity on firm performance using a sample of 99 publicly listed companies on the Egyptian Exchange (EGX) using ROA and ROE as firms' performance measurement. In this study both Ordinary list square and two stages List square (2SLS) regression have been employed and they found that ownership concentration has significant impact on Egyptian firms' performance. The study further investigated the impact of ownership identity on firms' performance and found that the overall ownership identity has a significant influence on firm performance. Moreover, ownership identity and firm performance as proxied by ROA had a significant endogeneity problem so that they are forced to use of 2SLS in their analysis.

Worku Gebeyehu (2000) documented a comparative analysis of private and public enterprises in Ethiopia. In his study, a Cobb-Douglass stochastic frontier production function was used and the result shows Private firms are relatively inefficient with a score of 69%, while public and other private industries scored 75% and 71%, respectively. Similarly, Yidersal Dagnaw Dinberu and Man Wang (2017) also examined the effect of Ownership on the Profitability of Ethiopian Commercial Banks using panel data from 2005 to 2014 of 8 commercial banks. The study used ROE as profitability measurement and the result of the study indicated that privately owned commercial banks are less profitable that public commercial banks in Ethiopia. Kenenisa Lemie Debela and Chawla (2015) investigated the impact of size and ownership on financial performance of commercial banks in Ethiopia. The study carried out Pearson correlation, independent sample t-test and multivariate regression analysis and the study period covers from 2000 to 2013 and the result revealed that ownership has no effect on financial performance of commercial banks in Ethiopia. Similarly, Kokobe Seyoum Alemu, and Birhanu Diriba Negasa (2015) documented determinants of financial Performance of Commercial Banks in Ethiopia by using panel data from the year 2002 to 2013. The study incorporated both internal and external factors of financial performance of banks of Ethiopia and found that ownership status has a positive and significant effect on the financial performance Ethiopian commercial banks; which suggests that private banks perform more efficiently than public banks which are the giant banks in the country due to government monopoly.

It has been argued that the financial performance of any firm is not determined only by ownership; there are a number of firm specific and macro-economic factors that influence firm's financial performance (Ng, 2005; Morck et al., 1988; Demsetz and Lehn, 1985; Yuan et al, 2005; Jaafar et al., 2013 and El-Shawa, 2009). Similarly, Yuan et al. (2005) argued that the influence of ownership on firm's performance could vary across industries due to several industry factors.

Omran et al., (2008) and Lins, (2003) used debt ratio as control variable because the possibility that creditors might be able to minimize managerial agency costs and in the process affect ownership. Park and Jang (2009), who expected a positive relationship between leverage and firm performance, used leverage to control the expected positive relationship on firm performance. Furthermore, Jaafar et al., (2013) used leverage, size, and liquidity as control variable so as to control the expected relationship between ownership concentration and performance of Egyptian listed companies. Kokobe Seyoum Alemu, and Birhanu Diriba Negasa (2015) found that an inverse relationship between bank size and Ethiopian commercial banks performance implying that large commercial banks perform lower than smaller commercial banks. Contrarily, Kenenisa Lemie Debela and A.S. Chawla (2015) found that bank size measured by logarithm of total assets has significant positive impact on commercial banks performance in Ethiopia. More importantly, Yidersal Dagnaw Dinberu and Man Wang (2017) used size, liquidity, and volume of capital as control variable to control the expected relationship of commercial banks performance and their ownership structures and found that size and has statically strong effect on commercial banks profitability. Yuvaraj and Abatae, (2013) investigated the performance of insurance companies in Ethiopia and found that leverage, volume of capital, size, and liquidity are identified as most important determinant factors of profitability. Similarly, Demis Hailegebreal, (2016) carried out an investigation on determinants of profitability of Ethiopian insurance Industry and the result revealed that size of company, leverage ratio and liquidity ratio have strong effect on profitability of Ethiopian insurance industry. *Simon Nahusenay Ejigu, (2016) also conducted research on* Internal Factors that influence Financial Performance Of Insurance Companies In Ethiopia and the study indicated that leverage ratio, liquidity ratio, and company size have an effect whereas age of company has no any effect on financial performance of Ethiopian insurance industry. Depending on these previous studies, this study will use the following variable namely Firm size, financial leverage, Liquidity, and Volume of capital as control variable.

It has been explained in the in finance, economics and strategic management literatures that agency theory is a dominant theory that facilitates structural approaches in studying the relationship between ownership and firms' performance. In this theory, it is assumed that agents be it in private or public organizations are supposed to act in maximizing their own incentives contrary to the principal or owner of the organization. The theory further explains ownership difference in any kind of firms affects its financial soundness and assumes privately owned firms have been more profitable than public owned firms. Based on this theory and

previous empirical studies, we develop the hypothesis that **(H1**) Profitability of private financial institutions is better than profitability of public financial institutions and **(H2)** there is a significant relationship between ownership and firm performance in Ethiopia.

TABLE 1: SUMMARY OF PREVIOUS STUDIES AND THEORIES ON OWNERSHIP AND FIRM PERFORMANCE

Private firms perform better than public firms		Private firms perform less than public firms	No significant difference
Theories	Agency theory and Property right theory		
Empirical studies	Eric Gedajlovic and Daniel M. Shapiro (2002), Eric Gedajlovic and Daniel M. Shapiro (2002), Abdel-mohsen and Gehan (2013), Kokobe Seyoum Alemu, and Birhanu Diriba Negasa (2015)	Yidersal Dagnaw Dinberu and Man Wang (2017), Kenenisa Lemie Debela and A.S. Chawla (2015), Worku Gebeyehu (2000)	Kenenisa Lemie Debela and A.S. Chawla (2015), Millward and Parker, (1983), Borins and Boothman (1985),

3. METHODOLOGY

3.1 SAMPLE AND DATA SOURCES

There are a total of 17 insurance companies in Ethiopia (1 state owned and 16 private companies) and 18 Commercial banks (there were 19 commercial banks in Ethiopia till 2014 and in 2014, Construction and Business bank and Commercial bank of Ethiopia were merged) operating in Ethiopia. Of the total of 35 financial institutions, 16 insurance companies and 17 banks are owned by the private investors whereas 1 insurance company and 2commercial banks are owned by government and no foreign companies are operating in Ethiopia as Ethiopian financial market is not opened to foreign investors. Hence, 9 insurance companies and 9 commercial banks (a total of 18 companies), which are established before 2005 are included in this study. The period of this study is from 2005 to 2016 and hence, the 12 years data was collected from each company's annual report and the data for banks was accessed from Bank scope and from individual banks annual report. As Commercial bank of Ethiopia and Construction and Business bank are merged together in the year 2014, 10 years data for Construction and Business bank was used because has no separate data for the year 2015 and 2016 which reduces the observation from 216 to 214 (it reduces the observation by 2).

3.2 VARIABLES

Dependent variables: As the main purpose of this study is to examine the impact of ownership on financial institutions' performance in Ethiopia, Return on Assets (ROA) and Return on Equity (ROE) are used as a proxy of financial performance of the institutions as they are extensively used in several previous studies.

Explanatory Variables: Ownership has been taken as an explanatory variable determining firms' profitability. The common argument is that efficiency will be less in the public firms, because ownership objectives differ from profit maximization and because monitoring measures are insufficient when compared to privately owned firms, where stockholders hold management responsible for firm performance or soundness. A dummy variable was used to measure this variable such that the public firm is given a value of 0 and private firms are given a value of 1.

Control variables: ownership is not the only variables that determine the profitability of public and private firms whereas there are other many factors that significantly impact firm's performance. The following variables are considered as control (exogenous) variables in this study which are chosen to control factors other than ownership that have impact on profitability based on previous empirical studies of Eric Gedajlovic and Daniel M. Shapiro (2002), Abdelmohsen and Gehan (2013), Yidersal Dagnaw and Man Wang (2017)**,** Ana and Ghiorghe (2014), Kripa and Ajasllari (2016) and Alexander Pivovarsky (2003). Firm size, measured as the natural logarithm of total assets, is included to measure the potential economies of scale and scope ensuing to large firms. Financial leverage that is measured as the ratio of debt to total assets is considered as a control variable because a firm's capital structure may influence its investment decisions and the choice afforded its managers (Harris & Raviv, 1991). Liquidity is another important control variable, which is measured as current asset to current liability of the firm that shows firm's ability to pay its current debt with its current liability. Volume of capital was also included in this study as exogenous variable, which is, measured as Natural logarithm of equity. Table 1 presents the summary and measurements of variables of the study.

TABLE 2: VARIABLES AND MEASUREMENTS

Variables		Proxy	Measurement
Dependent	Return on Assets	ROA	The ratio of net income to total assets
	Return on Equity	ROE	The ratio of net income to total equity
Independent	Ownership	OWN	Dummy (1=private, 0 otherwise)
	Size	SZ	Natural logarithm of total assets
	Leverage	LEV	The ratio of Total liability to total assets
	Liquidity	LQ	The ratio of current assets to total assets
	Volume of Capital	VOL	Natural logarithm of equity

Sources: Empirical studies

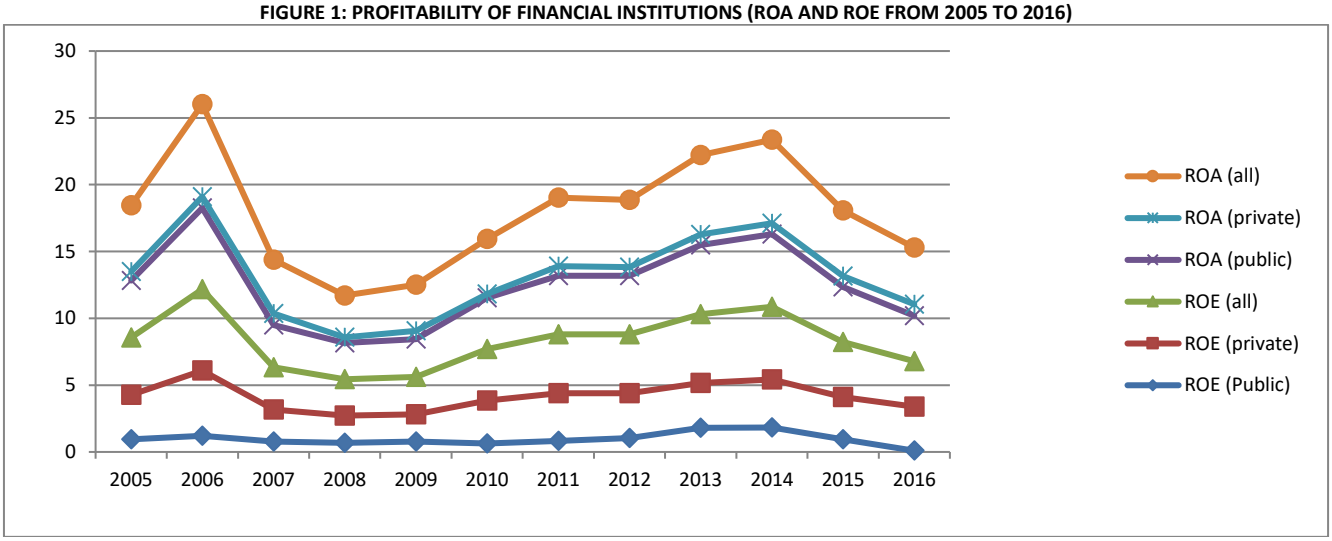
3.3 MODEL SPECIFICATION

The empirical model used to test the impact of ownership on firms' performance is specified as $y = \alpha + \beta_i x_i + \varepsilon$, where y is financial performance proxied as ROA and ROE, β_i is coefficient, x_i is the vector of independent variable (ownership and control variables) and ε is error term. Hence, this model estimates the direct impact of ownership on financial institutions' financial performance holding other variables (control variables) constant.

4. PROFITABILITY OF ETHIOPIAN FINANCIAL INSTITUTION

Figure 1 illustrates the profitability of public and private financial institutions form the year 2005 to 2016. It shows all institutions experienced fluctuation in financial performance over 2005 to 2016. The figure also indicates that the Return from Assets is better than the Return from Equity in the financial institutions during the study period. It has been indicated further that all the financial institutions experienced remarkable fluctuation in ROA during the study period. Relatively, the institutions experienced lower fluctuation in ROE during the period. Figure 1 depicting that private institutions reported better ROA and ROE comparing to Public institutions. The financial performance of public financial institutions turndown from the year 2014 and it is because the two public financial institutions namely Commercial Bank of Ethiopia and Construction and Business bank were merged at the specified year and may incur higher transaction costs. Generally, the figure depicts that private institutions perform better compared to public institutions over 2005 to 2016.

FIGURE 1: PROFITABILITY OF FINANCIAL INSTITUTIONS (ROA AND ROE FROM 2005 TO 2016)



Source: Authors computation based on the Annual reports of the Institutions from 2005 to 2016

5. DESCRIPTIVE STATISTICS

The variables means and standard deviations are presented in table 3. The data set contains 3 public and 15 private financial institutions from the year 2005 to 2014 and 2 public and 15 private institutions form the year 2015 to 2016 (the two public commercial banks were merged in the year 2014). The mean of ROA for public firms is 37.1107139 with standard deviation of 0.2414943 whereas the average ROA of private institutions is 40.168479 with standard deviation of 5.398009, which in turn indicates that private institutions reported 40% and public institutions reported 37% of Return on Assess during the study period.

The average Return on Equity of public institution is 20.43 with standard deviation of 0.43089 and of private sector is 31.26 with standard deviation of 50.308. This indicated that the public institutions reported 20.4% of Return on Equity whereas private institution reported 31.26% of Return on assets. As the standard deviation indicates, the variability of profitability of private financial institutions is higher than the variability of profitability of public financial institutions. Both the average Return of Assets and the average Return on equity of private financial institution is higher than public financial institutions indicating that the private financial institutions of Ethiopia perform better than public financial institutions. On average, the size of public financial institutions (mean of 18.46%) is higher than the private financial institutions (mean of 17.63%) whereas the leverage, liquidity and volume of capital of public financial institutions is lower than private financial institutions.

TABLE 3: DESCRIPTIVE STATISTICS BY OWNERSHIP

	Public	Private
ROA	37.1107139 (0.2414943)	40.168479 (5.398009)
ROE	20.435653 (0.43089)	31.26927 (50.30837)
LEV	10.446016 (0.377132)	30.63234 (149.5312)
LIQ	4.392993 (0.584121)	19.30406 (94.85298)
SZ	18.46369 (3.287589)	17.63552 (3.365803)
VOC	15.41055 (5.251985)	16.02885 (3.993246)

ROA, Return on Assets: ROE, Return on Equity: OWN, Ownership: LEV, leverage: LIQ, liquidity: SZ, size: VOC, Volume of Capital

6. DIAGNOSTIC TESTS

Table 4 presents correlation among variables when two dependent variables which are ROA and ROE are used in the model. Table 4 of column I presents the correlation between variables as ROA is used and column II of table 4 presents the correlation between variables when the model use ROE and in both cases, the correlation between variables is not too high.

TABLE 4: CORRELATION BETWEEN VARIABLES

(I)							(II)						
	ROA	OWN	LV	LIQ	SZ	VOC		ROE	OWN	LV	LIQ	SZ	VOC
ROA	1						ROE	1					
OWN	0.0836	1					OWN	0.0805	1				
LEV	0.0792	0.0841	1				LEV	0.0581	0.0804	1			
LIQ	0.0743	0.0837	0.1993	1			LIQ	0.0576	0.0794	0.6821	1		
SZ	-0.4954	-0.1302	-0.5061	-0.5051	1		SZ	0.1813	-0.0903	0.5201	-0.5015	1	
VOC	-0.0693	0.0319	-0.0787	-0.0786	0.7405	1	VOC	-0.6822	0.0538	-0.1084	-0.1096	0.674	1

ROA, Return on Assets: ROE, Return on Equity: OWN, Ownership: LEV, leverage: LIQ, liquidity: SZ, size: VOC, Volume of Capital

Table 5 presents tests of Multicolinearity and Heteroskedasticity to check whether there exists the problem of multi-colineartiy and Heteroskedasticity or not in the model. Morgan et al, (2004) sated that the variance inflation factor (VIF) above 10 or the tolerance value (1/VIF) below 0.1 is an indication that there exist a multi-collinearty problem among the variables. Collumn I of table 5 shows that there is no VIF greater than 10 and 1/VIF below 0.1; further reveals that there is no a problem of multi-colinearity in the model and hence, all variables can be retained in the model. Column II of table 5 presents Breusch-Pagan / Cook-Weisberg test for heteroskedasticity. Heteroskedasticity can be tested with BreushPagan test showing whether there is inconsistency (Heteroskedasticity) or consistency (homoskedastisty) in the variance of the error terms. The heteroskedasticity problem can be happened if the p-value of the BreushPagan test is below 0.05. However, table 5, column II shows that the p-value of Breusch-Pagan / Cook-Weisberg test is above 0.05 which is 0.342 indicating that the model is free from heteroskedasticity problem.

TABLE 5: MULTICOLINEARITY AND HETEROSKEDASTICITY TESTS

(I)			(II)
Var.	VIF	1/VIF	
LEV	8.51	0.117508	
LIQ	8.36	0.119617	chi2(1) = 0.85
SZ	4.68	0.213686	
VOC	3.54	282847	Prob > chi2 = 0.342
OWN	1.05	0.948761	
Mean VIF	5.228		

ROA, Return on Assets: ROE, Return on Equity: OWN, Ownership: LEV, leverage: LIQ, liquidity: SZ, size: VOC, Volume of Capital

7. RESULT AND DISCUSSION

The result of OLS regression is reported in table 6. The only difference between the two models is that Model I uses ROA whereas Model II uses ROE as dependent variable. The adjusted R-square indicates how well the model variance is explained (Morgan et al (2004). The adjusted R-square nearest to 1 indicates that the model is strongly explained by the variables included in the model. The adjusted R-square of Model I is 96.44% (0.9644) and Model II is 86.72% (0.8672) indicating that the variables included in this study (Ownership, Leverage, Liquidity, Size and Volume of Capital) strongly explained the model developed for this study.

The OLS regression result confirms the expectation of the hypothesis, the agency theory, property right theory and several previous empirical studies. In this study, ownership has positive and significant impact (Ceteris paribus) on the financial performance of Ethiopian financial institutions when it is measured by Return on Assets and Return on Equity. This result is consistent with the previous empirical findings of Eric Gedajlovic and Daniel M. Shapiro (2002), Alexander Pivovarsky (2003), Abdelmohsen and Gehan (2013), Kokobe Seyoum Alemu, and Birhanu Diriba Negasa (2015). We developed the hypothesis that Profitability of private financial institutions is better than profitability of public financial institutions and the result of this study confirm this hypothesis. The coefficient of dummy private is 2.04881 for Model I and 9.68302 for Model II with a p-value of value 0.038 and 0.000 respectively (significant at 1%) indicating that on average, the private financial institutions have reported a Return on Assets of 2% and Return on Equity 9.68% % higher than public financial institutions during the study period. One of the hypotheses developed in this study is that there is a significant relationship between ownership and financial institutions' performance in Ethiopia. And the result of this study confirms that there is statically strong and positive (with p-value of 0.038 when financial performance is measured by ROA) relationship between ownership and financial performance of financial institutions in Ethiopia. The result also exhibit that ownership has a significant and positive impact on the Return on Equity of Ethiopian financial institutions. This result is consistent with agency and property right theory, which postulate that the ownership difference has a strong impact on firm's financial performance. It is also consistent with several previous studies (Eric Gedajlovic and Daniel M. Shapiro, 2002; Alexander Pivovarsky, 2003; Abdelmohsen and Gehan, 2013; Kokobe Seyoum Alemu, and Birhanu Diriba Negasa, 2015)

The OLS regression result also shows the impact of control variables on financial performance of Ethiopian financial institutions. Accordingly, except liquidity, all control variables have strong (at 1% significant level) and positive impact on the profitability of Ethiopian financial institutions when it is measured by ROA and ROE. The reason we use ROE as the second dependent variable in this study is to check whether the relationship between ownership and firm performance is sensitive with the measurement of performance which means we checked the robustness of our finding by replacing ROE instead of ROA. The robustness check shows that whenever ROE is used as a measure of financial performance, there is no difference between the relationship between ownership and financial performance of Ethiopian financial institutions. To be exact, the relationship between ownership, ROA and ROE is positive and statically significant.

TABLE 6: OLS REGRESSION

Model I							Model II						
ROA	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]	ROE	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
OWN	2.04881	0.179879	3.27	0.038*	0.40343	0.305808	OWN	9.68302	5.700523	3.78	0.000*	10.33617	32.81259
LEV	0.023724	0.002493	9.52	0.000*	0.01881	0.028638	LEV	0.164117	0.078992	2.08	0.039*	0.008389	0.319846
LIQ	0.018206	0.00392	0.93	0.321	0.010479	0.025934	LIQ	0.142644	0.124214	1.15	0.252	-0.10224	0.387524
SZ	0.03518	0.041339	-2.54	0.021*	-0.11668	0.046317	SZ	32.60907	1.310075	24.89	0.000*	30.02634	35.1918
VOC	0.027514	0.028672	2.96	0.001*	-0.02901	0.08404	VOC	-32.5417	0.908652	-35.81	0.000*	-34.333	-30.7503
_cons	0.318536	0.4842	0.66	0.511	-0.63603	1.273105	_cons	-60.29	15.3447	-3.93	0.000*	-90.5411	-30.0389
Number of obs = 214							214						
Prob > F= 0.000*							0.000*						
R-squared= 0.9652							0.8704						
Adj R-squared= 0.9644							0.8672						

*significant at 1% significant level, *ROA, Return on Assets: ROE, Return on Equity: OWN, Ownership: LEV, leverage: LIQ, liquidity: SZ, size: VOC, Volume of Capital*

8. CONCLUSION

During the year 1994, in Ethiopia, the issue of privatization has been started in the form of transfer of ownership form public to private enterprises by sales, lease, management contracts, liquidation, and deregulation with the main purpose of achieving major, presenting competition, improving performance of public institutions, generating sufficient revenue, and decreasing political intervention on the operation of enterprises (John Nellis, 2005). Particularly, the financial sector reform in Ethiopia has been started with the Proclamation Number of 84/1994 that permits private enterprises to invest in financial industry. As a result, financial institutions is remarkably increased in number and currently there are 16 private and 1 public insurance companies and 16 private commercial banks and 3 publicly owned banks. However, the Ethiopian financial sector is not opened to the foreigners to invest with the persistent fear that privatization might eventually lead to uncontrollable takeover of key sectors of the economy (financial institutions) by foreign investors (Eshete Tadesse). These privatizations present an opportunity for the investigation of the impact of ownership on firm performance in different nations and different time. This research is motivated by the debate on the impact of ownership on firm performance as it is discussed in the introduction part of the study.

This study was carried out on the impact of ownership on the financial performance of Ethiopian financial sector. The data set contains 12 years data of 18 financial institutions (from 2005 to 2016). ROA and ROE are used as proxy of financial performance and dummy variable for ownership is used. Size, Volume of capital, Leverage, and Liquidity are also used as control variables in this study. Descriptive statistics has been carried out in this study following by different econometric tests such as correlation between variables, Multicollinearty and hetroskedasticiyt tests. The tests show that there is no serious autocorrelation, Multicollinearty and hetroskedasticiyt in this study so that all variables retained in the model of the study. Finally, OLS regression has been carried out in order to show the clear impact of ownership on the financial performance of the institutions and to investigate whether there is a difference on performance of public and private institutions. The regression result shows that private financial institutions reported higher ROA and ROE than public institutions which means the result of this study confirms Agency theory, property right theory and many empirical studies. The study further revealed that ownership has strong and positive impact on the Ethiopian institutions' financial performance.

The study suggests that the Ethiopian privatization Agency should consider the performance of public and private financial sector so that the agency can make right decision respective of privatizing the institutions. The study further suggests that future researchers should conduct research on ownership and profitability of non-financial sectors in Ethiopia.

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IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY OF SELECT TWO AND THREE WHEELER COMPANIES IN INDIA – MULTIPLE REGRESSION ANALYSIS

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ABSTRACT

The question of determination of profit is of great importance because profit is a very important aspect of business. The task of management is the maximization of profits and the efficiency of business is measured by the amount of profit earned. A business is considered to be more efficient only if it earns more profit. The profit of a business may be measured by studying the profitability of investments in it. Profitability is the ability of a given investment to earn a return from its use. This ability is referred to as learning power or operating performance of the concerned investment. Profitability is a relative term and its measurement can be achieved by profit and its relation with the other objects by which the profit is affected. The profitability is the most powerful motivational factor in any business. It is the test of efficiency and the measure of control.

KEYWORDS

working capital management, profitability analysis, two and three wheeler companies in India.

INTRODUCTION

In the conventional production function approach for determination of relationship between output and profit, fixed capital is taken into account as explanatory variable amongst others; the role of working capital is ignored[1]. If a company desires to take a greater risk for bigger profits and losses, it reduces the size of its working capital in relation to its sales. If it is interested in improving its liquidity, it increases the level of its working capital. However, this policy is likely to result in a reduction of the sale volume, therefore of profitability. Hence, a company should choose between liquidity and profitability and decide about its working capital requirements[2]. It is therefore felt that there is the need to study the important role of working capital in profit generating process.

The two important aims of working capital management are short-term solvency and profitability. To ensure solvency, the enterprises should be very liquid. If the enterprises maintain a relative large invest of long-term funds in currents assets, they will not face the risk of cash shortage or stocks-outs. However, there is a cost associated with maintaining a sound liquidity position. A considerable amount of the firm's funds will be tied up in current assets and to the extent, the investment is idle, the firm's profitability will suffer[3]. To have higher profitability, the firms may sacrifice solvency and maintain a relatively low level of current assets. When the firms do so, their profitability will improve as fewer funds are tied up in idle current assets, but their solvency will be threatened[4]. Sakar and Saha have aptly observed that management of working capital has an important bearing on the profitability of an enterprise[5]. Generally, the higher the working capital, the less the rate of return on capital employed while a lower value of working capital yields a higher rate of return[6].

SIGNIFICANCE OF THE STUDY

As such, the study is expected to help the corporate management, the financiers, the investors and the government at large, to take valuable decisions at their own. The study has academic relevance too in so far as new theoretical and practical knowledge would be added to the existing stock of knowledge undoubtedly. The present study will act as a masterpiece on the subject for further research and development. There is no study on working capital management of Two and Three Wheeler Sector after liberalization. Therefore, to cover the gaps in the earlier studies, the present study is undertaken to give an insight into the working capital management of selected Two and Three Wheeler Companies in India. It would also enable shareholders, investors and investment analyst to identify the determinants of corporate performance. Further, it would provide insight to banks, financial institutions and long - term lenders to understand the financial capability and effectiveness of the companies. Moreover, it would open up new vistas to the industry association and the government in understanding the characteristics of the companies for their and intra - firm comparison. It might also help the academic researchers in securities, industry and company by providing different perspective of the analysis.

OBJECTIVES OF THE STUDY

The present study is designed to examine management of working capital in the selected two and three wheeler companies in India. Following are the specific objectives of the study:

1. To assess and comment on the liquidity position of selected units.
2. To assess the impact of working capital ratios on profitability; and
3. To make suggestions for the better working capital management of selected study units.

HYPOTHESIS

H_0: There is no association with profitability and working capital ratios of selected Two and Three Wheeler companies in India.

RESEARCH DESIGN

It is not possible in practice for an individual research worker to approach all the bits and pieces in the universe. Researchers select only a small amount of bits pieces from the universe for the purpose of the study on the basis of stratified sampling. The sample so selected constitutes the sample design for the purpose. A research design is a definite plan for obtaining a sample from a given population. Research design means a sketch or a drawing of a research project's structure. It comprises a series of prior pronouncements that, taken together, provide a roadmap for carrying out a research project. The research design of the present study is outlined hereunder.

SELECTION OF SAMPLE

Keeping in view the scope of the study, it is decided to include all the companies under automobile industry working before or from the year 2005-06 to 2014-15. But, owing to several constraints such as non-availability of financial statements or non-working of a company in a particular year etc., the researcher is compelled to restrict the number of sample companies to nine. Therefore, this study is expost facto based on survey method making a survey of twelve companies in two and three wheeler sector in India.

PERIOD OF STUDY

The period 2005-06 to 2014-15 is selected for this study of Indian automobile industry. This 10 years period is chosen in order to have a fairly long, cyclically well balanced period, for which reasonably homogenous, reliable and upto-date financial data would be available. Further, the span chosen for the study is the period of the beginning of liberalization measures introduced by the Government of India. Hence, the period 2005-06 to 2014-15 is an era of growth of working capital management in the manufacturing sector, particularly automobile industry and has got genuine economic significance of its own.

SOURCE OF DATA

The data used for the present study is secondary data. The major source of data analyzed and interpreted in this study related to all those data which was collected from "PROWESS" database, which is the most reliable on the empowered corporate database of Centre for Monitoring Indian Economy(CMIE). The database provides financial statements, ratio analysis, fund flows, product profiles, returns and risk on the stock market. The Reserve bank of India Bulletin, Business news-papers, Annual survey of industry, CMIE publications, Libraries of various research institutions through internet etc. have also been used as a data source.

DATA EDITING

For this study, major part of data come from secondary sources. Data have been collected in raw form and then it is made suitable for analysis as per the meth-odology defined for the purpose.

DATA ANALYSIS

The financial and statistical analysis approach plays a vital role in the financial environment. To enjoy the benefit of financial and statistical analysis researcher has collected, assembled and correlated the data, classified the data appropriately and condensed them into a related data series; stated the resultant information in a comprehensive form, text, tables and analyzed and interpreted the reported data. The financial and statistical techniques applied in the study are given below. In the course of analysis in this study, use of various accounting and statistical techniques have been made. Accounting technique includes ratio analysis, while among statistical techniques the arithmetic mean (X), co-efficient of variation (CV), test of significance ('t' test), trend indices, simple growth rates, correlation co-efficient (*r*), co-efficient of determination (R^2) and linear regression equations have been applied through EXCEL, SX and SPSS statistical software's. In addition, multiple regressions and multiple correlation analysis were also applied using financial ratio as variables.

REVIEW OF LITERATURE

Ahmadi Mosa et.al., (2012)[1], examine the relationship between working capital management and profitability in 33 companies of food industry group member at Tehran stock Exchange for the period from 2006 to 2011, and the effects of various variables of working capital management including average accounts collection cycle, inventory turnover, medium term debt payment and the cash conversion cycle on operational net profit of the companies. The findings of the research proved that managers can create a positive value for stock holders by decreasing collection cycle, debt payment period, inventory turnover, and cash conversion cycle to the lowest possible level.

Quayyaum Sayeda Tahmina (2012)[2], tries to investigate if there is any relationship between working capital management and profitability in manufacturing corporations. For this study corporations enlisted with the Dhaka Stock Exchange were selected covering the period between 2005 and 2009. The purpose of the study is to examine whether there is statistically significant relationship between the profitability and working capital management and also help to explain the necessity of firms optimizing the level of working capital management efficiency and in that way management taking productive actions to maximize their profit-ability. It is proved that except for food industry all other selected industries have a significant level of relationship between profitability indices and various working capital components. This paper also shows that the significant level of relationship varies from industry to industry.

Banos-Caballero Sonia, et.al., (2012)[3], present the relationship between working capital management and profitability for Spanish small and medium size enter-prises (SMEs) by controlling for unobservable heterogeneity and possible endogeneity. For the purpose of this study, standard working capital ratios were used to measure the effectiveness of working capital in the selected firms. This paper offers new evidence on the relationship between working capital management and profitability by controlling for unobservable heterogeneity and possible endogeneity and, unlike previous studies, given the competing hypotheses of effect of an increase in working capital on firm‟s profitability, it analyses a possible quadratic relation between these variables. At the end it has been observed that most SMEs do not care about their working capital position, most have only little regard for their working capital position and most do not even have standard credit policy. Many do not care about their financial position, they only run business, and they mostly focus on cash receipt and what their bank account position.

Akino Olayinka Olufisayo (2012)[4], carries out a detailed study of the determinants of working capital requirements – both internal and external of 66 firms in Nigeria. The study covers the period from 1997 to 2007. On the basis of the results it was found that sales growth, firm‟s operating cycle, economic activity, size and permanent working capital are the firms‟ specific characteristics that positively drive working capital policy. Leverage, however, is inversely related to working capital requirements. The results conclude that traditional valuation methods used to quantify the efficiency of corporate working capital policy may be suspect as increased investments in operating working capital may be necessitated by increase in business uncertainties.

Bei Zhao and Wijewardana (2012)[5], examine the working capital policy (WCP) practices in Srilankan context. They utilize multiple regression analysis (MRA) to empirically formulate the industries best practices limit and measure firm efficiency as the detachment from that limit. The objective of the study was to pursue additional research rather than to reveal all the factors associated with WCP in the Srilankan context. The authors believe that the resource constraint may be a major barrier to utilization of working capital MCM by firms. Firms may invest resources into managing a particular area of working capital where they are per-forming badly because the returns from controlling the problem area are perceived to be high. If the direction of working capital management (WCM) is not understood, the investment of more resource into an area leads to worse performance.

Nakamura Palombini Nathalle Vicente (2012)[6], focus on the key factors of working capital management by exploring the internal variables of a number of com-panies. 2976 Brazilian Public Companies data from 2001 to 2008 were used for the study. And it was found that debt level, size in growth rate could affect the working capital management of the companies. The study aimed at contributing to the understanding of the short term financial decisions by investigating the key factors of working capital management. At the end of the study, it was found that companies with a high level of working capital were consistent with previous studies (CHIOU, CHENG and WU, 2006; NAZIR and AFZA, 2008). These findings corroborate the Pecking Order Theory and suggest that as companies increase their financial leverage, they tend to assume a more restrictive policy in working capital management in order to prevent capital consumption in accounts receivable and inventory and to avoid issuing new bonds and shares.

Ding Sai et.al., (2012)[7], have used a panel of over 1,16,000 Chinese firms of different ownership types over the period 2000 to 2007 to analyze the linkages between investment in fixed and working capital and financing constraints. It was observed that those firms characterized by high working capital, display high sensitivities of investment in working capital to cash flow and low sensitivities of investment in fixed capital to cash flow**.** Further the authors constructed and analyzed firm level FKS and WKS measures and it was found that despite severe external financing constraints, those firms with low FKS and high WKS exhibited the highest fixed investment rates. It is thereby concluded that an active management of working capital may help firms to alleviate the effects of financing constraints on fixed investment.

Samson Adediran et.al., (2012)[8], hope to empirically investigate the impact of working capital management on the profitability of a sample of 30 SME‟s of Nigeria during 2009. In conclusion, the writer points out that, managers can create value by reducing their firm‟s number of day's accounts receivable and inventories. At the same time, the firm‟s profitability could also be improved by reducing the cash conversion cycle.

Ching Novazzi and Gerab (2012)[9], Conducted a study to find out the relationship between WCM and profitability in Brazilian listed companies. The objectives of their study were to investigate if there was any difference between corporate profitability and WCM in two separate group of companies: working capital intensive

and fixed capital intensive and to identify the variables that most effect profitability. They have measured profitability in different ways: return on sales (ROS), return on asset (ROA), return on equity (ROE). The independent variables used are cash conversion efficiency, debt ratio, days of working capital, days receivables and days inventory. Multiple linear regression used in their study identified that there exist negative relationship between cash conversion cycle (equal to days of working capital), debt ratio and profitability.

Akoto Richar et.al., (2013)[10],closely study the relationship between working capital management policies and profitability of the thirteen listed manufacturing firms in Ghana. At the end of the study, a significantly negative relationship between profitability and accounts receivable days is found to exist. Profitability is significantly positively influenced by the firms cash conversion cycle (CCC), current assets ratio and current asset turnover. It is also suggested that managers can create value for the shareholders by creating incentives to reduce their accounts receivable to 30 days.

DATA ANALYSIS AND INTERPRETATION

INTER – RELATIONSHIPS BETWEEN THE VARIABLES

For the purposes of examining the relationship between working capital ratios and profitability ratio, Karl Pearson's correlation co-efficient can be applied. It implies the interdependence of the set of variables upon each other in such a way that changes in the other. In this section, in order to identify the working capital influence on profitability, a linear multiple regression models were used. In the analysis, working capital ratios, viz., CR, LR, WTR, ITR, RTR and CTR are taken as the independent variables and Profit before Tax (PBT) to total assets ratio is used as dependent variable.

The regression model used in this analysis is here under.

$PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR + b_4 ITR + b_5 RTR + b_6 CTR$

Where

b_0, b_1, b_2, b_3, b_4, b_5 and b_6 are the parameters of the profitability to be estimated.

CR = Current Ratio
LR = Liquid Ratio
WTR = Working capital turnover ratio
ITR = Inventory turnover ratio
RTR = Receivables turnover ratio and
CTR = Cash turnover ratio

ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY

TOTAL INDUSTRY

In order to understand the influence of working capital ratios on profitability, a linear multiple regression model was used. In table 1, multiple correlation and multiple regression techniques have been applied and the impact of working capital ratios on profitability, the regression co-efficient have been found using 't' test. In this chapter, current ratio, liquid ratio, working capital turnover ratio, inventory turnover ratio, receivables turnover ratio and cash turnover ratio have been taken as the explanatory variables and profit before tax (PBT) to total assets ratio has been used as the dependant variable.

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the Total industry are presented in table 1. For one unit increase in current ratio, profitability increased by 0.341 units which was statistically significant at 5 per cent level. When the liquid ratio increased by one unit, profitability decreased by 0.334 units which was statistically significant at 1 percent level. When the working capital turnover ratio increased by one unit, profitability increased by 0.001 units which was also statistically insignificant. For a one unit increase in inventory turnover ratio, profitability increased by 0.016 units which was statistically significant at 5 per cent level. When the receivable turnover ratio increased by one unit, profitability increased by 0.001 unit which was not statistically significant. For a one unit increase in cash turnover ratio, profitability increased by 0.001 units which was not statistically significant. These six independent variables contribute to 89 percent of the variations in the profitability of the Indian two and three-wheeler companies.

ATUL AUTO LIMITED

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the Atul Auto Limited are presented in table 2. For one unit increase in current ratio, profitability increased by 1.070 units which was not statistically significant. When the liquid ratio increased by one unit, profitability increased by 0.001 units which was statistically significant at 5 per cent level. When the working capital turnover ratio increased by one unit, profitability increased by 0.002 units which was also not statistically significant. For a one unit increase in inventory turnover ratio, profitability decreased by 0.013 units which was statistically significant at 1 percent level. When the receivables turnover ratio increased by one unit, profitability increased by 0.007 units which was not statistically significant. For a one unit increase in cash turnover ratio, profitability decreased by 0.024 units which was statistically significant at 1 percent level. These six independent variables contribute to 96 percent of the variations in the profitability of the Atul Auto Limited. Thus, the co-efficient of LR, ITR and CTR are statistically significant.

BAJAJ AUTO LIMITED

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the Bajaj Auto Limited are presented in table 3. For one unit increase in current ratio, profitability decreased by 0.012 units which was statistically significant at 1 percent level. When the liquid ratio increased by one unit, profitability increased by 0.027 units which was not statistically significant. When the working capital turnover ratio increased by one unit, profitability decreased by 0.005 units which was also statistically significant at 10 per cent level. For a one unit increase in inventory turnover ratio, profitability increased by 0.001 units which was not statistically significant. When the receivables turnover ratio increased by one unit, profitability increased by 0.005 units which was not statistically significant. For a one unit increase in cash turnover ratio, profitability increased by 0.001 units which was statistically significant at 5 per cent level. These six independent variables contribute to 97 percent of the variations in the profitability of the Bajaj Auto Limited.

HERO MOTO CORP LIMITED

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the Hero Moto Corp Limited are presented in table 4. For one unit increase in current ratio, profitability decreased by 0.009 units which was not statistically significant. When the liquid ratio increased by one unit, profitability increased by 0.005 units which was statistically significant at 10 per cent level. When the working capital turnover ratio increased by one unit, profitability increased by 0.002 units which was also not statistically significant. For a one unit increase in inventory turnover ratio, profitability decreased by 0.011 units which was statistically significant at 10 per cent level. When the receivables turnover ratio increased by one unit, profitability increased by 0.001 units which was not statistically significant. For a one unit increase in cash turnover ratio, profitability decreased by 0.112 units which was not statistically significant. These six independent variables contribute to 78 percent of the variations in the profitability of the Hero Moto Corp Limited. Thus, the co-efficient of LR and ITR are statistically significant.

KINETIC ENGINEERING LIMITED

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the Kinetic Engineering Limited are presented in table 5. For one unit increase in current ratio, profitability increased by 0.095 units which was not statistically significant. When the liquid ratio increased by one unit, profitability increased by 0.142 units which was not statistically significant. When the working capital turnover ratio increased by one unit, profitability decreased by 0.003 units which was statistically significant 5 per cent level. For a one unit increase in inventory turnover ratio, profitability decreased by 0.107 units which was statistically significant at 5 per cent level. When the receivables turnover ratio increased by one unit, profitability increased by 0.224 units which was not statistically significant. For a one unit increase in cash turnover ratio, profitability increased by 0.003 units which was statistically significant at 10 per cent level. These six independent variables contribute to 75 percent of the variations in the profitability of the Kinetic Engineering Limited. Thus, the co-efficient of WTR, ITR and CTR are statistically significant.

LML LIMITED

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the LML Limited are presented in table 6. For one unit increase in current ratio, profitability decreased by 0.388 units which was not statistically significant. When the liquid ratio increased by one unit, profitability

increased by 2.962 units which was not statistically significant. When the working capital turnover ratio increased by one unit, profitability decreased by 0.031 units which was statistically significant 5 per cent level. For a one unit increase in inventory turnover ratio, profitability decreased by 0.149 units which was statistically significant at 5 per cent level. When the receivables turnover ratio increased by one unit, profitability increased by 0.001 units which was not statistically significant. For a one unit increase in cash turnover ratio, profitability decreased by 0.004 units which was not statistically significant. These six independent variables contribute to 69 percent of the variations in the profitability of the LML Limited. Thus, the co-efficient of WTR and ITR are statistically significant.

MAHARASHTRA SCOOTERS LIMITED

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the Maharashtra Scooters Limited are presented in table 7. For one unit increase in current ratio, profitability increased by 0.072 units which was not statistically significant. When the liquid ratio increased by one unit, profitability decreased by -0.083 units which was statistically significant at 5 per cent level. When the working capital turnover ratio increased by one unit, profitability increased by 0.001 units which was also not statistically significant. For a one unit increase in inventory turnover ratio, profitability increased by 0.007 units which was statistically significant at 1 per cent level. When the receivables turnover ratio increased by one unit, profitability increased by 0.001 units which was not statistically significant. For a one unit increase in cash turnover ratio, profitability increased by 0.003 units which was statistically significant at 1 per cent level. These six independent variables contribute to 74 percent of the variations in the profitability of the Maharashtra Scooters Limited. Thus, the co-efficients of LR, ITR and CTR are statistically significant.

MAJESTIC AUTO LIMITED

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the Majestic Auto Limited are presented in table 8. For one unit increase in current ratio, profitability increased by 0.064 units which was statistically significant at 1 per cent level. When the liquid ratio increased by one unit, profitability decreased by 0.158 units which was not statistically significant. When the working capital turnover ratio increased by one unit, profitability decreased by 0.003 units which was also statistically significant at 5 per cent level. For a one unit increase in inventory turnover ratio, profitability increased by 0.003 units which was not statistically significant. When the receivables turnover ratio increased by one unit, profitability increased by 0.001 units which was not statistically significant. For a one unit increase in cash turnover ratio, profitability increased by 0.014 units which was statistically significant at 5 per cent level. These six independent variables contribute to 84 percent of the variations in the profitability of the Majestic Auto Limited.

SCOOTERS INDIA LIMITED

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the Scooters India Limited are presented in table 9. For one unit increase in current ratio, profitability increased by 0.084 units which was not statistically significant. When the liquid ratio increased by one unit, profitability increased by 0.073 units which was statistically insignificant. When the working capital turnover ratio increased by one unit, profitability decreased by 0.005 units which was also statistically significant at 1 per cent level. For a one unit increase in inventory turnover ratio, profitability increased by 0.050 units which was statistically significant at 5 per cent level. When the receivables turnover ratio increased by one unit, profitability increased by 0.001 units which was not statistically significant. For a one unit increase in cash turnover ratio, profitability increased by 0.004 units which was statistically significant at 5 per cent level. These six independent variables contribute to 99 percent of the variations in the profitability of the Scooters India Limited. Thus, the co-efficient of WTR, ITR and CTR are statistically significant.

TVS MOTOR COMPANY LIMITED

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the TVS Motor Company Limited are presented in table 10. For one unit increase in current ratio, profitability decreased by 0.071 units which was not statistically significant. When the liquid ratio increased by one unit, profitability decreased by 0.193 units which was not statistically significant. When the working capital turnover ratio increased by one unit, profitability decreased by 0.004 units which was statistically significant 5 per cent level. For a one unit increase in inventory turnover ratio, profitability increased by 0.012 units which was statistically significant at 5 per cent level. When the receivables turnover ratio increased by one unit, profitability increased by 0.001 units which was not statistically significant. For a one unit increase in cash turnover ratio, profitability decreased by 0.004 units which was statistically insignificant. These six independent variables contribute to 91 percent of the variations in the profitability of the TVS Motor Company Limited. Thus, the co-efficients of WTR and ITR are statistically significant.

FINDINGS

These six independent variables contribute to 96 percent of the variations in the profitability of the Atul Auto Limited. Thus, the co-efficient of LR, ITR and CTR are statistically significant,

These six independent variables contribute to 97 percent of the variations in the profitability of the Bajaj Auto Limited.

These six independent variables contribute to 78 percent of the variations in the profitability of the Hero Moto Corp Limited. Thus, the co-efficient of LR and ITR are statistically significant.

These six independent variables contribute to 75 percent of the variations in the profitability of the Kinetic Engineering Limited. Thus, the co-efficient of WTR, ITR and CTR are statistically significant.

These six independent variables contribute to 69 percent of the variations in the profitability of the LML Limited. Thus, the co-efficient of WTR and ITR are statistically significant.

These six independent variables contribute to 84 percent of the variations in the profitability of the Majestic Auto Limited.

These six independent variables contribute to 99 percent of the variations in the profitability of the Scooters India Limited. Thus, the co-efficients of WTR, ITR and CTR are statistically significant.

These six independent variables contribute to 91 percent of the variations in the profitability of the TVS Motor Company Limited. Thus, the co-efficients of WTR and ITR are statistically significant.

RECOMMENDATION AND CONCLUSION

In two and three wheeler sector, the new units will have to be set up based on internationally competitive technology, apart from upgrading and modernization of the existing units. The profitability of the two and three wheeler sector companies improved during the last five years mainly due to higher production as well as sales of saleable vehicles, coupled with improvement in product-mix, productivity and techno economic parameters as well as higher sales realization, in spite of increase in costs and travel freight on inputs. The overall results of the model showing impact of working capital on profitability are encouraging.

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ANNEXURE

TABLE 1: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY (TOTAL INDUSTRY)

($PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR + b_4 ITR + b_5 RTR + b_6 CTR$)

Variables	Beta Co-efficient	t-value
Constant	-0.273	
Current ratio	0.341	3.214**
Liquid ratio	-0.334	-4.274*
Working capital turnover ratio (WTR)	0.001	-2.070
Inventory turnover ratio (ITR)	0.016	3.009**
Receivable turnover ratio (RTR)	0.001	0.273
Cash turnover ratio (CTR)	0.001	2.289
$R^2 = 0.893$		
Adj $R^2 = 0.679$		

*Significant at 0.01 level
**Significant at 0.05 level

Source: Computed from the annual reports of the respective units

TABLE 2: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY (ATUL AUTO LIMITED)

($PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR + b_4 ITR + b_5 RTR + b_6 CTR$)

Variables	Beta Co-efficient	t-value
Constant	-1.216	
Current ratio	1.070	2.118
Liquid ratio	0.001	0.003**
Working capital turnover ratio (WTR)	0.002	1.963
Inventory turnover ratio (ITR)	-0.013	-1.182*
Receivable turnover ratio (RTR)	0.007	2.240
Cash turnover ratio (CTR)	-0.024	-1.236*
$R^2 = 0.961$		
Adj $R^2 = 0.882$		

*Significant at 0.01 level
**Significant at 0.05 level

Source: Computed from the annual reports of the respective units

TABLE 3: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILIT (BAJAJ AUTO LIMITED)

($PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR + b_4 ITR + b_5 RTR + b_6 CTR$)

Variables	Beta Co-efficient	t-value
Constant	0.015	
Current ratio	-0.012	-3.920*
Liquid ratio	0.027	4.649
Working capital turnover ratio (WTR)	0.005	2.826***
Inventory turnover ratio (ITR)	0.001	-2.000
Receivable turnover ratio (RTR)	0.005	-1.440
Cash turnover ratio (CTR)	0.001	-3.241**
$R^2 = 0.969$		
Adj $R^2 = 0.907$		

Source: Computed from the annual reports of the respective units

*Significant at 0.01 level
**Significant at 0.05 level
***Significant at 0.10 level

TABLE 4: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY (HERO MOTO CORP LIMITED)

($PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR + b_4 ITR + b_5 RTR + b_6 CTR$)

Variables	Beta Co-efficient	t-value
Constant	-0.180	
Current ratio	-0.009	-0.043
Liquid ratio	0.005	-0.035***
Working capital turnover ratio (WTR)	0.002	-0.471
Inventory turnover ratio (ITR)	0.011	1.041***
Receivable turnover ratio (RTR)	0.001	0.461
Cash turnover ratio (CTR)	-0.112	0.401
$R^2 = 0.782$		
Adj $R^2 = 0.713$		

***Significant at 0.10 level

Source: Computed from the annual reports of the respective units

TABLE 5: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY (KINETIC ENGINEERING LIMITED)

($PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR + b_4 ITR + b_5 RTR + b_6 CTR$)

Variables	Beta Co-efficient	t-value
Constant	-0.491	
Current ratio	0.095	0.809
Liquid ratio	0.142	0.947
Working capital turnover ratio (WTR)	-0.003	-0.905**
Inventory turnover ratio (ITR)	-0.107	-0.788**
Receivable turnover ratio (RTR)	0.224	0.993
Cash turnover ratio (CTR)	0.003	0.279***
$R^2 = 0.751$		
Adj $R^2 = 0.724$		

**Significant at 0.05 level
***Significant at 0.10 level

Source: Computed from the annual reports of the respective units

TABLE 6: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY (LML LIMITED)

($PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR + b_4 ITR + b_5 RTR + b_6 CTR$)

Variables	Beta Co-efficient	t-value
Constant	0.027	
Current ratio	-0.388	-1.129
Liquid ratio	2.962	0.720
Working capital turnover ratio (WTR)	-0.031	-0.432**
Inventory turnover ratio (ITR)	-0.149	-2.066**
Receivable turnover ratio (RTR)	0.001	0.719
Cash turnover ratio (CTR)	-0.004	-0.918
$R^2 = 0.691$		
Adj $R^2 = 0.632$		

**Significant at 0.05 level

Source: Computed from the annual reports of the respective units

TABLE 7: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY (MAHARASHTRA SCOOTERS LIMITED)

($PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR + b_4 ITR + b_5 RTR + b_6 CTR$)

Variables	Beta Co-efficient	t-value
Constant	0.025	
Current ratio	0.072	0.494
Liquid ratio	-0.083	-0.439**
Working capital turnover ratio (WTR)	0.001	0.462
Inventory turnover ratio (ITR)	0.007	0.701*
Receivable turnover ratio (RTR)	0.001	-0.110
Cash turnover ratio (CTR)	0.003	-0.264*
$R^2 = 0.736$		
Adj $R^2 = 0.684$		

*Significant at 0.01 level
**Significant at 0.05 level

Source: Computed from the annual reports of the respective units

TABLE 8: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY (MAJESTIC AUTO LIMITED)

($PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR + b_4 ITR + b_5 RTR + b_6 CTR$)

Variables	Beta Co-efficient	t-value
Constant	0.105	
Current ratio	0.064	0.676*
Liquid ratio	-0.158	-1.135
Working capital turnover ratio (WTR)	-0.003	-1.825**
Inventory turnover ratio (ITR)	0.003	0.283
Receivable turnover ratio (RTR)	0.001	0.054
Cash turnover ratio (CTR)	0.014	2.104**
$R^2 = 0.835$		
Adj $R^2 = 0.796$		

*Significant at 0.01 level
**Significant at 0.05 level

Source: Computed from the annual reports of the respective units

TABLE 9: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY (SCOOTERS INDIA LIMITED)

($PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR + b_4 ITR + b_5 RTR + b_6 CTR$)

Variables	Beta Co-efficient	t-value
Constant	-0.624	
Current ratio	0.084	1.775
Liquid ratio	0.073	1.214
Working capital turnover ratio (WTR)	-0.005	-6.438*
Inventory turnover ratio (ITR)	0.050	2.496**
Receivable turnover ratio (RTR)	0.001	2.158
Cash turnover ratio (CTR)	0.004	2.484**
$R^2 = 0.994$		
Adj $R^2 = 0.982$		

*Significant at 0.01 level
**Significant at 0.05 level

Source: Computed from the annual reports of the respective units

TABLE 10: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY (TVS MOTOR COMPANY LIMITED)

($PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR + b_4 ITR + b_5 RTR + b_6 CTR$)

Variables	Beta Co-efficient	t-value
Constant	0.006	
Current ratio	-0.071	-0.604
Liquid ratio	-0.193	-1.881
Working capital turnover ratio (WTR)	-0.004	-0.471**
Inventory turnover ratio (ITR)	0.012	3.088**
Receivable turnover ratio (RTR)	0.001	0.822
Cash turnover ratio (CTR)	-0.004	-0.448
$R^2 = 0.910$		
Adj $R^2 = 0.731$		

**Significant at 0.05 level

Source: Computed from the annual reports of the respective units

BASIC PROBLEMS OF FOREST SECTOR AND MANAGEMENT PRACTICES IN SUSTAINABLE AGRICULTURE DEVELOPMENT IN INDIA

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ABSTRACT

This paper evaluates the effect of deforestation and climate change the management practices on sustainable agriculture development in India (described in terms of the deforestation and rainfall/agriculture production) on forest cover and vegetation in India. In this study is used to evaluate their relationship between the forest area ratio and production of agriculture. India, the seventh largest country, covers about 2.4 percent of total global land about 1 percent forest area and about 0.5 percent pasture land of the world, but supports about 17.5 percent of human and about 15 percent of cattle population, 1.2 percent of wealth of the world, and this population is always in the process of increase. India is one of the 12-mega diversity countries commanding 7 percent of world biodiversity and supports 16 major forest types. But nearly half of the country's area is degraded, affected with the problems of soil degradation and erosion. India has agriculture dominant economy, about 43 percent of land is under agriculture but the productivity is far below in comparison with developed countries because only one third of cultivated areas in the country are under irrigation. About 23 percent of land area is forest lands having productivity less than one cubic metre per hectare per year against the potential of eight to ten cubic metres per hectare per year. The present low productivity is due to growing biotic pressure and inadequate resources for scientific forest management. Nearly 4.6 percent area, are cultivable waste and 7.1 percent fallow land available for tree planting and pasture development, more than half (about 53 percent) of country's lands are under various types of land degradation. About 146 million ha area is affected with wind and water erosion and 7 million Ha, has become degraded due to excessive salts. 8.5 million Ha, is under water logging and about 10 million ha is affected with shifting cultivation. Nearly 23 percent (76 million Ha.) of country's land has been recorded as forests but only 19.5 percent (64 million Ha.) of total area has forest or tree cover which is much less to the goal of 33 percent set by the National Forest Policy, 1988. About 65 percent of forest cover has dense forest with crown density more than 40 percent and rest 35 percent are badly degraded. The crown density of dense forests is continuously depleting due to overuse of forest resources by the people and their cattle living in and around the forests, those have been depending on forest from the past. Between 1880 and 2013, India lost about 40 percent of its forest cover. Present, 24 percent of its area is under forests or 7 lakh sq km, according to government data. The area under forest and tree cover has grown by 5,081 sq km between 2013 and 2015 in India.

KEYWORDS

problems of forest sector, agriculture development in India.

INTRODUCTION

You have to decide whether development means affluence or whether development means peace, prosperity and happiness.

- Sunderlal Bahuguna

Forests are the world's air-conditioning system the lungs of the planet. Forests occupy an important place among the natural resources of a country. However, forests are neither abundant nor very rich in their products. In India presently forests occupy an area of about 6.96 crore hectors which is 22.8 percent of the total reporting area. The national forests policy resolution of the Government of India 1952 had recommended that the country should aim at maintain one – third of total geographical area under forests. Since 1950-51 due to increase population and consequent upon heavy pressure on forestland about 47 lakhs hectors of forest has been lost to agriculture river valley projects, industrial estates, and other uses. However, since the enactment of the forest (conservation) Act, 1980 the rate of diversion has been brought down to about 16,500 hectors per year, as against 1.5 lakh hectors during the period 1950-51 to 1979-80. The northwestern part of the country barely 11 percent of the area is under forests. In contrast, in the central region about 44 percent land is covered with forests. The Himalayas and the tarai regions contain about 20 percent of the forests while over 75 percent of the forests are located in the peninsular India. The genetic plain has even less than 5 percent of the forests. More over the productivity of our forests is only 1.34 cubic meters per hectors per year against the world average of 2.1 percent cubic meters per hectors per year. While 78 percent of the forest area is subject to heavy grazing and other unregulated uses, adversely affecting productivity and regeneration, nearly 10 million hectors of forests area is subjected to shifting cultivation. Between 1880 and 2013, India lost about 40 percent of its forest cover. Today, 24 percent of its area is under forests or 7-lakh sq km, according to government data. The area under forest and tree cover has grown by 5,081 sq km between 2013 and 2015. India is a large developing country known for its diverse forest ecosystems and mega biodiversity. It ranks 10th amongst the most forested nations of the world with 23.4 percent (76.87 million ha) of its geographical area under forest and tree cover (FSI, 2008). With nearly 173,000 villages classified as forest fringe villages, there is obviously a large dependence of communities on forest resources. Thus, it is very important to assess the likely impacts of projected climate change on forests, to develop and implement adaptation strategies both for biodiversity conservation and protection and for safeguarding the livelihoods of forest dependent people, and to ensure production of round wood for industrial and commercial needs.

Forests provide a wide range of goods and services. Goods include timber, fuel wood, as well as food products (berries, mushrooms, etc.) and fodder. As regards important services, forests and trees play a role in the conservation of ecosystems, in maintaining quality of water, and in preventing or reducing the severity of floods, avalanches, erosion, and drought. Forests provide a wide range of economic and social benefits, such as employment, forest products, and protection of sites of cultural value. Forests, like other ecosystems, are affected by climate change. The impacts due to climate change may be negative in some areas, and positive in others. However, forests also influence climate and the climate change process rainfall, agriculture crop, mainly by effecting the changes in the quantum of carbon dioxide in the atmosphere. They absorb CO2 from atmosphere, and store carbon in wood, leaves, litter, roots and soil by acting as carbon sinks. Carbon is released back into the atmosphere when forests are cleared or burned. Forests by acting as sinks are considered to moderate the global climate. Annual addition of 6 mt of biomass due to operationalization of the Mission will increase the annual emissions removal capability of the forests from 4.87 percent to 5.18 percent of the corresponding projected emissions in 2020. Even if half (3 mt) of the annual biomass increment (6 mt) is removed annually on a sustainable basis from 2025 onwards, the emission removal capability of forestry sector would still be able to offset every year 5.02 percent of the 2020 level emissions.

BACKGROUND OF THE STUDY

The forest sector sustains the livelihoods of millions of smallholders families and is at the centre of national policies to alleviate rural poverty. However, this need for land agriculture is also the main driver of deforestation and land degradation. A major challenge is how to encourage pro-poor agriculture development while mitigating deforestation and associated greenhouse gas emissions. There continues to be a lack of depth of understanding of the relationship between the forest and agriculture sectors, which can and has led to erroneous or partial solutions. Both Goals 14 and 15 of the proposed Sustainable Development Goals (SDGs) contain within them a hint at a strategy that India is familiar with, for conserving biodiversity. Simply put, this is a strategy that is pursued through the creation, expansion and consolidation of a protected areas network that has resulted in remarkable achievements of conserving species as well as ecosystems in India. Although the protected areas network is a remarkable achievement for a poor country like India that has many other competing and urgent priorities, additional

efforts need to be made to expand the network in order to conform to not only SDGs but also terms agreed upon under the convention on biological diversity. Don't let them wild life be a history, pollution if you don't kill it, it will kill you and take care of the trees, and they will take care of you.

OBJECTIVES OF THE STUDY

1. To study the impact of deforestation on the agriculture production in India. And the basic problems of the forest and the management practices of sustainable agriculture sector in India.
2. To analyze the relationship between the forests and sustainable agriculture development in India, to assess the level of agricultural development.
3. To discuss the need and importance of the sustainable agriculture development in India, and its impact.
4. To suggest improve the forests and development of sustainable agriculture sector in India.

METHODOLOGY OF THE STUDY

The present study is based on the secondary data, which data collected from various books, journals, magazines, publications, articles, newspapers, government web sites, etc. This study focused on the basic problems of forest sector and management practices in sustainable agriculture development in India. And what about the importance of forest area ratio and relationship between the forest area ratio and agriculture production.

SCOPE OF THE STUDY

The study is concentrated on the relationship between forests and sustainable development of agriculture sector in India with a interlink between the forest area ratio – rainfall – balanced climate - agriculture production in India. Every part of the world is green, if every heart of human is green.

LIMITATION OF THE STUDY

This study must be interpreted as a foundational exercise in the forests area in India and sustainable agriculture development in India through the forest area. The estimates provided are conservative and minimalist, it is hoped that further studies will build on the methodologies presented here to provide more precise estimates. The study does not account for all possible development pathways that India can choose. India may explore alternative strategies in different sectors like agriculture, industries and services, in accordance to the need, availability, resources, expertise, and political will of the Indian Government. This may impact on the agriculture production in India. It is hoped that further research will provide these crucial analyses**.**

NEED FOR SUSTAINABLE AGRICULTURE IN INDIA

The management practices for sustainable agriculture virtually differ from those of modern agriculture. The important steps to sustainable agriculture are conservation of crop diversity, conservation of tillage, watershed management, efficient water management, integrated nutrition management, integrated weed management, integrated pest management, and crop diversification. Generally the management practices in sustainable agriculture are aimed at achieving sustainable production with limited or no chemical inputs with priority to farm grown inputs without pollution and minimum damage to natural resources, including soil, wildlife, forests, crops, fish, livestock, plant, genetic resources and ecosystems without degradation and to provide food, livelihood for current and future generation maintaining and improving productivity and ecosystem services. The Brundtland Commission (World Commission on Environment and Development,-1987) defined sustainable development as Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Arrow, Dasgupta, Goulder, Mumford and Oleson 2010 take the view that economic development should be evaluated in terms of its contribution to intergenerational well being. They show that intergenerational well-being would not decline over a specified time-period if and only if a comprehensive measure of the economy's wealth were not to decline over the same period. The three dimensions of sustainable development socio-economic and environmental. Economic efficiency is necessary for achieving the maximum possible growth with limited resources. The social dimension is in terms of equity, particularly intra generational equity. Poverty eradication is one of the Millennium Development Goals (MDGs) it has become a global public good by global public choice. The environmental dimension captures internalization of environmental costs of pollution and natural resource degradation in decision making of all economic agents and intra generational equity. It is being realized that natural resource degradation and pollution are not just environmental challenges they threaten poverty eradication and achievement of the MDGs, traditional production systems, conventional modern agriculture and sustainable agriculture. We can compare them across three dimensions: ecological, economic and social. Ecological sustainability many traditional and most conventional farm practices are not ecologically sustainable: they overuse natural resources, reducing soil fertility, causing soil erosion, and contributing to global climatic change. Sustainable agriculture has several major advantages over both traditional and conventional practices, soil fertility and water, a continuous fall in soil fertility is a major problem in many parts of India. Sustainable agriculture improves fertility and soil structure and prevents erosion, so would be an answer to this problem. Irrigation is the biggest consumer of fresh water, and fertilizer and pesticides contaminate both surface and groundwater. Sustainable agriculture increases the organic matter content of the topsoil, so raising its ability to retain and store water that falls as rain.

Biodiversity and pollution sustainable agricultural practices frequently involve mixed cropping, so increasing the diversity of crops produced and raising the diversity of insects and other animals and plants in and around fields. Pesticides are hazardous to human health as well as to the local ecology. Incorrect handling, storage and use of pesticides lead to health and pollution problems. Sustainable agriculture reduces or eliminates the use of hazardous chemicals; instead, it controls pests with a variety of biological and agronomic measures and the use of natural substances. Conventional agriculture contributes to the production of greenhouse gases in various ways by reducing the amount of carbon stored in the soil and in vegetation, through the production of methane in irrigated fields, and through energy-intensive activities such as the production of artificial fertilizers. Adopting sustainable agriculture would reduce these impacts significantly. Agriculture and forestry clothe the rural landscape, inappropriate use causes erosion, landslides and flooding, clogs irrigation channels, and reduces the ability of the land to support the local population. Impoverished rural people flock into the cities in search of jobs, forming unsightly, insanitary slums that further destroy the landscape. Sustainable agriculture avoids these problems by improving productivity, conserving the soil, avoiding the expansion of farming into unsuitable areas, and preserving rural jobs. Economic sustainability agriculture cannot be sustainable unless it is economically viable over the long term; conventional agriculture poses greater long-term economic risks than sustainable alternatives. Employment farming is the main source of employment for rural people, trends towards specialization and mechanization may increase narrowly measured efficiency, but they reduce employment on the land. The welfare costs of unemployment must be taken into account when designing national agricultural support programmes. Sustainable agriculture, with its emphasis on small-scale, labour-intensive activities, helps overcome these problems. Government tends to view export-oriented production systems as more important than those that supply domestic demands. Focusing on exports alone involves hidden costs in transport, in assuring local food security, etc. Policies should treat domestic demand and in particular food security (either by farmers producing food for themselves, or by selling produce for cash they can use to buy food) as equally important to the visible trade balance. Niche markets organic agriculture is one of the strongest ways to farm in an environmentally sustainable way. Social sustainability the social sustainability of farming techniques is related to the ideas of social acceptability and justice. Food security traditional farming techniques often fail to produce enough food, or enough variety of food for a balanced diet. Sustainable agriculture improves food security by improving the quality and nutritional value of the food, and by producing a bigger range of produce throughout the year. Sustainable agricultural practices usually are based on local social customs, traditions, norms and taboos, so local people are more likely to accept them and adapt them to their own needs.

TABLE 1: THE TOTAL POPULATION TOTAL FORESTS AREA NET RAIN FED AREA NET IRRIGATED AREA TOTAL AGRICULTURE PRODUCTION (FOOD GRAINS) IN INDIA FROM 1950 - 51 TO 2010 - 11

Year	Total Population (in crores)	Total Forests Area (in million hectors)	Net Rain fed Area (in million hectors)	Net Irrigated Area (in million hectors)	Total food grains (in million tonnes)
1950-51	36.11	40.48	97.90	20.85	50.8
1960-51	43.92	54.05	108.54	24.66	82.0
1970-71	54.82	63.91	109.17	31.10	108.4
1980-81	68.33	67.47	101.28	38.72	129.6
1990-91	84.64	67.87	95.22	47.78	176.4
2000-01	102.87	69.49	86.40	54.68	196.8
2010-11	121.02	69.80	85.70	63.20	257.0

Source: Compendium of Environmental Statistics – 2011.

The total population in India is 36.11 crores in 1951 it is increased to 121.02 crores in 2011. And the total geographical area of the country is 32, 87,263 sq km out of which an area of 6, 75,538 sq km or 20.5 percent was under forests in forest cover falls to 23.81 percent of total geographical area in 2012. This is much below the average of 30.4 percent for the world, and total rain fed area is 97.90 in m ha it is increased to 85.70, an irrigated area is 20.85 in m ha in 1951 it is increased to 63.20 in m ha in 2011, and total food grain production is 50.8 MTs in 1951 it is increased to 257.0 MTs in 2011. What we are doing to the forests of the world is but a mirror reflection of what we are doing to ourselves and to one another – Mahatma Gandhi.

Climate also has a significant impact on the growth and viability of forests. a steady increase in average temperatures from global warming could dramatically alter today's pattern of tree distribution, thereby putting certain species under stress and encouraging the spread of other species. In order to understand the adaptability of indigenous tree species to changes in climate, researchers in Finland are measuring the success of various tree species. They have established an arboretum and a gene pool forest with various species of conifers and hardwoods to maintain genetic diversity. The aim is to determine the factors that regulate tree characteristics, and to produce different varieties of seeds suitable for forest regeneration. Agriculture is another important sector where phytotechnologies can be applied. The production and marketing of food and other farm products such as cotton and tobacco make up the world's largest single industrial sector. An important focus of crop research is to develop plants that are resistant to insect pests and diseases. The challenge for Indian agriculture, to put simply, is to increase production, while minimizing environmental impact. This includes conserving and protecting the quality of the resources that determine the performance of agriculture like land, water and air, reductions in yield, although determined by many factors, may be partially a consequence of land and water exploitation.

Forest is a biological entity in the fascinating web of nature and always in a state of dynamic equilibrium. Forestry sector is an important ingredient in the economic and social fabrics of a country. Forest in tropics play very significant role in regulating water cycle and in conserving soils. The demand for forest products and services in tropical countries increased rapidly in the recent past with the growth of population and rural economy. This increasing demand of forest produce and land hunger by the growing population and poverty in tropics are the main causes of deterioration in forest cover. The deterioration is the result of disproportionate withdrawals of forest produce as compared to its carrying capacity and regenerative capacity. The requirements of timber, pastures, fuel wood and diversion of forest lands for agriculture and various development projects in India have put enormous pressure on forests. The apparent alternative of a forestation on non-forest lands under social forestry and agro forestry activities has not picked up well in many parts of the country to the desirable extent. India, the seventh largest country, covers about 2 percent of total global land about 1 percent forest area and about 0.5 percent pasture land of the world, but supports about 17.5 percent of human and about 15 percent of cattle population of the world and this population is always in the process of increase. India is one of the 12 mega diversity countries commanding 7 percent of world biodiversity and supports 16 major forest types varying from alpine pastures in Himalayas to temperate, sub-tropical, tropical forests and mangroves in coastal areas. However, nearly half of the country's area is degraded, affected with the problems of soil degradation and erosion through the deforestation.

India has agriculture dominant economy, about 43 percent of land is under agriculture but the productivity is far below in comparison with developed countries because only one third of cultivated areas in the country are under irrigation. About 23 percent of land area is forestlands having productivity less than one cubic metre per hectare per year against the potential of eight to ten cubic metres per hectare per year. The present low productivity is due to growing biotic pressure and inadequate resources for scientific forest management. Nearly 4.6 percent area, are cultivable waste and 7.1 percent fallow land available for tree planting and pasture development. As per one estimation, more than half (about 53 percent) of country's lands are under various types of land degradation. The most common form of degradation is from wind and water erosion and salinity. About 146 million ha area is affected with wind and water erosion and 7 million ha. Has become degraded due to excessive salts. 8.5 million Ha, is under water logging and about 10 million ha is affected with shifting cultivation. Nearly 23 percent (76 million ha.) of country land has been recorded as forests but only 19.5 percent (64 million ha.) of total area has forest or tree cover which is much less to the goal of 33 percent set by the National Forest Policy, 1988. About 65 percent of forest cover has dense forest with crown density more than 40 percent and rest 35 percent are badly degraded. The crown density of dense forests is continuously depleting due to overuse of forest resources by the people and their cattle living in and around the forests, those have been depending on forest from the past. Another 6 million hectares recorded forest areas is virtually blank, even bereft of any rootstock due to excess biotic pressure.

The protective and productive role of forests in the national economy entitles them to lay claim to an adequate share of the land. National Forest Policy, 1952, for the first time set the goal to bring 1/3rd of total land area of the country under forest and tree cover and the same was adopted in the Forest Policy, 1988. To achieve this goal, it is imperative to plan for annual plantations of about 3 million ha. Degraded forests and scrub areas, all available wastelands and marginal lands and plantation in farmlands under social forestry and suitable agro forestry systems. The National Forest Policy, 1988 lays emphasis on massive need based and time bound programme of a forestation on degraded forests, wastelands, community lands and the lands of individuals including agricultural lands, with particular emphasis on the production of fuel wood and fodder. Policy also provides that the land laws should be so modified wherever necessary so as to facilitate and motivate to undertake tree farming and grow fodder plants, grasses and legumes on their own land. It is essential to develop large-scale woodlots for fuel wood, and industrial wood and timber to meet local and national needs with full involvement of all stake holders. Though it is difficult to increase forest cover in the present scenario of land hunger, it is possible to bring all possible categories of available wastelands under tree cover. Implementation of the National Mission for a Green India as part of the National Action Plan for Climate Change can further enhance the present mitigation potential of the forestry sector.

CONCLUSION

To conclude this paper sustainable agriculture has several benefits over modern agriculture, as it is cheap conserves water, soil, and environment, maintain crop diversity and the food grains produced are nutritious and free from pesticides residues. Therefore, shift from modern agriculture to sustainable agriculture is the need of the hour for the conservation of natural resources, environment, crop diversity, and production of nutritious food grains. The important of sustainable agriculture development goal is end hunger achieves food security and improved nutrition and promotes sustainable agriculture. By 2020, the agriculture production influenced rainfall, rainfall influenced forest area, forest area influenced climate, and the rainfall maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and ensure access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed, Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries, correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect. Under the changing agricultural scenario, the agricultural technologies needs a shift from production oriented to profit oriented sustainable farming. In this direction, the pace of adoption of Resource Conserving Technologies (RCTs) by the Indian farmers is satisfactory to a larger extent but, under the present scenario, we are in the half way of conservation agriculture. This systems will

leads to sustainable farming and will be the most thrust of the future farming. The conditions for development of sustainable agriculture are becoming more and more favourable. New opportunities are opening the eyes of farmers, development workers, researchers and policy makers. They now see the potential and importance of these practices not only for their direct economic interest but also as the basis of further intensification and ecological sustainability. Scarcity increases the complexity of future pathways of land use change. In a more interconnected world, agricultural intensification may cause more rather than less cropland expansion. The apparent trade-off between forest and agriculture can be minimized through spatial management and the use of degraded or low competition lands. This can be further addressed by community based forest management, which builds on political goodwill and strong community institutions. New challenges from climate change require urgent action to explore and protect the local value of forests for livelihood even more. The United Nations Collaborative Programme on Reducing Emissions from deforestation and forest degradation in developing countries was launched in 2008 and builds on the convening role and technical expertise of the Food and Agriculture Organization of the United Nations (FAO), the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP). The UN-REDD Reducing Emissions from Deforestation and Forest Degradation Programme supports nationally led REDD processes and promotes the informed and meaningful involvement of all stakeholders, including indigenous peoples and other forest-dependent communities, in national and international REDD implementation. This is particularly true in the case of emerging activities undertaken as part of REDD activities where broad forest governance are aligned with it along with people participation ensuring livelihood benefits of the people dependant on forests. These renewed activities will safeguard traditional ways of life and the environmentally important forest ecosystems of the world.

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A STUDY OF EMPLOYEE WORK LIFE BALANCE

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ABSTRACT

Balance in work and family life is an emerging challenge for both employees and employers. This paper on Work life balance is the study conducted to understand factors affecting work life balance of employees. The research sample comprised of 100 employees from Sankalp Engineering & Services Pvt. Ltd. Pune. Questionnaire method was used to obtain information from the employees. Pie Charts, Graphs and Percentage methods were used to analyze the data. The study reveals that Work-life conflict is a serious problem that affects workers, their employers and communities. Work-life balance demonstrated to have an impact on employees in terms of retention, turnover, commitment, satisfaction, productivity, absenteeism and accident rates. Sometimes even small changes can make a difference. An unmanageable schedule and out-of-control home life can lead to depression, poor performance at work, and conflict with family and a feeling of burnout. Work Life Balance is a comfortable state of equilibrium achieved between an employee's primary priorities of their employment position and their private lifestyle.

KEYWORDS

work life balance, career, family, quality of life.

INTRODUCTION

Work–life balance is a broad concept including proper prioritizing between "work" (career and ambition) on one hand and "life" (Health, pleasure, leisure, family and spiritual development) on the other. A work life balance means the balance between work and personal life. There are many situations, life experiences, and "things" that can have a positive or a negative impact on level of work and life balance. Work-Life Balance does not mean an equal balance. Trying to schedule an equal number of hours for each of your various work and personal activities is usually unrewarding and unrealistic. Life is and should be more fluid than that. Your best individual work-life balance will vary over time, often on a daily basis. The right balance for you today will probably be different for you tomorrow. The right balances for you when you are single will be different when you marry, or if you have children; when you start a new career versus when you are nearing retirement. There is no perfect, one-size fits all, balance you should be striving for. The best work-life balance is different for each of us because we all have different priorities and different lives. However, WLB is defined as "The amount of time you spend doing your job compared with the amount of time you spend with your family and doing things you enjoy." It can be difficult to get the right work-life balance. Experts say success lies not only in carefully defining how you want to spend your time, but in making sure you adjust your life and work as your needs change. Most psychologists would agree that the demands of an employee's career should not overwhelm the individual's ability to enjoy a satisfying personal life outside of the business environment. We have a work life. We have a home life. And we have, in all probability, forgotten how to keep them separate. Climbing the organizational ladder often requires employees to work long hours and deal with difficult and complex issues. Some days on the job are likely fun and positive and other days are tension-filled and stressful. A common dilemma for many people is how they manage all of the competing demands in work and life and avoid letting any negative effects of work spill over into their personal lives. Research has in fact shown that employees who believe they do not have time for the personal life feel drained and distracted while they are at work. In addition, the spillover of negative aspect of work into an employee's personal life can lead to job exhaustion, disruption of relationships with family and friends, loss of enjoyment, and increased stress. Work-life balance is about creating and maintaining supportive and healthy work environments, which will enable employees to have balance between work and personal responsibilities and thus strengthen employee loyalty and productivity. Making an improvement in either their work or personal life can have a great and positive impact on the other side as well. Work life balance is about people having measure of control over when, where and how they work. There is a view that work-life balance only in the framework of what the company does for the individual. It also deals with what individuals do for them. The core of work life balance could also be summed as achievement with enjoyment. If an individual goes on working, his or her best at work place but not really enjoying the same then happiness and satisfaction can never be achieved. Achievement can be viewed as motive of life while enjoyment is the fuel that drives that motive.

LITERATURE REVIEW

According to a survey conducted by the National Life Insurance Company, four out of ten employees state that their jobs are "very" or "extremely" stressful. Those in high-stress jobs are three times more likely than others to suffer from stress-related medical conditions and are twice as likely to quit. The study states that women, in particular, report stress related to the conflict between work and family. The number of stress-related disability claims by American employees has doubled according to the Employee Assistance Professionals Association in Arlington, Virginia. Seventy-five to ninety percent of physician visits are related to stress and, according to the American Institute of Stress, the cost to industry has been estimated at $200 billion-$300 billion a year. Steven L. Sauter, chief of the Applied Psychology and Ergonomics Branch of the National Institute for Occupational Safety and Health in Cincinnati, Ohio, states that recent studies show that "the workplace has become the single greatest source of stress". Michael Feuerstein, professor of clinical psychology at the Uniformed Services University of the Health Sciences at Bethesda Naval Hospital states, "We're seeing a greater increase in work-related neuro skeletal disorders from a combination of stress and ergonomic stressors". According to Sylvia Hewlett, president of the Center for Work-Life Policy, if a woman takes time off to care for children or an older parent, employers tend to "see these people as less than fully committed. It's as though their identity is transformed." Brett Graff, Nightly Business Report correspondent states that (because a woman may have trouble re-entering the market or, if she does find a position, it will likely be a lower position with less pay). "If you thought choosing a baby name was hard, you have yet to wrestle with the idea of leaving your career to be a full-time mom or take care of an older parent…Most will want to reenter, but will do so accepting lesser positions or lower wages." This circumstance only increases the work-life balance stress experienced by many women employees. Research conducted by the Kenexa Research Institute (KRI), a division of Kenexa, evaluated how male and female workers perceive work-life balance and found that women are more positive than men in how they perceive their company's efforts to help them balance work and life responsibilities. The report is based on the analysis of data drawn from a representative sample of 10,000 U.S. workers who were surveyed through Work Trends, KRI's annual survey of worker opinions. The results indicated a shift in women's perceptions about work-life balance. In the past, women often found it more difficult to maintain balance due to the competing pressures at work and demands at home.

IMPORTANCE OF THE STUDY

Work-life balance is about creating and maintaining supportive and healthy work environments, which will enable employees to have balance between work and personal responsibilities and thus strengthen employee loyalty and productivity. Numerous studies have been conducted on work-life balance. People who are constantly tied to their jobs deal with the symptoms of stress and burnout. If a person does not have a time to relax and recharge, their ability to do their job decreases and their performance level suffers. Thus, from a management point of view, it is important to encourage a person to take time off from work instead of putting in long hours. Creating a schedule that allows a person to do activities they enjoy will help them to be better employees, friends, and family members. Once the time to work is over the person needs to learn to walk away from the laptop and not answer the cell phone for work calls. This type of balance is not easy to achieve because there will always be people who want to make demands on an individual's time. People need to learn that it is okay to say no and only

agree to take on additional tasks if they are important. Without creating a work-life balance, a person is not able to take time to enjoy the life they have worked so hard to create. They are not available for friends and family members, and often take their stress out on the ones they love. They can also suffer from illness and physical disorders that stem from prolonged stress such as heart disease, alcoholism, and even diabetes. Main reason for work life imbalance is long working hours. Other reasons include job security, support from one's supervisor, support from co-workers, work demands or overload, work-role conflict, work-role ambiguity, job dissatisfaction, and extensive use of communication technology that blurs the boundaries between home and work.

OBJECTIVES

1. To study the concept of work life balance.
2. To study effect of work life balance on satisfaction & loyalty of employees.
3. To study the effect of work-life balance on the quality of life
4. To study work life balance policies of company.
5. To understand the importance of work life balance.

METHODOLOGY AND TOOLS

The present study is confined to Sankalp Engineering & Services Pvt. Ltd. Pune. 100 employees were selected randomly and interviews were conducted. Out of 100 employees, 72 are male and 28 are female employees. Primary data have been collected with the help of structured and close-ended questionnaire. The data collected from the primary source is analyzed with various statistical tools. Here secondary data was collected from official records, website and files and from managers / team leads with their permission. The statistical tools were used for analyzing and opinions of the employees were interpreted with help of simple percentage analysis. The results were presented with the help of different pie charts and graphs. Findings of the study were drawn by analyzing the data. Suggestions and conclusions have been made based on the findings.

RESULTS AND FINDINGS

The researcher found that most of employees are able to balance their work life. Workers feel happy while working in the company. Employees experience stress due to work, but company takes different measures to control stress of workers such as sports facility, health care center, transport facility, canteen facility, paid leaves etc. Most of the employees said that they feel stress-free after spending time with their family, kids, friends and loved ones. More employees take help of yoga, meditations, and music for reducing stress. Many Employees concentrate on performance by residing thinking on their family future. Employees feel certain things will help them to balance their work-life such as Flexible starting hours, Flexible finishing time, holidays/paid time offs, Job sharing and time-off for family events.

SUGGESTIONS

Employees may work on flexible starting hours, flexible finishing time, holidays/paid time offs, time off for family events. Management would concern for workload sharing and proper planning of timing of each employee and his/her individual work, which can increase the efficiency, and effectiveness of the company. Management can encourage the involvement of their family members in work- achievement reward functions. Organizations must focus on giving better services to their employees proposing an array of employee support plans. Companies can begin steps to accomplish work life balance by organizing workshops, play games, trips, cultural fests, events like fashion shows, etc. furthermore family day celebration where activities are planned for kids, Couples and other family members etc. can help the employees in achieving work life balance. Employees should spend their time after work with children, spouse and other family members. They should practice stress management techniques like swimming, yoga, playing an instrument and gym etc. People need to give proper time to their interest because this is necessary to refresh and overcome the mental as well as physical stress. Morning walk or a long walk in the afternoon is tonic for the people who stay all the day with sitting-work/ office-work. They also needs to go for exercise or any play ground game which keeps their health best and energize them well. A home even a family activities place but there needs to be setup some cheerful activities like birthday celebration, get-together parties, family friend's gatherings etc., which is necessary to be an active part of society. A pause in work and proper deep-sleep in the night according to age and nature of work is an essential element of work-life balance. Your soul will be thirsty in all this work-life management if you do not care about that. Health, wealth, joy even any big achievement sometimes felt nothing only due to the ignoring the spiritual activities. Yourself, your inner will be in worry if you'll not give time to your soul, that's a pray, a religious activity, a meditation which returns a bliss in your life, a calm state of mind, a physical healing, a boost to your immune system.

CONCLUSION

Work-life balance is about creating and maintaining supportive and healthy work environments, which can enable employees to have balance between work and personal responsibilities and thus strengthen employee's loyalty and productivity. Work-life balance is an essential part of Corporate Social Responsibility. The success of the company depends upon the satisfaction of employees; So Company may utilize the potential Trainers to provide the effective and efficient training to employees. By thinking differently, we can perhaps find ways to have a better balance between work and home. Evidence suggests that improvements in people management practices, especially work time and work location flexibility, and the development of supportive managers, contribute to increased work-life balance. Today's workers have many competing responsibilities such as work, children, housework, volunteering, spouse and elderly parent care and this places stress on individuals, families and the communities in which they reside. Work-life conflict is a serious problem that affects workers, their employers and communities. The improvements in people management practices, especially work time and work location flexibility, and the development of supportive managers, contribute to increased work-life balance. Work-life balance programs demonstrated to have an impact on employees in terms of retention/turnover, commitment and satisfaction, absenteeism, productivity and accident rates.

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A DESCRIPTIVE STUDY ON THE ANALYSIS OF FINANCIAL INCLUSION WITH SPECIAL REFERENCE TO PRADHAN MANTRI JAN –DHAN YOJANA (PMJDY)

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ABSTRACT

Financial inclusion is an innovative concept which enables the alternative techniques to promote the banking habits and acts as enabler in reducing the poverty and the launch of Pradhan Mantri Jan Dhan Yojana (PMJDY) by Government of India is in that direction. Pradhan Mantri Jan-Dhan Yojana (PMJDY) is an ambitious scheme for comprehensive financial inclusion launched by the Honorable Prime Minister of India, Shri Narendra Modi on 28th August, 2014. He had announced this scheme on his first Independence Day speech on 15th August, 2014. Jan Dhan Yojana in English it is nothing but "People's Wealth Scheme". The scheme is not only limited to opening of a bank account but has other benefits with it viz. zero balance bank account with RuPay debit card, in addition to accidental insurance cover of Rs 1 lakh, those who open accounts by January 26, 2015 over and above the Rs 1 lakh accident, they will be given life insurance cover of Rs 30,000, etc. The study is based on secondary sources collected from published articles, various journals, newspapers, reports, books, and official websites of PMJDY. The paper reveals that PMJDY scheme is fully helpful to rural and urban area people in getting directly the government schemes. The study concludes that, PMJDY scheme has created an impressive result in the banking sector with regard to eradication of financial untouchability in the country. Mere opening of bank accounts may not fulfill the aim of the scheme, but there should be continuous operation of bank accounts to give the real success of the scheme.

KEYWORDS

financial inclusion, frill accounts.

INTRODUCTION

Financial inclusion is delivery of banking services at an affordable cost ('no frills' accounts,) to the vast sections of disadvantaged and low income group. Pradhan Mantri Jan-Dhan Yojana (PMJDY) is National Mission for Financial Inclusion is based on "Sab ka sath sab ka vikas" i.e. inclusive growth to ensure access to financial services, namely, Banking/ Savings & Deposit Accounts, Remittance, Credit, Insurance, Pension in an affordable manner, launched by Shri. Narendra Modi on 28 August 2014. The scheme has been started with a target to provide universal access to banking facilities starting with basic banking accounts with overdraft facility of Rs. 5,000 after six months and RuPay Debit Card with inbuilt accident insurance cover of Rs. 1 Lakh and RuPay Kisan card. In the next phase, micro insurance and pension etc. will also be added. The main objective of this scheme is that easy financial services for the excluded section i.e. weaker sections and the low-income group. As per the scheme, one could open an account in any bank branch or business correspondent outlet with zero balance. The study is based on secondary sources collected from published articles, various journals, newspapers, reports, books, and official websites of PMJDY. The paper reveals that PMJDY scheme is fully helpful to rural and urban area people in getting directly the government schemes. The study concludes that, PMJDY scheme has created an impressive result in the banking sector with regard to eradication of financial untouchability in the country. Mere opening of bank accounts may not fulfill the aim of the scheme, but there should be continuous operation of bank accounts to give the real success of the scheme.

The study concludes that, PMJDY scheme has created an impressive result in the banking sector with regard to eradication of financial untouchability in the country. Mere opening of bank accounts may not fulfill the aim of the scheme, but there should be continuous operation of bank accounts to give the real success of the scheme

OBJECTIVES OF THE STUDY

1. To know the procedure to open PMJDY.
2. To identify the aim of PMJDY.
3. To analyze the extent of the scheme success.
4. To study the challenges of PMJDY.

METHODOLOGY OF THE STUDY

The present study is descriptive in nature. The present paper is primarily based on secondary sources of data. The information and data for the research has been collected from government publications, published articles, journals, newspapers, reports, books, and official websites of Pradhan Mantri Jan Dhan Yojana (PMJDY).

IMPORTANCE OF THE STUDY

The prime objective of financial inclusion in developing countries like India is the access and availability of banking and payments services to the entire population at the reasonable cost and without any discrimination. The implication of the financial inclusion is much needed when the exclusion mass is entrapped in the hydra headed cycles of poverty. This causes further social exclusion which is very much detrimental for the equitable growth of the country. That is why there is an urgent need to implement effectively PMJDY by virtue of financial inclusion as all other development activities are hindered by this single disability. This is an important step towards converting Indian economy into a cashless and digital economy. The Pradhan Mantri Jan-Dhan Yojana is a Financial Inclusion Programme which was started by the government and which aims to ensure access to financial products and banking services to all Indians, especially to those who do not have such access. The study is based on secondary sources collected from published articles, various journals, newspapers, reports, books, and official websites of PMJDY. The paper reveals that PMJDY scheme is fully helpful to rural and urban area people in getting directly the government schemes. The study concludes that, PMJDY scheme has created an impressive result in the banking sector with regard to eradication of financial untouchability in the country. Mere opening of bank accounts may not fulfill the aim of the scheme, but there should be continuous operation of bank accounts to give the real success of the scheme.

Aim of the scheme is:

1. To bring financially excluded people into banking system.
2. To cover both urban and rural areas.
3. For the purpose of making digital India.
4. For the development of Indian economy.

DOCUMENT REQUIRED TO OPEN AN ACCOUNT UNDER PRADHAN MANTRI JAN-DHAN YOJANA

An account can be opened by presenting an officially valid document.

1. the passport,
2. the driving license,
3. the Permanent Account Number (PAN) Card,
4. the Voter's Identity Card issued by Election Commission of India,
5. job card issued by NREGA duly signed by an officer of the State Government,
6. the letter issued by the Unique Identification Authority of India containing details of name, address and Aadhaar number, or
7. any other document as notified by the Central Government in consultation with the Regulator: Provided that where simplified measures are applied for verifying the identity of the clients the following documents shall be deemed to be officially valid documents:—
8. identity card with applicant's Photograph issued by Central/State Government Departments, Statutory/Regulatory Authorities, Public Sector Undertakings, Scheduled Commercial Banks, and Public Financial Institutions;
9. Letter issued by a Gazetted officer, with a duly attested photograph of the person.

Reserve Bank of India (RBI), vide its Press Release dated 26.08.2014, has further clarified that those persons who do not have any of the 'officially valid documents' can open "Small Accounts" with banks. A "Small Account" can be opened on the basis of a self-attested photograph and putting his/her signatures or thumb print in the presence of officials of the bank. Such accounts have limitations regarding the aggregate credits (not more than Rupees one lakh in a year), aggregate withdrawals (nor more than Rupees ten thousand in a month) and balance in the accounts (not more than Rupees fifty thousand at any point of time). These accounts would be valid normally for a period of twelve months. Thereafter, such accounts would be allowed to continue for a further period of twelve more months, if the account-holder provides a document showing that he/she has applied for any of the Officially Valid Document, within 12 months of opening the small account

BENEFITS OF THE SCHEME

- Accidental Insurance Cover: It's not often we hear of insurance cover along with a bank account. The Pradhan Mantri Jan Dhan Yojana provides insurance cover. This accidental insurance cover is to the tune of Rs 1 lakh
- No Minimum Balance Required Under Pradhan Mantri Jan Dhan YojanaMost of the savings bank accounts today require a minimum balance to be maintained in the savings account. Even government owned banks have this norm and the balance requirements is higher in the case of private sector banks. In case of accounts opened through Pradhan Mantri Jan Dhan Yojana there is no need to maintain the minimum balance.
- Pradhan Mantri Jan Dhan Yojana Life Insurance Cover of Up to Rs 30,000. Though for many individuals this might not be a big sum, it could certainly be of solace for the poorer classes.
- Direct Transfer of Subsidies and Other Benefits: Individuals who receive various benefits under various government schemes like LPG subsidy and others can now receive the amount directly into their PMJDY accounts. This is highly beneficial and will help ensure transparency.
- Easy Transfer of Money: Under the Pradhan Mantri Jan Dhan Yojana it is also possible to transfer money. This is a big advantage especially for the poorer classes.
- Overdraft Facility: The account would also one an overdraft facility. This would provide access to capital when in need of emergency. However, this would be available only after six months of successful operation.

TABLE 1: PRADHAN MANTRI JAN - DHAN YOJANA (All figures in Crore)

Beneficiaries as on 18/10/2017

Bank Name / Type	Number of Beneficiaries at rural/semiurban centre bank branches	Number of Beneficiaries at urban metro centre bank branches	Number of Total Beneficiaries	Deposits in Accounts(In Crore)	Number of Rupay Debit Cards issued to beneficiaries
Public Sector Banks	13.45	11.17	24.61	53362.38	18.43
Regional Rural Banks	4.15	0.75	4.90	11892.79	3.61
Private Sector Banks	0.59	0.38	0.98	2061.11	0.91
Grand Total	**18.19**	**12.30**	**30.49**	**67316.28**	**22.95**

Source: Official website of PMJDY

Disclaimer: Information is based upon the data as submitted by different banks / SLBCs

CHALLENGES TO THE SCHEME

Various studies have already been done on the ground realities of Financial Inclusion scheme and the following challenges have been identified:

1. Lack of usage of bank accounts – Most of the bank accounts opened are not operative. There could be many reasons for the non-operation of bank accounts, for example, lack of financial literacy or lack of funds with account holders.
2. Financial Literacy – This is one of the major concerns especially in rural areas. People do not have requisite knowledge and awareness of the financial services that are being offered to them.
3. Handling of Large number of accounts – There is a need for setting up infrastructure to address large number of accounts that are opened. Technology can play a vital role to service large number of new and existing customers.
4. Manpower Training – Banking staff and business correspondents should be trained adequately to deal with people living in rural areas, who don't have much knowledge about financial services. Social skills training to deal with people living in rural areas should be imparted.
5. Security –Adequate systems should be in place so that there is no chance of any leakage of any sensitive information to the outside world.
6. Malpractices – There are many instances when people are asked to pay amount ranging from Rs. 1000 -3000 for opening bank accounts under PMJDY whereas these accounts are supposed to be opened free of cost.
7. Lack of Trust – There seems to be lack of trust in banking correspondents due to which borrowing from moneylenders is still prevalent.
8. Use of Technology – There is low telecom penetration in rural areas. Also, the debit card penetration is low in rural areas. Although, government is providing RuPay cards, their usage has not picked up.

CONCLUSION

The Pradhan Mantri Jan Dhan Yojana scheme has substantial growth in number of accounts opened. In globalized scenario, it is important to financially include all sections of the society in this scheme to achieve the goal of inclusive growth of the nation. PMJDY is a national mission on financial inclusion which is concentrated on individual household with an aim to provide formal financial support through the organized financial system. Success of the PMJDY scheme depends on the effective regulatory system as in the stakeholders have to build a sustainable ecosystem to keep the accounts active and successful implementation of the programme. For the success of any scheme constant review and regular check is very much essential. Successful implementation would not only reduce poverty but also puts a check on corruption. A bold first step by NDA Government indeed helped many to come into the main stream of economy and reduce financial

untouchability. The paper reveals that PMJDY scheme is fully helpful to rural and urban area people in getting directly the government schemes. The study concludes that, PMJDY scheme has created an impressive result in the banking sector with regard to eradication of financial untouchability in the country. Mere opening of bank accounts may not fulfill the aim of the scheme, but there should be continuous operation of bank accounts to give the real success of the scheme.

SUGGESTIONS

1. Budgetary provisions may be made by the government for poverty eradication under which significant amount can be charged through nationalized banks for transmitting the benefits to the beneficiaries.
2. Duplication of accounts by single person shall be checked under KYC details.
3. Public sector banks and India post can be pressed into action for the effective implementation of Jan Dhan Yojana. Private Banks shall be strictly warned not to levy hidden charges.
4. More centers of financial literacy may be established to bring excluded people under financial inclusion.
5. By targeting college students for opening Jan Dhan Accounts there is a twofold benefit. Firstly, we will achieve our target of opening one account per household. India has a huge demographic dividend as 65% of the population is less than 35 years of age. There is a high probability that financial literacy will spread more easily among educated students studying in universities rather than their respective parents living in villages. Secondly, college fees and individual scholarships can be tied to the same bank account. The bone of contention for present PMJDY scheme is the operationalization of bank accounts, as most of the accounts are dormant, and the commercial viability of this scheme for the banks. Linking student accounts to PMJDY scheme will increase the amount of money in the bank accounts, which will make it commercially viable.

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SAVINGS BEHAVIOR AMONG WOMEN IN PATHANAMTHITTA DISTRICT OF KERALA

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ABSTRACT

Savings is an important aspect of the socio-economic development of rural households. Under present developing countries like India, savings can play a vital role for upgrading standard of living of marginal peoples. Present study entitled "Savings Behaviour among women in Pathanamthitta District of Kerala" is an empirical study on small savings and investment of rural households in Pathanamthitta District of Kerala. The study shows that the saving habit of women in the district is positive. Income levels of the rural households are despondent but people have habit to save in small savings scheme. Savings environment are growing steadily.

KEYWORDS

Pathanamthitta district, income, investment, savings behaviour.

INTRODUCTION

Pathanamthitta is one among the 14 districts in Kerala. Total population of the District is 11.97 Lakhs approximately, out of which 46.9% are males and 53.1% are females (GOI, Census, 2011). 89 % of the population live in rural area and 11% only lives in urban area. The present study, entitled "SAVINGS BEHAVIOR AMONG WOMEN IN PATHANAMTHITTA DISTRICT OF KERALA" has revealed to focus the contemporary scenarios on savings behaviour in Pathanamthitta district of Kerala. The study has examined the various obstacles and opportunities of savings in the District of Kerala. Through the study, the obstacles and opportunities are to be carefully analyzed for better understanding of the future of small savings as well as socio-economic development of the place.

REVIEW OF LITERATURE

Many studies on small savings and investment have been carried out by the researcher. Some studies regarding the topic are:

S.C. Shanbagavalli (2002) who had attempted a study on role of post office in Salem district relating to savings bonds. He concluded that most attractive post office Saving Schemes need to be designed to promote and to mobilize savings from unemployed and Business people particularly in rural areas as well as the low income-group people.

Anand (2002), in her discussion paper titled "Self Help Groups" in empowering Women: case study of selected SHGs and NHG assesses the impact of micro credit programme on empowering women. She is of the opinion that delivering of credit never provides empowerment.

Singha (2004) in her article "Micro Finance for women's empowerment: A Perspective" argues that the micro finance can contribute to solve the problems of inadequate housing and Urban services as an integral part of poverty alleviation programmes. She suggests a solution for this problem that is to provide multipurpose loans or composite credit for income generation and housing improvement.

Nair and Girija (2005) in their article 'Micro Finance – The new Development Paradigm for Poverty Eradication and Women Empowerment' argues that many of the poverty alleviation programmes through organized credit channel have not achieved the required success. But the Micro finance schemes of NABARD proved a success in eradication of poverty and empowering Women to manage the enterprises.

Bindhu. P.K (2013) analyzed financial literacy and income level influences on the savings and investment pattern of urban city households. He concluded that financial literacy is an important predictor of financial behaviour in the developing countries around the world. The study also reveals the fact that the urban households prefer to save their money for meeting social obligation like marriage, repayment of debt etc.

OBJECTIVES OF THE STUDY

The basic objective of the present research work is to present a detailed scenario on small savings by women in Pathanamthitta District. Apart from these overall objectives, there are some specific objectives, which are as follows:

1. To examine the saving pattern of the women in the District.
2. To identify the determinants of savings behaviour of women in the District.
3. To offer suggestions for improvement of savings from the present stage in the District.

METHODOLOGY

SCOPE OF STUDY

The present study is covering Pathanamthitta district of Kerala

SOURCES OF DATA

Both the primary and secondary data were used for the present study. The primary data required for the present study were collected from 120 numbers of households from different sections of people viz., employees, housewives, agents of various small savings scheme, businessmen & others, etc. on simple random basis with the help of structured questionnaire.

Primary data for the present study were also collected through interaction and consultation with the top management from the concerned department.

The secondary data were collected from the Directorate of Small Savings; Government of Kerala, National Savings Institute (NSI), Department of Posts and Telegraphs etc. Other relevant secondary information were also collected from various books, journals, annual reports, magazines, publications & thesis, etc.

FRAMEWORK OF ANALYSIS

Primary and secondary data collected from various sources were analyzed with the help of different financial tools and statistical devices such as percentage and so on. The data were also analyzed with the help of pictorial presentation methods wherever necessary to get the result of data analysis.

RESULTS AND DISCUSSIONS

From the collected data from household respondents through structured questionnaire, the following analysis and interpretations have been made

AGE LEVEL OF RESPONDENTS

TABLE NO. 1: AGE LEVEL OF RESPONDENTS

Sl. No	Age group	No. of Respondents	Percentage
1.	Up to 25	20	16.67
2.	25-40	32	26.67
3.	40-55	38	31.66
4.	Above 55	30	25
5.	**Total**	**120**	**100**

From the Table No. 1 it is showing that a lion portion of the respondents belongs to the age group between 40 years and 55 years (31.66%), 26.67% of the respondents are belongs to 25-40 years age group, 25 % of the respondents are belongs to above 55 years age group and remaining 16.67% of the respondents are belongs to below 25 years age group. It implies that the majority of the household respondents belongs age group between 40 years and 55 years.

EDUCATIONAL QUALIFICATION OF RESPONDENTS

TABLE NO. 2: EDUCATIONAL QUALIFICATION OF RESPONDENTS

Sl. No	Qualification	No. of Respondents	Percentage
1.	Illiterate	9	7.5
2.	Upto Class 4	12	10
3.	Class 5 to 10	21	17.5
4.	Class 10- 12	38	31.67
5.	Graduates /other	29	24.16
6.	Post graduates	11	9.16
7.	**Total**	**120**	**100**

From the Table No. 2 it reveals that only 7.5% of the respondents are illiterates, 31.67% of the respondents have higher secondary education, 24.16% of the respondents have graduation, 17.5 % of respondents have gone to classes 5 to 10, 10% has elementary level education and remaining 9.16 % of the respondents are postgraduates. From this scenario it is interpreted that majority of the respondents have higher secondary level education. Therefore, it may conclude that the future of small savings and investment in the District will be brighter.

OCCUPATION OF RESPONDENTS

TABLE NO. 3: OCCUPATION OF RESPONDENTS

Sl. No	Occupation	No. of Respondents	Percentage
1.	Gov:t employee	11	9.16
2.	Private	9	7.5
3.	Business/agriculture	32	26.67
4.	House wife	23	19.67
5.	Pensioner	17	14.17
6.	Daily wage worker	28	23.33
7.	**Total**	**120**	**100**

Occupational status of the respondents have been classified under 6 major groups. From the below Table No. 3 it is showing that 26.67% of the respondents are either entrepreneurs or engaged in agriculture, 23.33% employed as daily wage workers, 19.67% are house wives, 14.17% of the respondents are pensioners, 9.16% are government employees and remaining 7.5% of the respondents are working in private sector.

FAMILY INCOME OF RESPONDENTS

TABLE NO. 4: MONTHLY FAMILY INCOME OF RESPONDENTS

Sl. No	Income	No. of respondents	Percentage
1.	Less than 5000	18	15
2.	5000-10000	32	26.67
3.	10000-15000	42	35
4.	15000-20000	19	15.83
5.	20000 and above	9	7.5
6.	Total	120	100

Monthly family income of the majority respondents are between Rs. 10000 and 15000 (35%), 26.67% of the respondents have monthly family income Rs. 5000/- to Rs. 10000/-, 15.83% of the respondents have monthly family income Rs. 15000/- to Rs. 20000/-, 15 % of the respondents have monthly income less than Rs. 5000/-and remaining 7.5% of the respondents have monthly family income above Rs. 20000/-. As income is the source of savings and majority of the respondents have monthly income below Rs. 15,000/-, it is not a good symptom for positive savings environment.

MONTHLY SAVINGS OF RESPONDENTS

TABLE NO. 5: MONTHLY SAVINGS OF RESPONDENTS

Sl. No	Savings	No. of respondents	Percentage
1	Less than 2000	26	21.67
2	2000-4000	37	30.83
3	4000-6000	36	30
4	6000-8000	14	11.67
5	8000 and above	7	5.83
6	Total	120	100

From the below table No.5 it is reveals that 30.83% of the respondents have monthly savings between Rs. 2000/- and Rs. 4000/-, 30% of the respondents have monthly savings between Rs. 4000/- and Rs. 6000/-21.67% of the respondents have monthly savings below Rs. 2000, 11.67% of the respondents have monthly savings between Rs. 6000/- and Rs. 8000/- remaining 5.83% of the respondents have monthly savings above Rs. 8000/-. From this we can understand majority of the savings are between Rs. 2000/- to Rs. 6000/.

INFLUENTIAL FACTORS IN MAKING SMALL

TABLE NO. 6: INFLUENTIAL FACTORS IN MAKING SMALL

Sl.No	Factors	No. of respondents	Percentage
1	Society	73	60.83
2	Agents	33	27.5
3	Own knowledge	14	11.67
4	Total	120	100

60.83% of the respondents have started savings and investment by the influence from society, 27.5% have started by pressured from agents and others, and remaining 11.67% only have started by own knowledge acquired from advertisement by government, awareness programmes etc.

ATTITUDE OF RESPONDENTS TOWARDS SAVINGS

TABLE NO. 7: ATTITUDE OF RESPONDENTS TOWARDS SAVINGS

Sl. No	Attitude	No. of Respondents	Percentage
1	Need to save more	42	35
2	Need to spend more	16	13.33
3	Continue the same	62	51.67
4	Total	120	100

Majority of the respondents (51.67%) feel that they should continue the same level of saving. 35% of the respondents feel they should increase the amount they save from their income and the remaining 13.33% feel they are saving more and spending less and hence need to increase level of expenditure.

AVENUES OF VARIOUS SMALL SAVINGS AND INVESTMENT SCHEMES

TABLE NO. 8: AVENUES OF VARIOUS SMALL SAVINGS AND INVESTMENT SCHEMES

Sl. No	Avenues	No of Respondents	Percentage
1	Govt Schemes	30	25
2	Post Office Schemes	45	37.5
3	Chit funds	38	31.67
4	Banks /Others	7	5.83
5	Total	120	100

Majority of the respondents (37.5%) use Post Office Saving Schemes for investing their savings. Chit fund is also used as an avenue for savings by 31.67% of the respondents. 25% of the respondents use government schemes for savings and the remaining 5.83% use other avenues.

PARTICIPATION IN AWARENESS PROGRAMMES ABOUT SAVINGS AND INVESTMENT

TABLE 9: PARTICIPATION IN AWARENESS PROGRAMMES ABOUT SAVINGS AND INVESTMENT

Sl. No:	Participation	No of Respondent	Percentage
1.	More than 3	3	2.5
2.	1-3	51	42.5
3.	Never	66	55
4.	Total	120	100

Majority of the respondents(55%) has never attended any awareness programmes conducted on savings and investment schemes. 42.5% of the respondents have participated more than one but less than three awareness programmes. And a very few (2.5%) of the respondents have participated more than 3 programmes of this nature.

FINDINGS OF THE STUDY

1. Majority of the respondents belong to the age group 40-55 years.
2. Most of the respondents have at least higher secondary level education and a very minor group are illiterates.
3. The majority of respondents depend on agriculture or business and very few are only working in government sector.
4. Monthly family income of the majority respondents are between Rs. 10000 and Rs. 15000 and a very few among the respondents only earn above 20000.
5. Most of the of the respondents have monthly savings between Rs. 2000/- and Rs. 4000/-
6. 6. A lion portion of the respondents has started savings and investment by the influence from society.
7. Majority of the respondents feel that they should continue the same level of saving and a few of the respondents only feel that they are saving more and spending less and hence they feel they need to increase level of expenditure. From this, we can understand the women in this district are saving oriented in nature.
8. Majority of the respondents use Post Office Saving Schemes for investing their savings. Chit fund is also used as an avenue for savings by a good portion of respondents.
9. Majority of the respondents has never attended any awareness programmes conducted on savings and investment schemes and a very few among the respondents have participated more than 3 programmes of this nature.

SUGGESTIONS

1. The number of illiterates should be minimised to zero. For this, the women should be compulsorily given classes. For making them financial literates, primarily they have to be given basic education.
2. Income from agriculture is highly depended on climatic conditions. Women solely depending on agriculture will suffer in adverse situation. Therefore, they should try to be engaged in a more stable mode of employment. Government should try to give more employment to rural women so that it can lead to a better earning and saving pattern
3. Agents should be trained properly and authorised by government to influence and interfere in the saving pattern of the women in the district. Wrong influences can lead them to loss the hard-earned money that they saved. Hence once agents are authorised by government, public will have a trust in them and their guidance.
4. The participation of women in awareness programmes is very low. The knowledge they have about various financial avenues are also out dated hence. There should be more awareness classes conducted and they should be made aware of the importance of attending them.

CONCLUSION

Savings is a process that is continuing from thousand and thousand years ago. It has stood as a living standard of the people. The characteristic and nature of the savings and investment has been changing year after year and decade after decade. Women have a major role in managing the money of a family. The scenario has changed from women confined to kitchen; she has now become a source of income in families. By empowering and creating more awareness in women about money and saving, a huge change can be expected in society. Financial literacy, massive awareness program, proper training of the Agents and a good management system is needed for a good savings and investment environment in Pathanamthitta District.

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A DIMENSIONAL MEASUREMENT OF ORGANISATIONAL CLIMATE IN INDIAN OIL CORPORATION LTD., DIGBOI REFINERY, ASSAM

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ABSTRACT

Core competition is very important for the survival of any organisation. In a large-scale industrial unit like Indian Oil Corporation Ltd., it is very important to have a positive organisational climate for sustaining and challenging the modern competitive world. A healthy organisational climate promotes employees growth and thus contributes positively to the business outcome. The quality of organisational climate affects the overall performance of employees. Positive climate is an indicator of positive attitude of top, middle as well as lower level of employees in a petroleum industry. The present study is a humble attempt to acclimatise the various dimensions of organisational climate from the existing literature. The study also attempts to measure the various dimensions of organisational climate namely challenge, involvement, trust, openness, freedom, humour, conflict, idea support, debate and risk taking in Indian Oil Corporation Ltd., Digboi Refinery, Assam. The study used the Organisational Climate Questionnaire to measure the dimensions of organisational climate and found that idea time, playfulness, conflict and risk taking are having lower influence to the organisational climate. However, debate, trust, challenge, freedom and idea support are found as "good" dimensions, which contribute positive influence to the organisational climate of the organisation under study.

KEYWORDS

conflict, dimensions, organisational culture and positive climate.

INTRODUCTION

Human resources are effectively deployed through appropriate human resource practices and management of organisational culture (Barney & Wright, 1998). Human resource is the most important resource that an organisation possesses. It is the contributor to the intellectual, social and emotional capital of an organisation, thereby being the most important instruments behind every success. It is thus very important to develop the competencies of this resource with changing times, to keep them in pace with the competition (Barney, 1991). In addition, the organisations are facing intense challenges of employees' commitment and proper organisational climate. These challenges are not unique to any specific organisation or industry, but affect all organisations, regardless of their structure or size. Organisational climate in particular is constantly being challenged by the impact of the changes today (Nair & Ghosh, 2006). To survive and surpass their competitors, organisations are constantly seeking to improve their performance. Brown and Leigh (1996) revealed that organisational climate has become more important than ever before because organisations need to ensure that those employees who contribute to the growth of the organisation will want to stay in the organisation and will continue pouring their efforts in to their work to benefit the organisation. Schneider (1990) defined organisational climate as perceptions of the events, practices and procedures, as well as the kind of behaviors, which get rewarded, supported and expected in a particular organisational setting. Isaksen et al. (2001) articulated organisational climate as the recurring of patterns of behaviour, attitudes and feelings that characterise life in organisations. Organisational climate and organisational culture are associated with each other in the literature and sometimes they are even used interchangeably (Wall, 1999). Climate is conceived as an organisational reality in an objectivistic sense. Culture refers to deeper and more enduring values, norms and beliefs within the organisation however, climate is distinct from culture in that it is more directly observable within the organisation (Ekvall, 1996). Bowen and Ostroff (2004) elaborated organisational climate as a shared perception of what the organisation is like in terms of practices, policies, procedures, routines and rewards. Organisations shall continuously seek for a developmental climate because only then their human resources will be more flexible to changes brought by organisations to cope up into the changing competition.

Organisational climate is the quality of working environment. Individuals when valued and respected by the organisation, contribute positively to business outcome. The feelings, attitudes and behaviour of its employees as influenced by the adopted organisational policy, results in the creation of a unique organisational climate. A positive climate will encourage employees' growth and commitment. In the words of Cambell (1970) organisational climate is a set of attributes specific to a particular organisation that may be induced from the way that the organisation deals with its members and its environment. For the individual employees within the organisation, climate takes the form of a set of attitudes and expectancies, which describe the organisation.

Digboi is a small town in Assam situated in the North-Eastern part of India. The place is the headquarter of Assam Oil Division of IOCL and is regarded as the birth place of the country's petroleum industry. It was in this region that the pioneers struck oil in the midst of dense jungle at a time when there was hardly any industrial development in the country. By an Act of the Parliament in 1981, the refining and marketing interest of the Assam Oil Company was vested with the IOCL and the Assam Oil Company as a division became full-fledged part of Indian Oil Corporation Limited as IOCL, Digboi Refinery.

REVIEW OF LITERATURE

A review of the past studies is useful to define concepts to show the theoretical basis and formulate the methodology unambiguously and objectively.

Forehands and Gilmer (1964) conducted a study on the evolution of organisational climate. The study found out that individual behavior could be more meaningfully understood if it was related to the behavioral environment as perceived and reacted by the employees. In other words, the climate was defined as an enduring organisational or situational characteristics perceived by the members of the organisation. Frederikson (1966) concluded that different organisational climate has different effects on human performance. The study summarised that the amount of administrative work in the stimulated job is more predictable in a climate that encouraged innovation than in one that encouraged standard procedures. Friedlander and Margulics (1969) studied organisational climate with an objective to determine the relationship between organisational climate and job satisfaction. The study revealed that organisational climate is a significant determinant of individual job satisfaction and this relationship varies with different types of climate. Baumgartel (1971) found out the contributing factors of organisational climate for leadership practices, communication practices and enduring systematic characteristics of working relationships among any person on any division of an organisation. Schneider and Hall (1972) in their study on organisational climate aimed to find out the interaction between personal and organisational characteristics and its relationship to organisational climate. The findings concluded that organisational climate is the phenomenon that represents an interaction between

personal and organisational characteristics. Dotlich and Kanarick (1984) found out the effect of organisational climate on job satisfaction and job performance. The study revealed that organisational climate is strongly related to employee satisfaction than that of job performance. Hystad, Bartone and Eid (2014) examined the positive organisational behavior theory to test workplace and individual factors that may affect safety climate in petroleum industry. The study explored the potential influence of authentic leadership style and psychological capital on safety climate and risk outcomes. The study accomplished the importance of leadership qualities as well as psychological factors in shaping a positive work safety climate. Haugsnes (2016) studied the relationship between organisational climate and work environment. The study revealed that positive organisational climate provided job support which strengthened work environment. Schneider et al. (2017) attempted to study the history about organisational climate and organisational culture. The study highlighted the reflections of four main periods of organisational climate which are the Pre-1971 Era, with pioneering work on exploring conceptualisation and operationalisation of climate constructs, the 1971-1985 Era with foundational work on aggregation issue, outcomes-focused climate on safety and service and early writings, the 1986-1999 Era characterised solidification of a focused climate approach to understand organisational processes and outcomes and beginning of the survey approaches and the 2000-2014 Era, characterised by multilevel work on climate, climate strength, demonstrated validity for climate approach outcomes and processes and the relationship between leadership and climate and culture.

Ekvall (1996) pointed out ten dimensions of organisational climate, which are characteristics of climate and in a way reflect the possibility for certain creative behaviour that enables change and innovation. The link between creativity, climate and innovation which is proposed by Ekvall is supported by the theory of Amabile et al. (1996). Climate or the work environment as called by Amabile et al. (1996), influences the level and frequency of creative behaviour. Creative behaviour is the beginning and necessary condition for innovation (Amabile et al. 1996). The Creative Climate Questionnaire (CCQ) by Ekvall tries to measure the degree in which the dimensions are present and creativity is able to flourish. The dimensions of organisational climate under CCQ are Challenge/Involvement, Freedom, Idea support, Trust/Openness, Playfulness/Pleasantry, Dynamism/ Liveliness, Debates, Conflicts, Risk taking and Idea time.

Therefore, organisational climate refers to the recurring patterns of behaviour exhibited in the day-to-day environment of the organisation, as experienced, understood and interpreted by the employees within the organisation.

The ten dimensions of CCQ were further tested on reliability and validity by Isaksen, Ekvall, Laurer and Britz (2001). This resulted in a list of nine dimensions and improvised to a questionnaire called the Situational Outlook questionnaire (SOQ), excluding the tenth dimension "dynamism/ liveliness".

NEED OF THE STUDY

From the various literatures reviewed, it has been observed that studies on organisational climate have been envisaged on various spheres. Besides, research studies had attempted to examine the relationship between organisational climate and organisational structure, perception and counterproductive behaviour. But, there is no in-depth study on the organisational climate in oil sector especially in Indian Oil Corporation Ltd. (IOCL). The presence of a favourable climate attracts huge capital and increases managerial effectiveness. Since late eighties, in the petroleum sector, IOCL had spread their wings and contributed tremendously to the Indian economy. Hence, it is appropriate to study whether the employees in IOCL perceive the organisational climate favourably or not. Keeping in view the aforesaid set-up, the topic is considered for the study.

OBJECTIVES OF THE STUDY

The objectives of the study are

1. To acclimatise the dimensions of organisational climate
2. To measure the dimensions of organisational climate in IOCL, Digboi Refinery.

RESEARCH METHODOLOGY

a) POPULATION AND SAMPLING FRAME

The research population of the study comprises of all the non-executive employees of IOCL, Digboi Refinery. The respondents were selected through stratified random sampling method. There are 1575 number of employees, out of which the number of executives are 325 and number of non-executives are 1250 as on 14th November, 2014. The non-executive level employees include Junior Engineers, Accountants, Clerks, Operators, Nurses, Refinery Workers and Security Guards (IOCL Manual, 2014). The sample size consists of 20 per cent of each of these individual groups, which represents the 20 percent of the non-executive employees of the organisation. Therefore, a total of 250 non-executive employees represent the sample size of the study.

b) VARIABLES CONSIDERED

The dimensions of organisational climate are being measured by using the most commonly used SOQ. The variables considered to measure the various dimensions of organisational climate are challenge/involvement, freedom, trust/ openness, idea time, playfulness/humour, conflict, idea support, debate and risk taking.

c) DATA COLLECTION

The study was conducted through primary and secondary data. Primary data was collected from the sampled respondents through a well-designed questionnaire. The sources of secondary data were the administrative and personnel manuals of IOCL, journals, magazines, various survey reports, research papers, published and unpublished dissertations, theses etc.

DISCUSSION ON THE DIMENSIONAL MEASUREMENT OF ORGANISATIONAL CLIMATE

As mentioned above, the present study has adopted SOQ. The relevant variables have taken into account to analyse the dimensions of organisational climate. By using Four Point Likert Scale, the data relevant to the items under the nine dimensions were collected and have been measured. The following Table 1 highlights the descriptive statistics of organisational climate in the organisation of study from non-executives' point of view.

TABLE 1: DESCRIPTIVE STATISTICS OF ORGANISATIONAL CLIMATE (Non-Executives' point of view)

	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
MeanD1	250	1.71	2.14	1.9606	.00572	.09051
MeanD2	250	1.50	1.83	1.7140	.00512	.08102
MeanD3	250	2.00	2.40	2.0600	.00624	.09858
MeanD4	250	.83	1.50	1.4893	.00530	.08382
MeanD5	250	1.33	1.67	1.3387	.00265	.04191
MeanD6	250	.83	2.00	.8520	.00928	.14668
MeanD7	250	1.80	2.60	2.5872	.00636	.10058
MeanD8	250	1.67	2.50	2.4867	.00663	.10477
MeanD9	250	.40	.80	.6320	.00706	.11165
Overallmean	250	1.59	1.73	1.6746	.00142	.02251
Valid N (list- wise)	250					

Source: Researchers' calculation

Where, D1 = Challenge, D2 = Freedom, D3 = Trust, D4 = Idea time, D5 = Playfulness, D6 = Conflict, D7 = Idea support, D8 = Debate and D9 = Risk taking.

Again, Table 2 draws the allotted scores with percentage on the dimensions of organisational climate of the sampled non-executive employees.

TABLE 2: ALLOTTED SCORES WITH PERCENTAGE ON THE DIMENSIONS OF ORGANISATIONAL CLIMATE (Non-Executives' point of view)

N=250	Challenge	Freedom	Trust	Idea time	Playfulness	Conflict	Idea support	Debate	Risk taking
Total Allotted Score	3431	2571	2575	2234	2008	1278	3234	3730	790
Percentage	65.35	57.13	68.67	49.64	44.62	28.40	86.24	82.89	21.07
Overall Percentage	56.03								

Source: Researchers' Calculation

Based on the above mean value and percentage of each dimension of organisational climate, the ranking of these dimensions are shown in Table 3.

TABLE 3: RANKING OF THE DIMENSIONS OF ORGANISATIONAL CLIMATE FROM NON-EXECUTIVES' POINT OF VIEW

Sl. No.	Dimensions of Organisational Climate	Ranking
1	Idea support	1
2	Debate	2
3	Trust/openness	3
4	Challenge	4
5	Freedom	5
6	Idea time	6
7	Playfulness	7
8	Conflict	8
9	Risk taking	9

Source: Researchers' Calculation

FINDINGS

From the review of literature, it was acclimatised that the nine dimensions supporting the study for the organisational climate in IOCL, Digboi Refinery, Assam, are challenge, freedom, trust, playfulness, idea support, idea time, debate, conflict, and risk-taking.

The mean value of overall organisational climate is 1.67 (s.d = 0.023, s.e = 0.001). Likewise the mean value of Challenge (D1) is 1.96, Freedom (D2) is 1.71, Trust (D3) is 2.06, Idea time (D4) is 1.49, Playfulness (D5) is 1.34, Conflict (D6) is 0.85, Idea support (D7) is 2.59, Debate (D8) is 2.49 and Risk taking (D9) is 0.63. Considerably, the distribution of mean values of nine dimensions differs markedly from the overall mean. However, the mean of D1, D2, D3, D7 and D8 are higher than the overall mean score. Therefore, these five dimensions of organisational climate have higher impact to the perceived organisational climate of non-executive employees. The overall percentage of the dimensions of organisational climate is 56.03 per cent. Based on Table 2, the dimensions namely Idea support (D7) = 86.24%, Debate (D8) = 82.89%, Trust/Openness (D3) = 68.67%, Challenge (D1) = 65.35% and Freedom (D2) = 57.13% have higher impact on the perceived organisational climate. But, Idea time (D4) = 49.64%, Playfulness (D5) = 44.62%, Conflict (D6) = 28.40% and Risk taking (D9) = 29.07% are having lesser impact on the perceived organisational climate of the non-executive employees in the organisation. These findings are aligned with the findings from Table 1.

From the above analyses of nine dimensions of organisational climate, it was found out that there exists a better climate in IOCL, Digboi Refinery from the non-executive employees' point of view.

However, Idea time, Playfulness, Conflict and Risk taking are having lower influence to the organisational climate. Therefore, these dimensions are considered to be the "not good" dimensions for organisational climate of the organisation. But, the other dimensions namely Debate, Trust/openness, Challenge, Freedom and Idea Support are considered to be the "good" dimensions.

RECOMMENDATIONS, SUGGESTIONS AND CONCLUSIONS

Considering the nine dimensions of organisational climate and measuring the same, it is brought into being that a positive organisational climate is prevailed in the organisation under study. But, there still exists four dimensions namely "idea time", "playfulness", "conflict" and "risk taking" which cannot be considered as "satisfactory" as the four dimensions are not causal positive influence in bringing up the good organisational climate.

A good amount of time may be provided to the employees for elaborating new ideas. Playfulness is beneficial to the organisation to achieve organisational goal. Being cognisant of humorous interplay will help employees to understand the relationships between workers and between workers and management. Again, conflict management in the organisation is to be taken care of. Proper and timely management of conflict will decrease the conflict rate in the organisation thereby the personnel role-play in the organisation will accelerate. The finding of the present study regarding "conflict" as one of the weak dimensions of organisational climate, is aligned with the findings of Nordin, Sivapalan, Bhattacharyya, Hezlina, Ahmad and Abdullah (2014)

When the personnel role-play in the organisation has increased due to less and no conflict between the employees and between the employees & employer; co-operation and communication will be increased. Subsequently, the employees of the organisation should feel belongingness to the organisation and risk will be taken by them. When the organisational risk has mitigated through this strategy, the management of the organisation can take effective and efficient decision. Management may also change the procedures or approaches to improve the employees' position through the participation of both executive and non-executives in debate. To improve the climate of the organisation, the management should provide and encourage innovative ideas, which usually avoid confusions and uncertainties.

LIMITATION

The study is limited on the study of organisational climate from non-executive point of view. It is also limited that the study was conducted only on IOCL, Digboi Refinery.

SCOPE OF FURTHER RESEARCH

Further research can be conducted in all the IOCL Refineries in Assam. Employees' commitment to the organisation and its relationship with organisational climate may also be considered as the objective(s) of further research.

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IMPACT OF INCLUSION AND EXCLUSION STOCK FROM LQ45 INDEX TOWARD THE STOCK PERFORMANCE

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ABSTRACT

The LQ45 index is one of the stock market indexes in the Indonesian Stock Exchange (IDX). The LQ45 index consists of 45 selected stocks that meet several criteria, such as stocks with the highest market capitalization, stocks with the highest transaction value and frequency; stocks have good financial conditions and prospect of growth. Every six month, IDX evaluates the performance of the listed stocks in the LQ45. If a stock within the index does not fulfill the regulated criteria, the stock will be replaced on the next cycle of stock selection. The addition or deletion of stock from the LQ45 index will give the impact to the stock's performance. The study aims to analyze the impact of inclusion (addition) and exclusion (deletion) of stocks form the LQ45. Mann-Whitney U test is used to test the performance of stock within period of pre and post announcement of LQ45 stock index changing. Furthermore, the correlation between stock liquidity, firm size and stock's age toward the abnormal return is analyzed. This study uses data of stock listed or delisted from LQ45 index in the period 2011-2015. The result of this study shows that abnormal return is different only for the delisted stock from LQ45 and shadow cost as the proxies of investor reaction is not different both for the listed and delisted stock from LQ45. The result of correlation coefficient implies that the firm's size and the stock's age have significant impact to abnormal return of stocks inclusion in LQ45 stock index, yet only firm's size affects to abnormal return of the stocks exclusion from LQ45 stock index.

KEYWORDS

abnormal return, cumulative abnormal return, investor reaction, shadow cost.

INTRODUCTION

Composite index is the indicator of stock performance in the stock exchange that provides overview regarding trading trend and stock return. In addition, the Indonesian Stock Exchange Authority (IDX) also publish LQ45 index which consists of 45 selected stocks that meet several criteria, such as stocks with the highest market capitalization, stocks with the highest transaction value and frequency, stocks have good financial conditions and prospect of growth. The LQ45 index, which was launched in February 1997, is a market capitalization-weighted index that captures the performance of 45 most liquid companies listed on the Indonesia Stock Exchange. The LQ45 index covers at least 70% of the stock market capitalization and transaction value in the Indonesia Stock Market. Every six month, IDX evaluates the performance of the listed stocks in the LQ45 Index. If a stock within the index does not fulfill the regulated criteria, the stock will be replaced on the next cycle of stock selection.

The changes in stock performance associated with a stock's inclusion and exclusion from the index had been widely investigated in the finance researches. Several previous studies have analyzed the impact of inclusion or exclusion of stock from the Index, likes Chen, Noronha and Singal (2004), there was a permanent increase in the stock price for the listed firms in the S&P 500 index. Meanwhile for the delisted firms from the S&P 500 index was no permanent decline in the stock price. Elliot, Van Nessa and Walker (2006) showed the changes of the stock liquidity; volume of transaction, stock return and the investor awareness due to stock's inclusion in the S&P 500 index. Blease and Paul (2010) showed that the increasing value occurred for the stock was listed in the S&P SmallCap and MindCap indexes in the period of the announcement date. Anton, Rodriguez and Alonso (2012) found the most of the stocks included in the Ibex35 tend to get positive returns, and the stocks excluded from the Ibex35 get negative returns. Febrian, Herwany and Primadhi (2014) showed the market reacts positively to stock newly included in the Jakarta Islamic Index (JII), which is in line with the reaction to stock added in the conventional indices.

This study aims to examine the impact of inclusion and exclusion of stock from the LQ45 Index towards stock performance in the period of 2011-2015. The data used in this study are secondary data in the form of daily stock's price, volume of transaction from 2011 to 2015, which were obtained from Indonesia Data Exchange (IDX).

This study is expected to give an overview related to impact of inclusion and exclusion of stock from the LQ45 index toward its performance. The result could be useful for academicians who are interested to study further on stock market and stock's performance especially. Furthermore, this result could help investors in optimizing their portfolio to provide a maximum return or minimize the risk. The result is also expected to be the subject of consideration for the issuer to maintain conditions that must be fulfilled by issuer to survive in the LQ45 Index.

REVIEW OF LITERATURE

Many researches have been conducted to analyze impact of inclusion and exclusion of stock from the indexes, such as Chen, Noronha and Singal (2004) examined the impact of changes of S&P 500 index toward stock's price. There was a permanent increase in the stock price for the listed firms in the S&P 500 Index but no permanent decline for deleted one. These results were at odds with extant explanations of the effects of index changes that imply asymmetric price responses to addition and deletions. A possible explanation for asymmetric price effects arose from the changes in investor awareness that it's contribute to the asymmetric prices effect of S&P 500 index additions and deletions.

Elliot, Van Nessa and Walker (2006) investigated the increasing in stock value measured by the price pressure, downward-sloping demand curves, improved liquidity, improved operating performance and increased investor awareness due to stock's inclusion in the S&P 500 index. The result showed that increased investor awareness is the primary factor behind the cross-section of abnormal announcement returns. Additionally, result also found some evidence of the temporary price pressure around the inclusion date.

Blease and Paul (2010) investigated the increasing in equity value surrounding addition to the S&P SmallCap and MidCap indexes from 1996 to 2003 and also investigated sources of the value gains. The result showed that following addition, there are significant increases in stocks liquidity and investor recognition, and

changes in these variables are impounded into the permanent components of announcement share price revisions. The study also found that changes in capital investment intensity are increasing in changes in stock liquidity, consistent with a reduction in the cost of capital following index addition.

Anton, Rodrigues and Alonso (2012) examined the importance for stock prices of a stock's inclusion and exclusion from the Spanish Ibex 35 from 2005 to 2009. The results showed that most of the stocks included in the Ibex 35 tend to get positive returns, which however is not greater on average than the cumulative negative return of the companies in which the price falls. Similarly, in the case of exclusions, although most of the stocks show a price decrease, its cumulative negative returns is not much higher than the positive accumulated return by the rest of the stocks.

Febrian, Herwany and Primadhi (2014), investigated the market reaction toward the index composition changes in both the Islamic index and the conventional index in the Indonesian Stock Exchange. The Islamic index is known as Jakarta Islamic Index (JII) and the conventional index consists of LQ45, Kompas100, Bisnis27, SriKehati and Pefindo25. The market reactions were measured by abnormal return, relative abnormal volume, relative abnormal frequency, and relative abnormal bid-ask spread around the announcement of index composition change. The result showed the market reacted positively to newly included stocks in the JII, which is in line with the reaction to stock added in conventional indexes. Similarly, the market responds to the stocks are excluded from the JII and from the conventional indexes in the same way.

OBJECTIVES

The main objectives of this study are:

1. To analyze the discrepancy abnormal return and investor reaction associated with the inclusion and exclusion stocks from the LQ45 index.
2. To analyze the correlation of the abnormal return with the stock liquidity, firm size and age of stock in the stock exchange.

HYPOTHESES

Hypotheses of the research are formulated based on previous literature, as follow:

1. There is a discrepancy the abnormal return in the period before and after the announcement date of LQ45 index change.
2. There is a significant correlation between abnormal return, stock liquidity, firm size and age of stock in the stock exchange.

RESEARCH METHODOLOGY

The data used in this research is daily stock closing prices, daily volume of transactions of the stocks listed and delisted from the LQ45 index obtained from Bloomberg over the period 2011 to 2015. Also data number of shareholders obtained from the Indonesian Central Security Depository. Similar to Febrian, Herwany and Primadhi (2014), to avoid the intervention of unexpected factor, we do not include data for stocks announcing dividends, stock splits, rights issue anytime in the examination period and similar to Blease and Paul (2010) we exclude firms that were delisted in the same fiscal year they were added in LQ45 Index. The final sample size 78 firms from 100 firms, consisting of 38 firms (from 50 firms before) added to the LQ45 index and 40 firms (from 50 firms before) deleted from the LQ45 index.

We used an event-study methodology to observe the abnormal return in the period of 5 days before and 5 days after the announcement date and also observe the investor reaction over the period a month before and 6 month after the announcement date.

The daily abnormal return (AR_{it}) for a specific day is calculated as the return of a stock (R_{it}) minus the return of the market LQ45 (R_m) on that day. It is calculated in as the follow:

$$AR_{it} = R_{it} - R_m$$

The daily stocks's return (R_{it}) is calculated in the following manner:

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}}$$

Where P_{it} is stock's closing price at time "t" and P_{it-1} is stock's closing price at time t-1. Meanwhile the daily market's return (R_m) is calculated in the following manner:

$$R_m = \frac{LQ45_t - LQ45_{t-1}}{LQ45_{t-1}}$$

Where $LQ45_t$ is closing rate of LQ45 index at time t, $LQ45_{t-1}$ is closing rate of LQ45 index at time t-1.

The investor reaction is measured by using the shadow cost. Following Blease and Paul (2010), we used the shadow cost as the proxies to investigate the investor reaction due to the change announcement of the LQ45 index composition. We construct the proxy variable for shadow cost as follows:

$$Shadow\ Cost = \frac{Residual\ Standard\ Deviation}{LQ45\ Market\ Capitalization} \times \frac{Firm\ Size}{Number\ of\ Shareholders}$$

Where firm size (market value of stock) and the LQ45 market capitalization is measured on the announcement date of the index change. In the pre-change period, number of shareholders is measured as close as possible to the announcement date; and for the post-change period, number of shareholders is measured at least six months after the announcement date to provide sufficient time for investor to change their portfolios and before the new period of LQ45 index change announcement. Residual return deviation is the difference between the firm's return and the LQ45 return in the six month period before the index change announcement for the pre-period, and in the 6 month period after the index change announcement for the post period.

We investigate the relation between abnormal return, stock liquidity, firm size and stock's age is listed in the exchange by OLS regression. The regression model refers to study or research conducted by Chen, Noronha and Singal (2004). Therefore, the regression model is formulated as follows:

$$ARit = \alpha + \beta_1 Relative\_Spread + \beta_2 LogILQ + \beta_3 Firm's\ Size + \beta_4 LogAge$$

TABLE 1: VARIABLE OF STUDY MEASUREMENT

Variable	Measurement
AR	Abnormal stock return = $AR_{it} = R_{it} - R_m$
Relative Spread	Relative bid ask spread = $\frac{\text{(best ask price-best bid price)}}{\text{(best ask price+best bid price)/2}}$
ILQ	Amihud's illiquidity = $\frac{\lvert r \rvert}{RpVol}$
Firm's Size	$\frac{\text{Stock's Market Capitalization}}{\text{LQ45 Market Capitalization}}$
Age	Stock's age is listed in the exchange

RESULT & DISCUSSION

ABNORMAL RETURN

The results for comparison of Abnormal Return (AR) occurring for each category can be seen in Table 2. Abnormal return for inclusion have the highest value in D-4 of 0.01486 with a downward trend until the date of announcement of LQ45 index change, even in D-2 the abnormal return is negative of -0.00413.

TABLE 2: ABNORMAL RETURN

Period	Mean	Mean	Statistic	Mean	Mean	Statistic
	H=	H=0	*Sig.*	H=	H=0	*Sig.*
	Inclusion to the LQ45 index			Exclusion to the LQ45 index		
H-5	-0,00176	0,00084	0,57476	-0,00199	0,00217	0,75813
H-4	0,01486	0,00084	0,08648	0,00157	0,00217	0,58995
H-3	0,00961	0,00084	0,31857	0,00201	0,00217	0,41890
H-2	-0,00413	0,00084	0,10723	0,00045	0,00217	0,72898
H-1	0,00018	0,00084	0,26628	0,00082	0,00217	0,92334
H+1	0,00031	0,00084	0,57476	-0,01449	0,00217	**0,03263**
H+2	-0,00402	0,00084	0,34974	-0,00810	0,00217	**0,03853**
H+3	0,00445	0,00084	0,79507	-0,01048	0,00217	**0,03266**
H+4	0,00174	0,00084	0,73953	-0,01095	0,00217	0,02890
H+5	-0,00150	0,00084	0,82728	0,00082	0,00217	0,48840

Abnormal return in D-1 back to positive of 0.00018, it means the market start to anticipate the announcement of LQ45 index changes (Nokowati, 2013). Abnormal return at the announcement date (AD) is 0.00084 which higher than D-1 of 0.00018. The increase value of abnormal return in the period of LQ45 index change announcement can be interpreted that the market gives a positive reaction at the time. The abnormal return in D+1 is 0.00031 which lower than the announcement date of 0.00084, giving a picture that the market reaction to the LQ45 index change is short-term. The short-term reaction of the market is clarified by the change in abnormal return for the period of D+2 negatively of -0.00402, the abnormal return is corrected in D+3 positively of 0.00445 and then the trend of abnormal return decrease in D+4 of 0,00174 and negative at D+5 of -0,0015. Based on the results of statistical tests there is no difference in abnormal return before or after the announcement date with the abnormal return on the announcement date of LQ45 index changes, which marked by (α) sig. respectively > 0.05.

Abnormal return for the exclusion has the lowest value in the D+1 negatively of -0.01449 with the negative trend last until D+4. The abnormal return in D-1 is 0.00082 is higher than abnormal return in D-2 of 0.00045. This is an indication that the market is starting to anticipate the announcement of LQ45 index changes. According to (Manurung, 2013) in Nokowati (2015) that the good or bad information circulating before announcement date shall make the stock price rise or fall. The abnormal return at the announcement date is 0.00217, which is the highest positive level of abnormal return during the observation period for the exclusion category, it can be interpreted that the LQ45 index change information raises a positive market reaction and the market is able to absorb the information and react quickly. The market reaction is positive in the short-term, it can be seen from the value of abnormal return after the announcement date which decrease even there are negative in D+1 of -0.01449, D+2 of -0.00810, D+3 of -0.01048 and in D+4 of -0.01095, whereas in D+5 the value return to positive by 0.00082. Fluctuations in the level of abnormal return in the event window before and after the announcement of the LQ45 index changes (D-5 to D+5) gives a short-term overview of changes in the level of abnormal return of each issuer is affected by the information of the index change. These results are in line with research conducted by Nokowati (2015), Febrian (2013). Based on the result of statistical test that the significant difference of abnormal return in period before or after the announcement date compared to abnormal return on the announcement date (D=0) only happen in periods of D+1, D+2 and D+3, with sig. level respectively <0.05.

The results of abnormal return test in the short-term period indicate that the market is more affected by the information of stock's deletion from LQ45 index compared to the information of stock's addition in the LQ45 index.

Shadow Cost

Overview of test results for Shadow cost can be seen in Table 3. Based on the calculation of the shadow cost for the inclusion on the announcement period (M=0) in total amounted to 0.00005, and there are no differences with the period before the announcement (M-1) or the period of 6 months after the announcement (M+6). Shadow cost value for local shareholders amounted to 0.00018, have similar conditions to the value of shadow cost in total that is no differences in shadow cost value either in the M=0 period, the M-1 period and M+6 period. This result is in accordance with the statistical test results that no significant differences between the observed periods, with the sig. level respectively >0.05. However, it is different from the conditions for the shadow cost of foreign shareholders particularly for the period of 6 months after the announcement (M+6). Shadow cost of foreign shareholders in the M+6 period amounted to 0.00010 which lower when compared with the value of shadow cost in the M=0 period or M-1 period amounted to 0.00011. Thus for foreign shareholders there are decrease value of shadow cost 6 months after the announcement that indicates a positive reaction to the foreign markets that could be caused by their reaction in anticipation of index changes which will be announced by the Indonesian Stock Exchange authorities. These results are in accordance with the study conducted by Chen et al (2004) and Becker and Donna (2010). However, referring to the test results there were no statistically significant differences between the observation periods of M=0 and M+6, by value of (α) sig. respectively >0.05.

TABLE 3: SHADOW COST

Category	**Local**		**Foreign**		**Total**	
	M-1	M+6	M-1	M+6	M-1	M+6
Inclusion to the LQ45 index						
Mean - M	0,00018	0,00018	0,00011	0,00010	0,00005	0,00005
Mean - M=0	0,00018	0,00018	0,00011	0,00011	0,00005	0,00005
Asymp. Sig.	0,90079	0,97514	0,95030	0,55375	0,95443	0,84757
Exclusion to the LQ45 index						
Mean - M	0,00013	0,00013	0,00004	0,00004	0,00002	0,00002
Mean - M=0	0,00014	0,00014	0,00004	0,00004	0,00002	0,00002
Asymp. Sig.	0,95396	0,81736	0,95013	0,96930	0,98848	0,90043

Shadow cost for the exclusion, in total have similar characteristics to the inclusion in the LQ45 index that is no difference in the value of shadow cost either in the period of announcement (M=0), the period prior to the announcement (M-1) and the period of 6 months after announcement (M+6) with the value of the shadow cost of 0.00002. Whereas, the shadow cost of foreign shareholders also have the same characteristics as the shadow cost in total, with a shadow cost value of 0.00004. This result is in accordance with the statistical test results that no significant differences between the observed periods, with the sig. level respectively >0.05. But for the shadow cost value of local shareholders have different value, that are in the M=0 period amounts to 0.00014, in the M-1 period and M+6 period amount to 0.00013, these results indicate that local shareholders react more in anticipation of changes in the LQ45 index. However, referring to the statistical test results there are no significant differences between the observation period, by value of (α) sig. respectively >0.05.

RELATIONS BETWEEN STOCK ABNORMAL RETURN WITH STOCK LIQUIDITY, FIRM SIZE AND AGE OF STOCK IN THE STOCK MARKET

Testing results of abnormal return relations to stock liquidity, the Firm Size (FS) and the stock's age (SA). The stock liquidity is represented by relative bid-ask spread (RS) and Amihud's Illiquidity (ILQ). Relative bid-as spread (RS) is the quotient between the difference of the best ask price and the best bid price with the midpoint bid price of selling and buying and Amihud's Illiquidity (ILQ) as quotient between the absolute return value of the stock on a particular day (| r |) with Rupiah value of stock trading volume on a particular day (RpVol). Firm's size is the relative value of market capitalization to the value of LQ45 capitalization and the stock's age (Age) is the stock's listed in the exchange, can be seen in table 4.

TABLE 4: RELATIONS BETWEEN STOCK ABNORMAL RETURN WITH STOCK LIQUIDITY, FIRM SIZE AND AGE OF STOCK IN THE STOCK MARKET

	Variable	Inclusion to the LQ45 index		Exclusion to the LQ45 index	
		Coeff	Sig.	Coeff	Sig.
	Constant	-0,0081	0,0012	-0,0075	0,0928
Relative bid-ask Spread	RBS	-0,1107	0,3081	0,0893	0,2730
Amihud's Illiquidity	ILQ (Log)	0,0000	0,7406	-0,0001	0,2394
Firm size	RS	295,45	0,0000	265,08	0,0000
Stock's age	Age (Log)	0,0014	0,0431	0,0010	0,3911

The table 4 shows, for the inclusion category, the variable of firm's size and the stock's age has a significant effect on the abnormal return value of the stock with a tolerance level of error (α) of 1% for the variable of firm size and the tolerance level of error (α) of 5% for the variable of stock's age. Liquidity variables namely relative bid-ask spread and Amihud's illiquidity based on the significant test results did not reveal any effect on the abnormal return.

The variable of firm size in the inclusion category has a coefficient value of 295.45 with significant value of 0.0000 at (α) of 1%. Positive coefficient value shows positive or unidirectional correlation or relationship between the abnormal return to the firm's size. The increase in the firm's size value will affect the increase of abnormal return. The results are different from the results of study conducted by Chen et al (2004) to a group of stocks that enter/exit in the S&P 500 index, with the result that the firm's size had negative correlation with abnormal return.

The variable of the stock's age in the inclusion category has a coefficient value of 0.0014 with the significant value of 0.0431 at (α) of 5%. Positive coefficient values describe the positive correlation between the stock's age with the abnormal return. An increase in the period (age) of the issuer from the first time listed on the stock exchange until the test is performed and expressed in the percentage of age increase will affect the addition of abnormal return of 0.0014. The results of this study are consistent with the study conducted by Haningsih (2014), but different to the study conducted by Chen et al (2004).

Whereas, with reference to Table 4 for the exclusion category, there is only one variable that significantly influence the abnormal return of stock that occurs which is the variable firm's size with error tolerance level (α) of 1%. Relative bid-ask spread variable, Amihud's illiquidity and stock's age variable, based on the significant test results did not reveal any effect on the abnormal return. Firm's size variable in the group of issuers exiting the LQ45 index has a coefficient value of 265.08 with significant value of 0.0000 at (α) of 1%, illustrating positive or unidirectional correlation or relationship between the abnormal return of stock with the firm's size of the stock. This result is similar to the testing result for the inclusion category to the LQ45 index.

RECOMMENDATION / SUGGESTION

INVESTORS

Managerial implications that can be given from the results of this study is that the investors understand the effects arising from the information of LQ45 index changes can be used as a consideration in adjusting the investment portfolio on stock instruments conducted, so it is expected to provide a maximum rate of return or can minimize the risks to be borne by investors. Investors should perform observation on period where positive return occurs either for the category of issuers entering (inclusion) and the category of issuers exiting (exclusion) the LQ45 index. Age of stock listed in the stock exchange gives a positive influence on the stock return value, so the stock's age information is information that should be considered by investors in considering the investment portfolio conducted.

ISSUER (COMPANY)

Change in issuer's status, both for issuers entering (inclusion) and exiting (exclusion) the LQ45 index give effect to the stock market value of the issuer triggered by the decrease or increase in the stock market price and decrease or increase of the stock liquidity, or changes in the number of shareholders. In addition, the issuer must maintain the performance of the financial condition to remain in good condition and able to maintain positive growth which is a criterion that must be fulfilled by issuer to survive in the group of LQ45 index.

CONCLUSIONS

Based on test results of abnormal return for the group of issuers entering (inclusion) the LQ45 index, there are no differences in the level of abnormal return of stock in the period before and after the announcement. As for the group of issuers exiting (exclusion) the LQ45 index, there is a difference in the level of abnormal return for the period after the announcement. These results indicate that the influence of LQ45 index changes information to the level of abnormal return of stock only affect the group of issuers exiting the LQ45 index.

The test results of the investor reaction level as measured by the shadow cost proxies show that there is no difference in the investor reaction level in the periods before and after the announcement, both on the group of inclusion or exclusion from the LQ45 index.

The test results of the relationship of abnormal return of stock over the stock liquidity level, the firm's size and the stock's age in the stock market for the category of inclusion the LQ45 index is the variable of firm's size and the stock's age has a significant effect on abnormal return with an error tolerance level (α) of 1% for the variable of firm's size and the error tolerance level (α) of 5% for the variable of stock's age. Liquidity variables namely relative bid-ask spread and Amihud's illiquidity, based on the significant test results did not reveal any effect on the abnormal return. Whereas, for the category of exclusion the LQ45 index, there is only one variable that significantly influence the abnormal return of stock that occurs which is the variable of the firm's size with error tolerance level (α) of 1%. The variable of relative bid-ask spread, Amihud's illiquidity and stock's age based on the significant test results did not reveal any effect on the value of the abnormal return.

LIMITATIONS

This study is limited to the group of issuers that entering and exiting the calculation of LQ45 index based on the announcement of changes in LQ45 index composition over the period 2011-2015 as measured against the level of abnormal return, stock liquidity and investor reaction.

SCOPE FOR FURTHER RESEARCH

Based on the above mentioned, for further study, it is suggested to perform tests on the issuers that persist in LQ45 index calculation after the announcement of the issuer composition changes of the LQ45 index and to further examined the difference with the group of stocks entering and exiting the LQ45 index calculation. The study on investor reaction variable based on the composition of securities ownership can be done in more detail not only referring to the investor's status (foreign investor and local investor) as in this study, but more detailed to the type of investors whether individual, mutual fund, company, insurance, securities companies, pension funds, banks or foundations.

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SEGMENTING THE INDIAN STATES ON THE BASIS OF PERFORMANCE INDICATORS OF NATIONAL AGRICULTURE INSURANCE SCHEME – A CLUSTER APPROACH

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ABSTRACT

The necessity to shield farmers against high fluctuations in yields and prices in agriculture has been continuing concern of agricultural policy. In India, agriculture insurance is one of the instruments for protecting farmers from wide agricultural variability. Despite various schemes launched from time to time in the country, agriculture insurance has served very restricted purpose. The coverage with respect to area, number of farmers and value of agricultural output is very small, compensation of insurance based on area approach disaffected farmers outside the compensated area, and most of the schemes are not viable. Unless the programme is restructured carefully to improve its viability, the prospects of its future expansion to include and impact more farmers are remote. This requires renewed efforts by government in terms of designing suitable mechanisms and providing pecuniary support for agriculture insurance. Providing similar help to private sector insurers would facilitate in escalating insurance coverage and in improving viability of the insurance schemes over time. In the present study, an attempt has been made to divide the states of India in various clusters depending upon the performance indicators of National Agriculture Insurance Scheme such as farmers insured, area assured, sum assured, premium, subsidy, claim and farmers benefitted.

KEYWORDS

farmers, agriculture, insurance, risk, cluster.

INTRODUCTION

Various natural disasters such as floods, storms, droughts, landslides, cyclones, and earthquakes affect the agriculture production in India. The outbreak of epidemics and man-made disasters such as fire, sale of spurious seeds, fertilisers and pesticides, etc. also makes the agriculture production more vulnerable. The consequences of all these events severely affect the farmers through loss in production and farm income, which are beyond their control. The magnitude of loss due to unfavourable eventualities is increasing with the growing commercialisation of agriculture. In some extreme cases, these harsh events become one of the factors resulting to farmer's suicides, which are now assuming serious proportions.

Agriculture insurance is considered as important mechanism to effectively address the risk to production and income from various natural and man-made events. Agriculture insurance is a means of protecting the farmers against financial losses due to uncertainties arising from named or unforeseen perils beyond their control (AIC, 2008). Unfortunately, agriculture insurance in the country has not made much advance even though the need to protect Indian farmers from agriculture variability has been a continuous concern of India's agriculture policy.

A Central Sector Scheme namely, National Agricultural Insurance Scheme (NAIS) is implemented in India since Rabi 1999-2000, as a part of risk management in agriculture with the aim of providing financial support to the farmers in the event of failure of crops as a result of natural calamities and diseases. The insurance scheme is offered to all the farmers – loanee and non-loanee, irrespective of their size of holding. The scheme is voluntary for non-loanee farmers whereas loanee farmers are covered on compulsory basis in a notified area for notified crops.

The Scheme envisages coverage of all the food crops (cereals, millets and pulses), annual commercial/horticultural crops and oilseeds, in respect of which past yield data is available for adequate number of years. The premium rates vary between 1.5% and 3.5% percent (of sum insured) for food and oilseed crops. Actuarial rates are being charged in case of commercial/horticultural crops. Under the scheme, at present, 10% subsidy in premium is available to small and marginal farmers. It is a yield guarantee scheme operating on "Area approach" basis. Any unit area of insurance i.e. block, tehsil, gram panchayat etc. can be notified by the implementing States/UTs with the outlook of availability of past yield data and capacity of the State to undertake requisite number of Crop Cutting Experiments (CCEs). The State Government/UT Administration is required to notify areas/crops well in advance of the each crop season and issue the necessary notification/instructions to all financial institutes provide data for past yield and also conduct the required number of CCEs in each notified areas for assessment of crop loss.

If actual average yield per hectare of the insured crop for the defined area in the assured season, falls short of specified Threshold yield, then all the insured farmers growing that crop in the defined area are deemed to have suffered deficit in the yield and the scheme provides coverage against such eventuality. The indemnity claims are worked out by the Agriculture Insurance Company (AIC) of India Ltd., which is the implementing agency, on the basis of yield data, based on required number of Crop Cutting Experiments, conducted by the implementing State/UT. The claims are released to banks and further banks credit the amount in the account of beneficiary farmers. Financial liabilities towards claims beyond 100% of premium for food crops and oilseeds and 150% of premium for annual horticultural/commercial crops in conjunction with 10% premium subsidy to small and marginal farmers. Bank Service charge is to be borne by the Government and is shared equally by both Central Government and respective State Government.

The scheme is optional for States/UTs. At present, the scheme is implemented by the 26 States and 2 Union Territories namely Andhra Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Odisha, Rajasthan, Sikkim, Tamil Nadu, Telangana, Tripura, Uttar Pradesh, Uttarakhand, West Bengal, Andaman & Nicobar Islands and Puducherry. The scheme is demand driven. However, the performance of the scheme can be measured in terms of farmers/area covered, sum insured, premium collected, claims paid and farmers benefitted.

LITERATURE REVIEW

Dandekar (1976) recommended that crop insurance should be linked with credit on a compulsory basis. He found that crop insurance scheme offered insurance against a probable occurrence. The chance phenomenon underlying a crop insurance scheme is the fluctuations in the yield of a crop from one year to another or from one crop season to another.

Binswanger (1980), after studying the threat in agricultural investments, risk averting tendencies of the farmers and existing strategies for changing risk, concludes that farmers' own mechanisms for loss management or risk dissemination are very costly in arid and semi-arid regions.

Jodha (1981) argued that farmers' own measures to reduce the risk in farming in semi-arid tropical India were expensive and relatively ineffective in reducing risk in farming and to fiddle with scarcity and drought conditions. Jodha found that the riskiness of farming impinges upon the investment in agriculture resulting to suboptimal allocation of resources. He also found that official credit institutions are ill equipped to decrease the revelation of Indian farmers to risks because they cannot or do not provide consumption loans to drought-affected farmers.

Subrahmanian (1984) suggested that premium rates should be revised once a year based on the cost of cultivation and the long-term average yield. In India, coverage is calculated as a percentage of the long-term average alone but it is better to reach at the coverage level on the basis of cost of cultivation and price per unit of output along with the long-term average yield.

Dandekar (1985) observed that the crop insurance scheme is based on the area approach and that a *block*/*tehsil* is taken to be the area. Indemnities to be paid to farmers in the area are calculated on the basis of the average yield for the area whereas the variations in the yield within the area are ignored. This method is considered unsatisfactory.

According to the **National Agriculture Policy (2000)**, "Despite technological and economic advancements, the condition of farmer continues to be unstable due to natural calamities and price fluctuations". The impact of this inconsistency is highlighted in drought years with news of farmer suicides from agriculture variability.

Bhende (2002) found that an accurately designed and implemented crop insurance program will shield the several vulnerable small and marginal farmers from adversity, fetch stability in the farm incomes and increase the farm production.

Sinha, Sidharth (2005), found agriculture insurance be improved by increase in the precision and timeliness of crop estimation methods achievable through the use of novel technologies. This is required to be supplemented by institution and operating procedures that enable the private sector to provide agriculture insurance.

Narayanan, H. (2006), reports that agriculture insurance is intended to play significant role in managing the risk of the agriculture sector, whose involvement in the development of economy is considerable. The role of agriculture insurance for India can never be underplayed.

Raju and Chand (2008) studied problems and prospects of agricultural insurance in India. State wise results showed that only in the states where irrigation is very dependable, it helped in lowering the risk. Those states where irrigation is not very dependable carry on to face elevated risk. In some states, farmers are exposed to twin problem of very low productivity along with high risk of production.

Singh (2010) discussed the dependence of Indian agriculture on uncertain rains. He then argued on the necessity for crop insurance as an alternative to manage production risk. It is followed by the discussion on the currently offered crop insurance products for particular crops and regions. It elaborates at length the two significant products, namely, National Agricultural Insurance Scheme and Weather Based Insurance Scheme.

Lall, Singh and Tripathi (2011) traced the problems related with agriculture insurance agencies, entrepreneurs and farmers, to discover risk in agribusiness, to be acquainted with performance of Agriculture insurance schemes in India, function of agriculture insurance schemes in shielding farmers from agricultural inconsistency, and the key problems in crop insurance and National Agriculture Insurance Scheme (NAIS).

Rathore, Burark and Jain (2011) analysed the accomplishments of crop insurance scheme on beneficiary and non-beneficiary farms in Salumber tehsil of Udaipur district during 2008-09. The study revealed that farm income per family is higher side of beneficiary farms as compared to non-beneficiary farms. The advancement of crop insurance scheme in Rajasthan has been found optimistic, as is proved through compound and linear growth rates.

Deshmukh and Khatri (2012) discussed the evolution of agricultural insurance in India and its critical evaluation. The over dependence of Indian agriculture on uncertain rains during monsoon, creates exposure to risk and uncertainty. It describes various types of risks concerned and agricultural insurance as one of the risk mitigation mechanisms in agriculture to save it from natural perils. A comparative study exhibited the accomplishments of agricultural insurance schemes run by GOI hitherto.

OBJECTIVE OF THE STUDY

To segmentize the Indian states on the basis of performance indicators of National Agriculture Insurance Scheme (NAIS).

HYPOTHESIS OF THE STUDY

Ho : There is no relationship amongst the Indian states on the basis of performance indicators of National Agriculture Insurance Scheme (NAIS).

RESEARCH METHODOLOGY

The present study involves secondary data collected from the various websites and portals related to NAIS, Agriculture Insurance Company, etc. SPSS software was used to analyse the data.

The analysis of the study is performed using K-means Cluster Approach. The objective of cluster approach is to group observations or variables into homogeneous and distinct clusters or categories. This method is being used as large data sets are involved. It will also provide the flexibility of moving a subject from one cluster to another.

In this study, the main benefit to use cluster analysis is that it will allow us to group similar states together and identify patterns between them. It will help reveal associations between the factors affecting the NAIS and help to outline structure, which might not have been apparent previously.

DATA ANALYSIS AND INTERPRETATION

The K-means cluster analysis approach is used for grouping the various participant states of India with reference to the performance indicators of National Agriculture Insurance Scheme (NAIS).

TABLE 1: INITIAL CLUSTER CENTERS

	Cluster			
	1	2	3	4
Zscore: FARMERSINSURED	2.13548	-.72457	1.34767	2.74213
Zscore: AREAASSURED	3.50378	-.64472	1.00654	1.08889
Zscore: SUMASSURED	2.52191	-.68886	1.16116	.80518
Zscore: PREMIUM	2.58944	-.66680	.53957	1.43397
Zscore: SUBSIDY	-.01449	-.55986	.02773	2.98729
Zscore: CLAIM	1.74965	-.68413	-.01204	.99402
Zscore: FARMERSBENEFITTED	1.54007	-.74857	.85231	3.07469

Table 1 indicates the Initial Cluster Centers. This table shows the seed points for the start of the analysis for those clusters which relative fall apart on the clustering variables, viz. farmers insured, area assured, sum assured, premium, subsidy, claim and farmers benefitted. The values in this table are the Z-scores of the above said variables.

TABLE 2: ITERATION HISTORY

	Change in Cluster Centers			
Iteration	1	2	3	4
1	1.790	0.269	1.469	.000
2	.000	.099	.229	.000
3	.000	.101	.200	.000
4	.000	.000	.000	.000

Table 2 shows the changes in the cluster centers from one iteration to another. The final cluster was obtained after the fourth iteration.

TABLE 3: FINAL CLUSTER CENTERS

	Cluster			
	1	2	3	4
Zscore: FARMERSINSURED	1.55042	-.67661	.42905	2.74213
Zscore: AREAASSURED	2.14594	-.62447	.30810	1.08889
Zscore: SUMASSURED	2.35134	-.66210	.34181	.80518
Zscore: PREMIUM	2.40715	-.64563	.20933	1.43397
Zscore: SUBSIDY	.81494	-.54654	.41407	2.98729
Zscore: CLAIM	2.26388	-.65948	.34576	.99402
Zscore: FARMERSBENEFITTED	1.39338	-.68818	.46950	3.07469

Table 3 shows the Final Cluster Centers. This table indicates that Cluster 1 is significantly different in terms of farmers insured, area assured, sum assured, premium, subsidy, claims and farmers benefitted as compared to other three clusters. Cluster 1 includes Andhra Pradesh, Gujarat and Madhya Pradesh. It is very low in terms of subsidy as compared to Cluster 4.

Cluster 2 includes Assam, Goa, Haryana, Himachal Pradesh, Jharkhand, Kerala, Manipal, Meghalaya, Mizoram, Sikkim, Telangana, Tripura, Uttarakhand, Andaman & Nicobar Islands, Puducherry and Jammu & Kashmir. All the performance indicators of NAIS were found to be very low in these states.

In Cluster 3, states such as Bihar, Chattisgarh, Karnataka, Odisha, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal are included. In this cluster, the performance indicators relating to farmers insured, subsidy and farmers benefitted are significantly different from the other clusters.

Only Maharashtra falls under Cluster 4. The performance indicators are significantly different relating to farmers insured, subsidy and farmers benefitted.

TABLE 4: ANOVA

	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
Zscore: FARMERSINSURED	7.843	3	.145	24	54.215	.000
Zscore: AREAASSURED	7.333	3	.208	24	35.197	.000
Zscore: SUMASSURED	8.395	3	.076	24	110.910	.000
Zscore: PREMIUM	8.820	3	.023	24	391.515	.000
Zscore: SUBSIDY	5.689	3	.414	24	13.746	.000
Zscore: CLAIM	8.093	3	.113	24	71.371	.000
Zscore: FARMERSBENEFITTED	8.206	3	.099	24	82.722	.000

Table 4 indicates the variables, which are most important in the cluster solution. Mean square in the Cluster column indicates variances in the variable, which can be attributed to the cluster. Mean square in the Error column indicates variances in the variable, which cannot be attributed to the cluster. F-ratio indicates the ratio of cluster variance to error variance. Large F value indicates variables that are important for segregating the clusters. In this case, premium and sum assured have the maximum F value making them the most important factors for segregation. The p value indicates that the cluster groups are significantly different on all the variables such as farmers insured, area assured, sum assured, premium, subsidy, claim and farmers benefitted.

TABLE 5: CLUSTER MEMBERSHIP

Case Number	State	Cluster	Distance
1	1	1	.850
2	2	2	.051
3	3	3	1.271
4	4	3	1.397
5	5	2	.090
6	6	1	1.784
7	7	2	.040
8	8	2	.056
9	9	2	.958
10	10	3	.972
11	11	2	.043
12	12	1	1.790
13	13	4	.000
14	14	2	.081
15	15	2	.086
16	16	2	.091
17	17	3	.724
18	18	3	1.406
19	19	2	.091
20	20	3	1.961
21	21	2	.091
22	22	2	.088
23	23	3	1.592
24	24	2	.034
25	25	3	2.087
26	26	2	.089
27	27	2	.083
28	28	2	.084

Table 5 indicates cluster membership for each state. Distance column of this table tells the distance between the state and the cluster center. This distance is used to obtain some knowledge about the representation of the states for the concerned cluster. A small distance indicates that the state is a good representative of that cluster and large distance value indicates that the state is not a good representative of that cluster. In this case, Andhra Pradesh, Haryana, Odisha and Maharashtra are the best representatives of Cluster 1, 2, 3 and 4, respectively.

TABLE 6: NUMBER OF CASES IN EACH CLUSTER

Cluster 1	3.000
2	16.000
3	8.000
4	1.000
Valid	28.000
Missing	.000

Table 6 shows the number of states in each cluster. It indicates big mismatch in the proportional size of the cluster in the cluster solution. The study has observed three states in Cluster 1, 16 states in Cluster 2, 8 states in Cluster 3 and 1 state in Cluster 4. It shows that the states are performing very differently with respect to the performance indicators of NAIS.

CONCLUSION

The necessity to shield farmers against high fluctuations in yields and prices in agriculture has been continuing concern of agricultural policy. In India, agriculture insurance is one of the instruments for protecting farmers from wide agricultural variability. The present study has divided the states in four clusters depending upon the performance indicators of National Agriculture Insurance Scheme such as farmers insured, area assured, sum assured, premium, subsidy, claim and farmers benefitted. Out of all the mentioned performance indicators, premium and sum assured have the maximum F value making them the most important factors for segregation. The study also shows that Andhra Pradesh, Haryana, Odisha and Maharashtra are the best representatives of their respective clusters.

Despite progress of irrigation and improvement in infrastructure and communication, agriculture production and farm income remain highly vulnerable to natural events and market uncertainties. The risk is much higher for farm income than production. In a country where agriculture is at the clemency of the vagaries of monsoon and other factors beyond the control of the farmer, the importance of agricultural insurance is not in doubt and needs no emphasis. Insurance provides people with a reasonable degree of security and assertion that they will be sheltered in the incident of a calamity or failure of any sort.

Despite various schemes implemented from time to time in the country, agriculture insurance has served very limited purpose. The coverage in terms of area, number of farmers and worth of agricultural production is very small, payment of indemnity based on area approach disaffected farmers outside the compensated area, and most of the schemes are not viable. Expanding the coverage of crop insurance would therefore augment the government costs considerably. Unless the programme is restructured carefully to improve its viability, the prospects of its future expansion to include and impact more farmers are remote. This requires improved efforts by government with respect to designing suitable mechanisms and providing financial support for agriculture insurance. Providing related help to private sector insurers would help in escalating insurance coverage, and in getting better viability of the insurance schemes over time.

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