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NOTES FOR CONTRIBUTORS

Our global and political environment is bubbling with great hopes and aspirations of pink health and rising graph of Trade, Industry and Commerce all around. As such, it becomes my humble and honest duty, belonging to the world of academics, to interact and share with some instrumental guidelines for the contributors and participants in the forthcoming issues of the Indian Journal of Commerce.

Research along with its practical implications and usage and utility in the field of business studies has great relevance today. It is therefore, suggested that Papers based on application oriented research are more welcome; especially in the fields of industry, commerce, business studies and management areas. The papers must include tables, diagrams, illustrations and such other tools to support the different and divergent viewpoints. As such, the length of a paper including all these has to be cautiously controlled and should not exceed 20 double space pages. Short communications relating to review articles, report of various conferences, summary/views on several governments' reports, database issues etc. should also not exceed more than 5 double spaced pages and are invited to be published. We also welcome book-reviews and summary of Ph. D. dissertations but not in more than two double spaced pages. Care should be taken that whatever manuscripts are sent for publication in this journal should not have been published elsewhere any time before.

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Book : Singh, H. K. 2015. Mutual Funds Market. New Delhi: Kanishka publishers.

Journal Article : Singh, Meera 2015. Journal of Indian School of Political Economy. Jan-March,2015, Vol-22, Nos 1, pp 34-48.

Government Publication : Government of India, Ministry of Communications, Department of Telecommunications 2015. Annual report. New Delhi.

Chapter in a Book : Gilberto Mendoza, 2015, A Premier on Marketing Channels and Margins. Pages 257-276 in Prices, Products and People (Gregory J. Scott, ed.) London. Lynne Rienner Publishers.

All the manuscripts should be sent to **Prof. H.K.Singh, Managing Editor, The Indian Journal of Commerce, Banaras Hindu University, Faculty of Commerce, Banaras Hindu University, Varanasi 221005,** Mobile: 09415264509, E-mail: hksinghmeera@gmail.com • hksinghmeera@yahoo.co.in

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FROM THE DESK OF THE MANAGING EDITOR

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"Satisfaction does not come with achievement, but with effort. Full effort is full victory." -- Mahatma Gandhi. The same has been our experience related to ICA (Indian Commerce Association) and its prestigious journal the Indian Journal of Commerce. We have been successful in acquiring a beautiful piece of land at Greater Noida but sincere effort will lead to timely construction of ICA building. The journal has got vital acceptance and circulation in academic world but various indexing on the lines of **Scopus,** WoS (Web of Science), ICI (Indian Citation Index) indexing is required. Scopus is a bibliographic database containing abstracts and citations for academic journal articles. It covers nearly 22,000 titles from over 5,000 publishers, of which 20,000 are peer-reviewed journals in the scientific, technical, medical, and social sciences (including arts, business and humanities). **Web of Science** (previously known as **Web of Knowledge**) has been an online subscription-based scientific citation indexing service originally produced by the Institute for Scientific Information (ISI), for providing a comprehensive citation search. It provides prompt access to multiple databases that reference cross-disciplinary research, facilitating in-depth exploration of specialized sub-fields within an academic or scientific discipline. **Indian Citation Index (ICI**) is also an online bibliographic database containing abstracts and citations/references from academic journals for extensive search and analysis like comparing more than one institutions in terms of contribution (total articles published), subject area, and number of citation received etc. In our maiden attempt, the Indian Journal of Commerce will endeavor to be registered in Scopus indexing for attaining better attraction with various regulating agencies including UGC.

The Indian experience of tackling insurgency in Jammu & Kashmir, North East States etc. through demonetization are both varied and reach. Black money has been the parallel economy in our country. In a televised address on **November 8, 2016** by Indian Prime Minister Shri Narendra Modi, it was announced that banknotes of ₹500 and ₹1000 would cease to be legal tender from midnight. Automatic teller machines (ATM) at some places were closed on 9 and 10 November. Government organizations have brought out new notes. The Government of India had accepted the proposal of RBI in bringing out ₹2000 banknotes and a new version of the ₹500. Now, it's a great challenge for planners to formulate policies for inclusive growth to solve the problems of poverty, unemployment, backwardness, low productivity and standard of living.

69th All India Commerce Conference organized under the guidance of conference secretary Prof. Arvind Kumar, Dean Faculty of Commerce, Lucknow University was dedicated to efficacious, substantial and significant topics such as- (a) **Startup India**, (b) **Indian Financial System,** (c) **Globalization of Markets,** (d) **Tourism and Hospitality**, (e) **Women Empowerment, and** (f) **Empirical Researches in Accounting & Finance**. The EC of ICA decided to start one specific session exclusively for research scholars in the name of ICA Research Scholar Award so that they must get proper chance for deliberation. The present issue comprises the papers nominated for M.M. Shah

Memorial research gold medal and ICA research scholar awards for 69th AICC. I have an ardent hope that you all will be benefited with these research papers of the current issue and will revert with your valuable comments. The present issue attempts to address the issues of substantial and significant importance such as (a) Multi factor model of capital budgeting, (b) Key issues and challenges of BASEL III, (c) Performance evaluation and determinants of Mutual Funds, (d) Socio-economic impact of Micro Financing, (e) Growth, performance and efficiencies of RRBs in India, (f) Gender diversity and corporate reputation, and (g) Financial Literacy etc. We have made sincere attempts to facilitate our readers by including empirical and comprehensive research papers from diverse areas, so that topics of different fields must be available in this issue.

I express my sincere appreciation to our learned readers and community at large for the warm welcome and resounding support to the journal and ICA. We are working hard to better understand our readers and to deliver a valuable product to you on a regular basis with attractive layout of the journal. I expect all of you will continue to reach out to us any time through e-mail and mobile with feedback and suggestions for bringing out appropriate amendments in this reputed journal. As you all are aware, now our journal is completely an on-line journal, so you are requested to browse it through networks. I conclude by quoting few lines from Bhagwad Geeta,

krodhaadbhavati sammohah sammohaatsmritivibhramah |

smritibhramshaadbuddhinaasho buddhinaashaatpranashyati ||

(From anger comes delusion; from delusion, confused memory; from confused memory the ruin of reason; from ruin of reason, man finally perishes.)

Last but not the least I would like to quote a doha by famous Indian poet Kabir,

Kabira Kiya Kutch Na Hote Hai, Ankiya Sab Hoye

Jo Kiya Kutch Hote Hai, Karta Aur Koye

(All things happen as per Gods wish, it just seems that we are doing them.)

Prof. H.K. Singh

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Socio-Economic Impact of Micro Financing through Self-Help Groups in Mewat District: An Econometric Analysis

Tej Singh and Parul Mittal

ABSTRACT

Purpose: *To present overview of the salient socio-economic characteristics of the sample households and to analyze the impact of SHGs on employment and income level of the members.*

Design/Methodology/Approach*: The present study is empirical in nature as it is mainly based on primary data which was collected through interview schedule and FGD during field survey. A multistage random sampling method was adopted for the study. The collected data was analyzed with the help of various statistical tools like Frequency, Percentages, Means, Standard Deviations, and Coefficient of Variation. To prove the hypotheses, some tests like t-test (paired), Z test and Chi-square* ($a\text{-}^{2}$) *test also used in the study. The collected data was also analyzed with the help of Econometric Analysis (OLS Model) to measure the impact of microfinance programme.*

Findings*: The impact of SHGs on employment and income level of members was significant. Both the programmes had shown little difference in results. The average level of income earned form IGAs was higher in case of MDA in comparison to SGSY. SHGs helped members to increase their income level through economic activities for providing them better living conditions and making them independent. Thus, SHGs had positive impact on the employment and income of members. Microfinance programmes raised members above poverty line and enhanced their socio economic status.*

Research Implications/Limitations*: The study was considered only in one district of Haryana i.e. Mewat District.*

Practical Implications*: Contributes to the body of knowledge on impact and success of microfinance programme and its implications for government and non government agencies and organisations for policy formulation regarding microfinance.*

Originality/Value: *The paper identifies a framework of relevant values and facilities that will be of use to those interested in this field.*

Key words

Microfinance, SHGs, Income & Employment Level and Mewat.

INTRODUCTION

Microfinance refers to loan; saving, insurance, transfer services and other financial products targeted at low levels clients. Microfinance in India is mainly provided through Self-Help Groups (SHGs), Microfinance Institutions (MFIs) and some other methodologies. The network of many financial institutions like public and private sector commercial banks, co-operative banks, regional rural banks (RRBs) and MFIs is used to provide microfinance services to the poor people. Microfinance programme claims to provide the poor an access to capital and give them opportunities to climb the economic ladder[1]. Microfinance, by its name refers the whole journey of financial and non financial services which covers skill up gradation, entrepreneurship development rendered to the poor and needy people for the purpose of enabling them to overcome poverty.

National Bank for Agriculture and Rural Development (NABARD) defines micro-finance as: "provision of thrift, credit and other financial services and products of very small amounts to the poor in rural, semi-urban and urban areas for enabling them to raise their income levels and improve living standards" (NABARD, 2001).

In terms of demand of microcredit, there are 3 segments – at the very bottom, there are landless agriculture labourers and manual labourers. The next market segment is of small & marginal farmers and rural artisans, weavers and self-employed informal sectors such as hawkers, vendors, workers in household micro-enterprises. The third segment is of other farmers who have gone for commercial crops and other engaged in dairy farming, poultry, fisheries etc[2]. M-CRIL[3] provides an estimate for the annual demand at Rs. 480 billion with an average household credit demand of Rs. 8000. The RBI (2009) estimated that the overall demand for microfinance is around Rs. 200000 crores out of which only 10% is being met by existing MFIs and banks through the SBLP. On the Supply side, the Indian microfinance sector is characterized by a variety of microfinance service providers. These includes apex financial institutions like NABARD, SIDBI and government owned societies like RMK (Rashtriya Mahila Kosh), Commercial Banks, RRBs, formal sector financial institutions, Cooperatives societies, SHG federations, MACS, private sector companies, NBFCs, societies, trusts etc. New private sectors banks, most notably ICICI bank, but also AXIS bank and HDFC bank are actively seeking exposure in the microfinance sector. International banks such as ABN-Amro, City financial etc. is also showing interest in microfinance programme. In India, Micro Finance operates mainly through TWO channels i.e. SHGs – Bank Linkage Programme (SBLP) Model (SHGs) and Micro Finance Institutions (MFIs) (SHGs, JLG and Grameen Groups).

SHG is a registered or unregistered voluntary association of poor people of 10-20, from the same socio-economic background, involving primarily in saving and credit activities. It can be all women members group, all men members group or even a mixed group. SHG are also popularly called as DWACRA groups after the programme i.e. development of women and children in rural areas. However, over 90% of these are women members group. Savings, loans, loan-repayments are taken care of at the group level. These groups are in turn linked to a financial or a micro-finance institution for sourcing of additional funds as well as depositing their savings[4]. Best examples of this type of technology are the Self-Help Group Bank Linkage Programme in India, the Programme Hubungan Bank Danksm (PHBK) project in Indonesia, and the Chikola groups of K-REP in Kenya (Satish 2005).

REVIEW OF LITERATURE

For the purpose of better understanding, Review is presented in the tabular form.

Researchers	Objectives	State/ District	Conclusions of The Study
Kumaran (1997)	*To study the functioning of SHGs*	*Andhra Pradesh*	*Money contributed by members was pooled together and used a revolving fund to disburse loans on a priority basis. The members also started*
Puhazhendhi & Satyasai (2000)	*To examine the impact of microfinance on income level.*	*All over India (11 states)*	*33% rise in average annual income from pre to post SHG situation. 40% of this incremental income was generated by non-farm sector activities.*
Dahiya et al. (2001)	*To analyze the socio-economic status of working SHGs*	*Solan (HP)*	*The members were mainly involved in small business and service/ profession. There was a considerable increase in annual income in post- SHG period.*
Mishra et al (2001)	*To examine the impact of SHGs on generation of income and employment among beneficiaries.*	*Faizabad (UP)*	*The survey showed that SHGs have helped to increase the income of the participants by 10-15%.*
Nirmala et al. (2004)	*To study factor affecting the earning of SHGs.*	*Pondicherry*	*The study showed that around 80% of the SHG members had initiated IGAs and the majority of them were engaged in non-farm activities that were traditional and less remunerative.*
Sarangi (2007)	*Impact of microfinance on rural poor HH.*	*MP*	*Impact assessment result showed the significant positive effect of programme participation on increase in the income of the HH. He concluded that credit to serve as a sole instrument of poverty alleviation did not seem to be plausible, without other corroborative mechanism that help in increasing the potential of credit use by the poor or the small farmers.*
Bansal (2010)	*Impact of microfinance on poverty, employment and women empowerment.*	*Punjab*	*Microfinance in Punjab was provided through SBLP. Loans used for productive purpose directly influenced the level of income and employment of members.*

Surender (2011)	To explore the employment generation through SHG and in depth information on various aspects of self employment through SHGs.	Across India	SHG had the capability of generating employment. It might the one of way through which problem of unemployment could be removed from the entire world. And the procedure of growth and development could be achieved.
Batra (2012)	To analyze the impact of microfinance on HH welfare.	Haryana	The study observed the improvements in assets base among the members. However, many members had not purchased any productive items and loan amount form the Bank/ MFIs/ Group was also the main source of finance to acquire there assets.
Batra (2012)	To study the structure and functioning of SHGs.	Haryana	The selected schemes were SGSY, SCRIA and Swaymsiddha. The study identified the various problems such as irregularity in meetings, low level of skill and knowledge, lack of training among members.
Ramakrishna & khaja (2013)	To study the SBLP.	Tekkalakote	The study proved that SBLP was the best technique in poverty alleviation of the rural poor and the SHG members were highly involved in IGAs. This programme had been effectively executed and evaluated properly.
Chatterjee (2014)	To find out the role of Self-Help Groups towards the economic empowerment of women.	West Bengal	SHG encouraged women to form voluntary association and emerge as a group of saver-cum-borrowers. In fact, any financial assistance, if utilized properly generates gainful employment opportunities. Positive sign of employment generation was found in rural economy of Khejuri. Income has a favorable effect on consumption expenditure in general and on education, health, social and familial status of members in particular.
Nirmala & Yepthomi (2014)	To examine the impact of SHGs micro-financing on poverty alleviation and well-being of the rural poor women.	Nagaland	The results revealed the credit to have significantly improved their economic status and household wellbeing. It also led to their empowerment, independence and social participation. The study recommended training them for better competitiveness and employment activities, besides assisting with marketing facilities.

OBJECTIVES OF THE STUDY

The objectives of the present study are:

- To study the socio-economic profile of SHG's members in Mewat district.
- To measure the impact of microfinance programme on employment and Income level of participants.

HYPOTHESIS OF THE STUDY

H_0: There is no impact of SHGs in raising the employment and income level of the participants.

H_1: Microfinance programme has significant impact on employment and income level of the participants.

RESEARCH METHODOLOGY

The present study is empirical in nature as it is mainly based on primary data which was collected through interview schedule and FGD during field survey. A multistage random sampling method was adopted for the study. Out of four divisions of Haryana state, Gurgaon division was selected. For the purpose of present study, one district i.e. Mewat district was selected from Gurgaon Region. The availability of the programmes/schemes was also identified in the sampled district. The selected schemes for the study are MDA (Mewat Development Agency) and SGSY/NRLM (Swaranjayanti Gram Swarozgar Yojana/ National Rural Livelihood Mission). SHG members were selected from each of selected SHGs randomly. A total of 400 respondents (320 SHG members from 80 SHGs and 80 non-members of same socio-economic background) were select as final samples. The collected data was analyzed with the help of various statistical tools like Percentages, Means, Standard Deviations, and Coefficient of Variation. Some information was also collected through Personal Interviews (PIs) and Focused Group Discussion (FGDs) which was used at appropriate places to support the quantitative data. To prove the hypotheses, some tests like t-test (paired), Z test and Chi-square (a^{-2}) test also used in the study. The collected data was also analyzed with the help of Econometric Analysis (OLS Model) to measure the impact of microfinance programme.

STATUS OF MICROFINANCE IN HARYANA & MEWAT

In Haryana, total No. of rural Households are 3159222 and total rural population is 15868322. Total No. of BPL households are 858389 and percentage of BPL Households (HH) is 27.17. Out of all BPL Households, form SC category are 430905, under BC category is 267567 and 786862

Landless BPL.[5] To tackle the problem of poverty and for rural development, different schemes of central and state government for rural as well as urban areas such as Sampoorna Gramin Rojgar Yojna (SGRY), Integrated Rural Development Programme (IRDP), District Rural Development Agency (DRDA), Mewat Area Development Project (MADP), Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and Non Government Organizations (NGOs). In Haryana, Microfinance is promoted through different programmes/ projects by various departments and agencies such as the Women and Child Development Department (WCDD) has promoted Self Help Groups under the Programme for Advancement of Gender Equity (PAGE) and Swayamsiddha; Japanese project named as Aravali promoting by Forest Department; Women's Awareness & Management Academy (WAMA) has promoted the Swashakti project while Banks are promoting SHGs under NABARD's SBLP; DRDA is promoting SHGs under Swarnjayanti Gram Swarozgar Yojana (SGSY) and Mewat Development Agency (MDA) is promoting SHGs under IFAD programme in Mewat district of Haryana. Besides government departments, agencies and banks, some international, national and regional NGOs are also working for the promotion of Microfinance and progress of SHGs. In Haryana, community based organizations are also working like SCRIA. In Haryana, SHG-Bank Linkage Programme (SHG-BLP) continues to be the foundation of the Indian microfinance scene with 79.6 lakh SHGs covering over 10.3 crores households saving with the formal banking system with savings balance of over Rs. 6,500 crores as on 31st March 2015. In Mewat district, Microfinance is promoted under different programmes/ projects by various departments and agencies such as Banks are promoting SHGs under NABARD's SBLP; DRDA is promoting SHGs under SGSY & SJSRY and MDA is promoting SHGs under IFAD programme in Mewat district of Haryana. Besides these, some NGOs are also working for the promotion of Microfinance and progress of SHGs. The results of numbers of SHGs in India, Haryana and Mewat are presented in Table 1. It shows that numbers of SHGs now are increasing.

Table: 1 Number of SHGs

Years	India	Haryana	Mewat
	Number of SHGs (In Lakh)	Number of SHGs (In Lakh)	Number of SHGs
2007-08	*5625941*	*23570*	*2812*
2008-09	*6121924*	*33257*	*3398*
2009-10	*6953631*	*36762*	*3619*
2010-11	*7462570*	*35319*	*4148*
2011-12	*7960349*	*44184*	*4477*
2012-13	*7317551*	*42580*	*5046*
2013-14	*7429500*	*43029*	*5791*
2014-15	*7592404*	*45589*	*5932*

Source: NABARD's Reports on Microfinance of various years.

DATA ANALYSIS AND INTERPRETATION

Socio-Economic Profile of Sample Members

It provided an overview of the salient socio-economic characteristics of the sample households and SHG participants covered under the study. The sample consists of 320 microfinance programme participants from 80 operating SHGs and 80 non participants of the same socio-economic background of Mewat district of Haryana.

Distribution of SHGs by Socio-Economic Characteristics of Members

Age of the Respondents: The age of respondents plays a major role in the selection of IGAs under the programme. The average age of the group members was 37.3 years. The mean age of non participants was 38.2 years. The average age of respondents under MDA was 39.4 years and in SGSY, it was 35.2 years. It means that all members were near about the age of 37-39 years and the members around this age were mostly engaged in dairy production and farming (Table 2).

Gender: Under MDA, mostly groups were female based groups but in SGSY there were also many groups which have male members. But we selected only female members groups for the better measurement of the progress of SHGs and microfinance programme. The reason behind this was the sincerity and better performance of female members groups than male members groups. There were all the females' members in both MDA and SGSY. The total respondents are 100% females. In non participants, there were also all the females members (Table 2).

Religion: As far as religion of respondents is concerned, there were maximum Muslims respondents (54.06%). It is followed by Hindu (45.94%). In control group, 41.25% were Hindu respondents and 58.75% were Muslims members. Programme wise distribution shows that in MDA, 61.25% were Muslims and 38.75% were Hindu. Under SGSY, there were 67.50% Hindu and 54.06% were Muslims. There were no respondents found during the survey that belongs to Sikh and Christian community. It indicated that all the members were either Hindu or Muslim (Table 2).

Caste: Distribution of members by caste shows that there were majority of Other Backward Caste category respondents (42.19%). it is followed by Schedule Caste (30.62%), General (22.81%) and Backward Caste (4.38%). Under MDA, there were 20.17% General category respondents, 3.75% BC, 47.92% OBC and 19.16% SC. There were maximum Muslims respondents in MDA groups. While in SGSY, 3.75% respondents belong to General category, 6.25% to BC, 25.00% to OBC and 65.00% to SC. SGSY had majority of SC respondents and it mainly emphasized on BPL families. In control group, out of total 80 respondents, 47.50% were OBC which is followed by SC (32.50%), General (16.25%) and BC (3.75%). (Table 2)

Education Level: Table 2 also shows the distribution of members by education level. The education level of respondents is an important feature for the functioning of the groups. Education affects the management and organization of SHGs. Out of total respondents surveyed, 34.69% were illiterate and rests are literate. In control group, 47.50% non participants were illiterate and 52.5% were literate members. The percentage of illiterate members was high in SGSY groups. Under MDA, 32.50% were illiterate and 67.50% were literate respondents. While in SGSY, illiterate respondents were 41.25% and rest were literate. It shows that mostly members were not educated in all cases.

Table: 2 Distributions of SHGs by Socio-Economic Characteristics of Members

Particulars	MDA	SGSY	Total	Control
Average Age of Members	39.4	35.2	37.3	38.2
Distribution of Members by Gender				
Male	0(0.00)	0(0.00)	0(0.00)	0(0.00)
Female	240(100.00)	80(100.00)	320(100.00)	80(100.00)
Others	0(0.00)	0(0.00)	0(0.00)	0(0.00)
Distribution of Members by Religion				
Hindu	93(38.75)	54(67.50)	147(45.94)	33(41.25)
Muslim	147(61.25)	26(32.50)	173(54.06)	47(58.75)
Sikh	0(0.00)	0(0.00)	0(0.00)	0(0.00)
Christian	0(0.00)	0(0.00)	0(0.00)	0(0.00)
Distribution of Members by Caste				
General	70(29.17)	3(3.75)	73(22.81)	13(16.25)
BC	9(3.75)	5(6.25)	14(4.38)	3(3.75)
OBC	115(47.92)	20(25.00)	135(42.19)	38(47.50)
SC	46(19.16)	52(65.00)	98(30.62)	26(32.50)
Distribution of Members by Literacy Level				
Illiterate	78(32.50)	33(41.25)	111(34.69)	38(47.50)
Can Sign	37(15.42)	14(17.50)	51(15.94)	13(16.25)
Primary	52(21.67)	10(12.50)	62(19.37)	7(8.75)
Middle Class	14(5.83)	6(7.50)	20(6.25)	5(6.25)
High School	28(11.67)	8(10.00)	36(11.25)	9(11.25)
Senior Secondary	6(2.50)	7(8.75)	13(4.06)	4(5.00)
Graduation	8(3.33)	2(2.50)	10(3.13)	3(3.75)
Technical/ P.G & Above	17(7.08)	0(0.00)	17(5.31)	1(1.25)
Total	**240(100.00)**	**80(100.00)**	**320(100.00)**	**80(100.00)**

Source: Computed from Survey Data.

Note: Figures given in parenthesis show percentage.

Economic Status of the Respondents

Employment Level of Respondents: As it is cleared from the table 3 that 47.50% respondents were housewife which is followed by casual employees (27.50%), Self Employed (23.13%) and Contractual employees (1.88%). In control group, 43.75% were housewife, 28.75% of members were Casual employees, and 22.5% were self employed. Under MDA, 41.25% of members were housewife which is followed by casual employees (30.42%) and self employed (25.38%). While in SGSY, 66.25% were housewife and 15% were self employed, 18.75% were Casual labourers. The survey shows that except SGSY, in all cases more than 50% of members were working women.

Occupation: The occupation of the respondent's shows that majority of respondents were labourers (34.52%) which followed by agriculturist/farming (26.79%), Business/shop/traders (24.40%) and artisan/craftsman (14.29%). In control group, maximum respondents were involved in agriculture/farming. Programme wise distribution of occupation of members shows that under MDA, 36.88% members were labourers, 29.08% were agriculturist, 20.57% of members were traders and only 13.47% were artisans. While in SGSY, the occupation of majority of respondents (44.44%) was business/trade/ shop. It is followed by labourers (22.22%), artisans (18.52%) and agriculturist (14.82%). (Table 3)

Income Level: The approximate average monthly income of household after joining the group from all sources was Rs. 6334. In control group, it was Rs. 4530. Programme wise, in MDA the mean value of income of members was Rs. 7921 and in SGSY, it was Rs. 4747 (Table 3).

Sources of Income: The main source of income of members was agriculture and labour. In control group, respondents mostly earned through the cultivation and labour work (Table 3). Under MDA, the major source of income (40%) was cultivation which followed by laborer (36.67%), business/trade (22.08%). In SGSY, 48.75% of members had the agriculture as source of income. It is followed by business/trade (30%) and Labour (21.25%).

Expenditure: The approximate average monthly expenditure of household was Rs. 5597.50. In control group, it was Rs. 5280. Programme wise, in MDA the mean value of expenditure of members was Rs. 6875 and in SGSY, it was Rs. 4320 (Table 3).

Land Holding Pattern: The land holding pattern also shows the economic status of the respondents. Only 36.25% of members had land and 63.75% of members were found to be landless. In control group, 55% respondents were landless. In MDA, landless members were 59.58% and 76.25% in SGSY. The average size of land was 1.05 acres and in control group, it was 1.2 acres. Under MDA, 16.49% of members had land on her name while in SGSY; it was 10.53%. In control group, it was 11.11% (Table 3).

Table 3: Economic Status of the Respondents

Particulars	MDA	SGSY	Total	Control
Status of Employment of Respondent				
Self Employed	62(25.83)	12(15.00)	74(23.13)	18(22.5)
Regular	0(0.00)	0(0.00)	0(0.00)	0(0.00)
Casual	73(30.42)	15(18.75)	88(27.50)	23(28.75)
Contractual	6(2.50)	0(0.00)	6(1.88)	4(5.00)
Housewife	99(41.25)	53(66.25)	152(47.50)	35(43.75)
Occupation of Respondent				
Agriculture/ Farming	41(29.08)	4(14.82)	45(26.79)	21(26.25)
Labour	52(36.88)	6(22.22)	58(34.52)	6(7.50)
Business/ Shop/ Trader	29(20.57)	12(44.44)	41(24.40)	15(18.75)
Artisan/ Craftsman	19(13.47)	5(18.52)	24(14.29)	3(3.75)
Average Monthly Income of HH before joining SHG (app.) (Rs.)	4350	2270	3310	-
Average Monthly Income of HH after joining SHG (app.) (Rs.)	7921	4747	6334	4530[1]
Sources of Income				
Cultivation/ Agriculture	96(40.00)	39(48.75)	135(42.19)	42(52.50)
House Rent	3(1.25)	0(0. 00)	3(0.94)	0(0.00)
Employment/ Labour	88(36.67)	17(21.25)	105(32.81)	27(33.75)
Investment	0(0.00)	0(0.00)	0(0.00)	0(0.00)
Business/ Trade	53(22.08)	24(30.00)	77(24.06)	11(13.75)
Average Monthly Expenditure of HH[2] (app.) (Rs.)	6875	4320	5597.50	5280
Landholding Pattern of SHGs' HH				
Yes	97(40.42)	19(23.75)	116(36.25)	36(45.00)
No	143(59.58)	61(76.25)	204(63.75)	44(55.00)
Average Size of Land (in acres)	1.6	0.5	1.05	1.2
Land on the Name of any Female Member of Family				
Yes	16(16.49)	2(10.53)	18(15.52)	4(11.11)
No	81(83.51)	17(89.47)	98(84.48)	32(88.89)
Economic Status				
BPL	64(26.67)	80(100.00)	144(45.00)	42(52.50)
APL	176(73.33)	0(0.00)	176(55.00)	38(47.50)
Total	**240(100.00)**	**80(100.00)**	**320(100.00)**	**80(100.00)**

Source: Computed from Survey Data.

Note: Figures given in parenthesis show percentage.

Economic Status: Out of total members surveyed, 45% were from the BPL families and 55% were from APL families. In control group, BPL respondents were 52.50% and 47.50% of the respondents were from the APL families. Under MDA, 26.67% of members were from BPL families. While in SGSY, 100% members were from BPL families. It indicated that SGSY was mainly concerned with BPL families while MDA was not targeted at BPL HH but for women empowerment (Table 3).

Impact of SHGs on Employment and Income Level

This section analyzes the impact of SHGs on employment and income level of the members. It is important to study the occupational status of respondents in order to know about the livelihood support system of members and non members. This is done through hypothesis testing with the help of Econometric Analysis.

Income Generating Activities after Joining the Group

Table 4 shows that total of 70.62% of members and their HH was involved in economic activities after joining the group at the time of survey. But still 29.38% of members had not started any Income Generating Activity even after joining the SHG. The highest number of members who had started economic activities was in MDA (74.17%) followed by SGSY (60%). In SGSY, all the members of group had not started IGAs but they utilized loan amount for their family members and with the help of loan amount they settled their HH. The members of SGSY stated that they had spent the loan amount on the fulfillment of their basic needs. They had invested loan amount on education and Career of children, marriage of their daughters etc. to settle the life of their spouse. The chi-square test shows the no relation between both programmes regarding the selection of economic activities. Both the programmes were independent to each other.

Table 4: Income Generating Activities after Joining the Group

Particulars	MDA	SGSY	Total
Selection of IGAs			
Yes	178(74.17)	48(60.00)	226(70.62)
No[1]	62(25.83)	32(40.00)	94(29.38)
H_o = Selection of IGA is independent of Programmes. χ^2 **= 5.804,** *significance at 5% significance level.* *Hence, Null Hypothesis is rejected.*			

Source: Computed from Survey Data.

Note: Figures given in parenthesis show percentage.

Kind of Income Generating Activities undertaken after Joining the Group

It is observed from the table data that the highest number of members and their HH were involved in livestock related activities (14.60%) followed by Kirana Store/Petty Shop/ Bakery (11.07%), Fodder (11.07%), Agriculture (10.62%), Floor Mill (8.85%), Hand Fan (8.41%), Shoe Making (7.08%), Bangle Shop/Cosmetic Shop (6.19%), Food/Tea stall (5.31%), Anganwadi Workers (3.10%), Cycle Rickshaw (3.01%), Sewing Machine/Embroidery (2.65%), Tent (2.65%), Handloom/Handicraft (2.21%), Dari Making (1.77%), Pickle/Papad/Jam/Squash Making (1.50%), Labour/Domestic Servant (1.33%), Poultry Farm (1.33%), Basket Making (0.88%), Chalk/Pot Making (0.44%) and Camel Cart (0.44%).

Table 5: Kind of Income Generating Activities undertaken after Joining the Group

Particulars	MDA	SGSY	Total
Bangle Shop/ Cosmetic Shop	*12(6.75)*	*2(4.17)*	*14(6.19)*
Livestock (Buffalo/ Cow/ Sheep/ Goat)	*25(14.04)*	*8(16.66)*	*33(14.60)*
Labour/ Domestic Servant	*2(1.12)*	*1(2.08)*	*3(1.33)*
Kirana Store/ Petty Shop/ Bakery	*22(12.36)*	*3(6.25)*	*25(11.07)*
Pickle/ Papad/ Jam/ Squash Making	*0(0.00)*	*0(0.00)*	*0(0.00)*
Food/ Tea Stall	*12(6.75)*	*0(0.00)*	*12(5.31)*
Fodder	*20(11.23)*	*5(10.42)*	*25(11.07)*
Agriculture	*19(10.68)*	*5(10.42)*	*24(10.62)*
Mudha Making	*0(0.00)*	*0(0.00)*	*0(0.00)*
Floor Mill	*16(8.99)*	*4(8.33)*	*20(8.85)*
Shoe Making	*14(7.87)*	*2(4.17)*	*16(7.08)*
Cycle Rickshaw	*0(0.00)*	*0(0.00)*	*0(0.00)*
Sewing Machine/ Embroidery	*3(1.68)*	*3(6.25)*	*6(2.65)*
Camel Cart	*0(0.00)*	*1(2.08)*	*1(0.44)*
Poultry Farm	*1(0.56)*	*2(4.17)*	*3(1.33)*
Tent	*3(1.69)*	*3(6.25)*	*6(2.65)*
Hand Fan	*13(7.30)*	*6(12.5)*	*19(8.41)*
Fisheries	*0(0.00)*	*0(0.00)*	*0(0.00)*
Handloom/ Handicraft	*5(2.81)*	*0(0.00)*	*5(2.21)*
Piggery	*0(0.00)*	*0(0.00)*	*0(0.00)*
Dari Making	*2(1.12)*	*2(4.17)*	*4(1.77)*
Anganwadi Workers	*7(3.93)*	*0(0.00)*	*7(3.10)*
Basket Making	*2(1.12)*	*0(0.00)*	*2(0.88)*
Chalk/ Pot Making	*0(0.00)*	*1(2.08)*	*1(0.44)*

Source: Computed from Survey Data.

Note: Figures given in parenthesis show percentage.

In MDA, the main activities adopted by members were livestock (14.04%), Kirana Store/Petty Shop/Bakery (12.36%), Fodder (11.23%), Agriculture (10.68%), Floor Mill (8.99%), Shoe Making (7.87%) and Hand Fan (7.30%). Very few HH invested the loan amount for Dari Making, Basket Making, Sewing Machine/Embroidery, Tent, Handloom/ handicraft and Food/Tea Stall. While in SGSY, 16.66% of members were engaged in livestock related activities. It was followed by Hand fan (12.5%), Fodder (10.42%), Agriculture (10.42%) and Floor Mill (8.33%). There were fewer members involved in Bangle Shop/Cosmetic Shop, Labour/Domestic Servant, Floor Mill, Shoe Making, Dari Making and Chalk/Pot Making (Table 5).

Income Earned from the Activity

People join the SHG for the purpose of enhancing their living of standard and earn livelihood. Through SHGs, people can involve in economic activities with financial help by the group in the form of loan form SHG and Bank. The main purpose of any programme or scheme of Microfinance through SHGs is to raise people above poverty line and help then to earn livelihood by SHGs. In order to measure the success of both programmes and impact of SHGs on employment and income level of members, respondents were asked about their experiences in the changes in the level of income. Table 6 shows that the highest average income was observed in MDA (Rs. 3571.37) followed by SGSY (Rs. 2477.08). The value of $|Z|$ shows the significant difference in the level of income under both programmes. In MDA and SGSY both, mostly members improved their income level through livestock related activities and agriculture. A paired t-test is used to measure the significance of difference between the mean incomes of participants. The test shows that the difference between the mean incomes of the participants of the programme in the pre and post situation is significantly different at one percent level under both programmes. After joining the group, mostly members under both programmes started economic activities with the help of which they raised their employment and income level.

Impact of Microfinance on Employment & Income Level: An Econometric Analysis

The impact of microfinance on different dimensions such as employment & income level has been estimated by applying the Ordinary Least Square (OLS) model. The OLS technique was used to analyze the effect of different explanatory variables like income, amount of loan taken, education, occupation of husband, membership of participants, caste etc. on the probability of participation of HH in the group based microfinance programme examined. These variables were selected after measuring the correlation among them. Microfinance has significant

Table 6: Income Earned from the Activity

Particulars	MDA	SGSY	Total
Income Earned from IGAs			
Mean Income	*3571.37*	*2477.08*	*3024.23*
S.D	*256.66*	*248.04*	*252.35*
C.V	*7.19*	*10.01*	*8.6*

H_o= Mean Income earned from IGAs is same under both programmes.
|Z| = 33.879, At 5% level of significance, the critical value of Z for one tailed test = 1.645.
The calculated value |Z| > critical value of Z at 5% level. Hence, at 5% level of significance, null hypothesis is rejected. So, Mean Income earned from IGAs is different under both programmes.

Programmes	Average Income of Participants per month (in Rs.)			Value of 't'
	Pre- SHG	*Post -SHG*	*Increment*	
MDA	*4350*	*7921*	*3571*	*9.674**
SGSY	*2270*	*4747*	*2477*	*5.792**

H_o= There is no impact of SHGs in raising the employment and income level of the participants.
**Significant at 1% level of significance. So null hypothesis is rejected and after joining the SHG, due to involvement in IGAs, member's income level has been raised. Thus, there is significant impact of SHGs on employment and income level of participants.*

Source: Computed from Survey Data.
Note: Figures given in parenthesis show percentage.

impact on the employment and income level of the participants in Mewat District. It is presented in the below model:

IGAINC = $\hat{a}_0 + \hat{a}_1$ (InLOAN) + $\hat{a}_2$ (JOIN) + $\hat{a}_3$ (EDU) + $\hat{a}_4$ (CASTE) + $\hat{a}_5$ (OCHUS) + $\hat{a}_6$ (TINHH) + $\hat{a}_7$ (PMDA) + $\hat{a}_8$ (PSGSY) + U.

Where, IGAINC = Income earned from th income generating activities (IGAs).

InLOAN = Log value of total loan taken frm bank as well as from the group.

JOIN = Length of membership in the group (In years)

EDU = Education level of respondent. (1=lterate, 0 otherwise)

CASTE = Caste of the respondent. (1 for Gneral/BC/OBC, 0 for SC)

OCHUS = Occupation of Husband.TINHH = Total income of Household.

PMDA = Programme dummy 1 for MDA, 0 otherwise.

PSGSY = Programme dummy 1 for SGSY, 0 otherwise.

$\hat{a}_0$ = Constant, $\hat{a}_1$ = Coefficients and U = error term.

Table 7: Measuring the Impact of Microfinance on Employment and Income Level of Participants

Explanatory Variables	Coef.	t	P>t
InLOAN	*0.406*	*5.18**	*0.000*
JOIN	*0.032*	*0.34*	*0.583*
EDU	*0.347*	*0.65*	*0.467*
CASTE (dummy)	*0.212*	*0.46*	*0.516*
OCHUS (dummy)	*0.173*	*2.74*	*0.020*
TINHH	*0.206*	*2.08*	*0.045*
PMDA (dummy)	*0.728*	*8.3**	*0.000*
PSGSY (dummy)	*0.594*	*6.2**	*0.000*
CONSTANT	*2.295*	*2.75**	*0.000*
Number of observations=226, R^2 = 0.78, F(8,217) = 43.8, Prob.>F = 0.000			

Source: Computed from field survey.

The results of the analysis show that the amount of loan plays a significant role in the improving the income level of the HH. Programme wise analysis shows that the members of MDA and SGSY have better position in terms of increase in income and employment level. The occupation of Husband and total income of HH has played crucial role in this. Other variables like length of membership, education and caste play insignificant roles. The value of R^2 = 0.78. It indicates that about 78% of the total variation of the dependent variable was explained by the independent variables (Table 7).

SUGGESTIONS

To raise the standard of these poor rural people and generate employment & income level for them, it is needed to help members become literate, improve the skill & capabilities of members, conduct training programme for members, motivate them to start economic activities and try to discuss about the issues and problem of members as well as of groups. For the upliftment of the society in Mewat District, there must be taken some action for capacity building, training & literacy programmes, formation of capital, supply of resources etc. for the poor rural people.

CONCLUSION

The impact of SHGs on employment and income level of members was significant. Both the programmes had shown little difference in results. The average level of income earned form IGAs was higher in case of MDA in comparison to SGSY. Under both programmes, members were involved in livestock related activities and agricultural activities. But in comparisons to MDA members, SGSY members had less land and belonged to BPL families so their expenses were more. SGSY members also faced the problem of space for livestock. Despite some members were not involved any IGAs but they helped their HH in education and career with the help of loan amount through SHGs. The priority of members was to satisfy their basic needs through SHGs. Some members had also settled their life in well manner with the help of SHGs. Besides, SHGs helped members to increase their income level through economic activities for providing them better living conditions and making them independent. Thus, SHGs had positive impact on the employment and income of members. Microfinance programmes raised members above poverty line and enhanced their socio economic status.

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[6] Mean value of income of the non-members at the time of field survey.

[7] Mean value of expenditure of the members and non-members at the time of field survey.

[8] Even after joining the SHGs, some members didn't start any IGAs because they used their loan for consumption purpose instead of investing in economic activities. The priorities of these members are to satisfy their basic needs. They use the loan amount for their family and children. After fulfilling the ir basic needs, they start to involve in IGAs.

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Financial Literacy among Indian Millennial Generation and their Reflections on Financial Behaviour and Attitude: An Explanatory Research

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ABSTRACT

Objectives: *The main focus of the study is to measure the level of financial literacy among Indian millennials and also to examine the dependency of standardised financial knowledge construct on select (twelve) control variables. Further, the study has specific objective of understanding the reflections of financial literacy on financial behaviour and attitude.*

Research Approach & Design: *The study is explanatory (causal) in nature based on structured questionnaire with 210 respondents of PG students of marketing, accounting/finance and HR group (Millennials) of an institution for national importance complying sampling adequacy deVaus (2002) selected through proportionate stratified sampling technique. Data have been analysed through Man-Whitney (U), and Kruskal-Wallis (H) test, Kolmogorov-Smirnov and Factor analysis with varimax rotation (reliability and convergent validity of construct). Finally, Ordinal regression (PLUM) and Multinomial Logistic Model (MLR) have been applied for assessing the influences of financial literacy on financial knowledge and literacy. The survey followed the standard measures comprising 50 questions/statements and is divided into four sections, namely demographic profile adapted from Chen and Volpe 1998; Lusardi et al 2010; Guiso and Jappelli,2008; Chen and Volpe,1998); financial behaviour adapted from Banco de Portugal (2010), financial attitude Chen and Volpe (1998) and mixed measures of financial knowledge adapted from Jumpstart Survey (2008); Lusardi et al (2010); Chen and Volpe (1998) and PISA (2012).*

Research Findings: *As far as level of financial literacy of millennials are concerned more than 60% of respondents correctly answered majority of questions but few cases namely time value of money and corporate tax less than 30% answered correctly. Except share market, regulatory framework and corporate tax, the level of financial literacy not varying statistically according to area of studies. It is also found that maximum select indicators of financial literacy are dependent on control variables except source of income, attended financial related course and mentoring. By and large financial literacy is highest among accounting/finance students followed by HR and marketing millennials. Reflections of financial literacy on financial behaviour and attitude are found substantial as Pseudo R Square (Cox and Snell) marked to .859 and .897 respectively.*

Conclusion & Policy Implications: *In a nutshell, it can be concluded that PG millennials are having moderate financial literacy and lesser variations of literacy level among marketing, accounting/finance and HR group. Parents level of education especially mother's education has significant role in millennials financial literacy. Further, scale used for the study for measuring financial literacy has significant influences on financial behaviour and attitude.*

Key words

Financial literacy and knowledge, financial behaviour and attitude, millennials, and reflections

GENESIS AND DEVELOPMENT OF THE PROBLEM

In terms of overall financial literacy, India is at the bottom among 16 countries in the Asia-pacific region with 59 index points, according to the annual MasterCard's index for financial literacy (Kumar, 2013). Close to 76% Indian adults do not adequately understand key financial concepts, found a global survey conducted by Standard & Poor's Financial Services LLC. The S&P's Ratings Services Global Financial Literacy Survey found that this number is lower than the worldwide average of financial literacy, but it is roughly in line with other BRICS (Brazil, Russia, India, China and South Africa) and South Asian nations. According to the survey, three-quarters of Asian adults and two-thirds of adults worldwide are not financially literate (S&P survey, 2015).

The Millennial Generation is hard to categorize and understand for multiple different variables and reasons. Being born at any time in the period starting in the late 1970s ending in the early 2000s creates the classification of the individual being a "Millennial" **(Bailey, 2014).** Gen Y, generally described as those born from 1980 to 2000, have been the subject of intense scrutiny. This generation, variously called the millennial generation, the MeMeMe generation, digital natives, and the net generation, is one of the largest population groupings the world has ever seen. In the USA alone they number 80 million strong; in India, Africa, and most of South America and the Middle East, more than 50% of the population is under 30. Even in China, 40% of the population is under 30 **(Raina, 2014).** Gen Y is the youngest of generation cohort. They are categorized in different brackets by different people with birth years ranging from 1977-1997. Also popularly known as millennials, this cohort has many names that also indicate their characteristics; Digital Generation, Net Generation, Echo boomers, N-Gen **(Bhotia and Agarwal, 2014).** Gen Y comprising of those born between 1980 and 2000 would form close to 75% of the global workforce by the year 2025 **(Ganesh, 2014).**

The sheer size and unique demographics of Gen Y make its impact and involvement in financial matters more significant for the economy than that of any other birth cohort. Hence it is important to explore this generation's expectations and social behaviours—which vary significantly in some regards from previous generations—and the economic environment in which they operate. Often referred to as the "instant gratification generation," Millennials have been characterized as having high expectations for both professional and personal life **(Bishop, 2006).** Its members desire purposeful work and are passionate about issues like the environment. The literature attributes the high levels of optimism, confidence, and achievement of Gen Y to a change in social values regarding children and family life. Specifically, Gen-Yers have grown up "in an era that placed a high value on children," with parents who gave priority to their offspring's personal development and self-esteem **(Eubanks, 2006**). The confidence instilled in this generation has informed its attitudes toward professional achievement. A 2011 study found that three-quarters of Gen Y respondents felt confident about achieving their goals and 80 percent reported having high expectations for themselves **(Bresiger, 2011).** With such lofty and perhaps unrealistic expectations, Gen Y is also prone to higher-than-average levels of disappointment. According to a 2010 study by the Pew Research Centre, Millennials are the most dissatisfied with their current earnings in the context of their ability to lead a desirable lifestyle **(Taylor and Keeter, 2010).** This disappointment is not unwarranted. In 2010, Gen-Y had an average level of wealth that was 7 percent below the average level of wealth of those in their 20s and 30s in 1983 **(Steuerle, McKernan, Ratcliffe, and Zhang, 2013).** Moreover, the study has followed maximum published studies based on the financial literacy of university students across the globe. The earliest published paper presented here is 2004 **(Jariah, Husniyah, Laily, & Britt, 2004)**, then 2009 **(Ibrahim, Harun, & Isa, 2009)** and 2010 **(Sabri, MacDonald, Hira, & Masud, 2010),** and the latest is in 2013 **(Shaari, Hasan, & Kumar, 2013).** On the foregoing discussions and literature, the scholar has developed the following research questions and which to be addressed in the subsequent sections:

I. Is there any gender gap in the level of millennials financial literacy?

II. Whether financial literacy is dependent on demographic background (control variables)?

III. Are there any standard measures of predicting financial literacy?

IV. What is the level of financial literacy if the university level commerce and business students in India?

V. How the individuals' financial knowledge, behaviour and attitudes are related? and

VI. How financial knowledge reflects on financial behaviour and attitudes?

SIGNIFICANCE OF THE STUDY

Today's young adults, referred to as Millennials born between the early 1980's and 2000's, are coming of age in an economy unlike any other **(Taylor et al., 2014).** The macro-economic conditions of the Great Recession from approximately 2007 to 2011 systematically undermined Millennials' financial health by limiting employment opportunities, stagnating income growth, reducing net worth, and increasing reliance on debt. Millennials entered a labour market with limited opportunities and saw higher unemployment rates than the rest of the population **(Rubin, 2014).** Fewer Millennials entered the labour market than young adults from any preceding generation and their unemployment rate was roughly 15 to 17 percent at the height of the recession—5 to 7 percentage points higher than the average unemployment rate for the rest of the population. They also experienced diminishing returns for participating in the labour market, earning 6 percent less per paycheck than in previous years **(Mishel et al., 2012).** The average Millennial has about $1,000 in savings **(Friedline et al 2014)**, suggesting that many may struggle to afford necessary expenses in the face of unemployment and to become financially independent **(Sironi, & Furstenberg, 2012).** Millennials also delayed investing in homes and those who did invest experienced substantial wealth losses that were driven by declining home equity **(Fry, 2012).** These losses are reflected in the value of Millennials' accumulated net worth compared to that of previous generations **(Taylor et al 2011).** Millennials' net worth is valued at $10,000, which is 41 percent less than the values of net worth held by Baby Boomers and Generation X'ers two decades ago **(Bricker, 2014).**

Millennials are a high-impact generation poised to shape the national and global economy in new and significant ways and their economic influence is expected to grow over the next decade. But the platform from which they will wield this influence is a troubling one. They engage in expensive credit card behaviours, stand at the forefront of the growth of student loan debt, and many are already raiding their retirement accounts. Millennials' financial practices are of concern because of the potential for these behaviours to become firmly established. Indeed, the research has to be documented that the gap between the amount of financial responsibility given to Gen'Yers and their demonstrated ability to manage financial decisions is rapidly widening. Furthermore, their knowledge deficit could prove disastrous for them, the economy, and society. The research can help overcome the gap between the amount of financial responsibility given to Millennials and their demonstrated ability to manage financial decisions.

LITERATURE SURVEY

3.1 Empirical Evidence-International Context: Financial literacy as a construct was first championed by the Jump$tart Coalition for Personal Financial Literacy in its inaugural 1997 study captioned "Jump$tart Survey of Financial Literacy among High School Students". In this study, Jump$tart defines financial literacy as "the ability to use knowledge and skills to manage one's financial resources effectively for lifetime financial security **(Hastings, et al. 2012). Atkinson and Messy (2012)** has defined financial literacy as "a combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual well-being". According to **Vitt et al. (2000),** financial literacy is the ability to read, analyze, manage, and communicate about the personal financial conditions that affect material well-being. It includes the ability to discern financial choices, discuss money and financial issues without (or despite) discomfort, plan for the future, and respond competently to life events that affect every day financial decisions, including events in the general economy. Another study of **Hogarth (2002)** states that the financially literate individuals are: i) knowledgeable, educated, and informed on the issues of managing money and assets, banking, investments, credit, insurance, and taxes; ii) understand the basic concepts underlying the management of money and assets; and iii) use that knowledge and understanding to plan and implement financial decisions.

Research has shown that financial literacy is beneficial to individuals and families **(Blalock *et al*. 2004, Danes and Hira, 1987, Grable and Joo, 1998, Hibbert and Beutler, 2001, Kerkmanneiet *al*., 2000)**. It increases students' chances for saving and investing, getting out of debt, spending less than they earn, and living on a budget. It also decreases their chances for bankruptcy, receiving government assistance **(Bauer *et al*. 2000, Blalock *et al*. 2004, Huston *et al*. 2003)**, and making poor consumer decisions **(Grable and Joo 1998, Hayhoe *et al*. 2000)**. Students who lack financial knowledge have increased financial difficulties that continue into later years **(Danes and Hira 1987, Hibbert and Beutler 2001, Hira 2002).** The research of **Chen and Volpe (1998)** found that students with less financial knowledge have more negative opinions about finances and make more incorrect financial decisions. They pointed out that having a low level of financial knowledge limits students' ability to make informed decisions. **Lyons and Hunt (2003)** found that university students want to receive financial information and have a preference about how financial education is taught, who teaches it, and what the content is. The study of **Boakye and Kansanba (2013)** reveals that formal education is the major source of financial literacy of undergraduate students, followed by parents, the media, and peers. The benchmark research of Lusardi **(2012)** on the review of studies from US and some European countries also showed people lack numerical abilities which are relevant in every day financial decisions.

Low levels of financial literacy have been linked to high levels of personal and household debt **(Lusardi & Tufano, 2009);** poor health **(Joo & Garman, 1998)**; adverse health choices **(Peters et al., 2007)**; and inadequate retirement planning (**Lusardi & Mitchelli, 2007**). It has also been found that individuals with lower financial literacy levels are more likely to have higher inflationary expectations which further exacerbate the negative social and economic consequences of poor financial literacy and lead to poorer general life outcomes **(Bruine de bruinet al., 2010).** Young people are very susceptible to the lifestyle aspirations of advertising and media and this is likely to increase reliance on debt **(Fear & O'Brien, 2009).** Survey of financial literacy literatures across the globe by **Xu & Zia (2012),** pointed out increasing relevance of financial literacy both in developed and developing countries. They advance prior reviews by showing financial literacy in developing countries was low. They also underscore lack studies in developing countries albeit the same is highly needed for policy making and academic purpose. Their result, confirmed **Lusardi & Mitchel (2011)** & **Lusardi (2012)** with respect to the correlation between financial literacy and socio demographic factors. Similar to **Lusardi & Mitchel (2011),** differences across ethnic groups, and employment status also observed at global level. In their review of **Lusardi & Mitchelle (2013)**, 'Economic Importance of Financial Literacy', affirmed that existing literature show financial literacy increases with age, but decline at old age. And also females at all age recorded lower financial literacy than male.

3.2 Empirical Review- Indian Context: Agarwalla et al (2012) in their study found that "Financial knowledge among Indians is very low than the international standards. But the financial behaviour/attitude of the employees and retired seems to be positive. The financial knowledge among the women are marginally high than the men. Greater access to consumption credits has influenced the financial behaviour of young employees". In a study of **Singh (2014)** concludes that greater financial literacy can also be an important component to efforts to increase saving rates and lending to the poorest and most vulnerable consumers. Lower Financial literacy is linked to lower household savings, as well as higher reported over-indebtedness. The study of **Sekar and Gowri (2015)** found that in Indian city people are still not much aware about their finance related issues. Moreover, savings habit among young people is not so high. **Shetty & Thomas (2014)** concludes that the financial knowledge among student in Mumbai is poor as compared to the global standards. A large part of this is due to poor numeracy skills and can be attributed to the poor elementary and primary education system as documented in other studies. In a study of **Bahadur (2015)** concludes that financial literacy is the ultimate pillar of a strong financial system. Financial literacy and financial education should be on the agendas of educators, businesses, government agencies, policy makers, NGOs and the issues should be dealt with policy reforms at the national level. The study of **Bhushan and Medury (2013)** suggest that overall financial literacy level of India is not very high. Financial literacy level gets affected by gender, education, income, nature of employment and place of work whereas it does not get affected by age and geographic region. Empirical evidence of **Thorat (2007)** argues that India has a large population that does not have the rudimentary skills to make basic financial decisions. It has been estimated that only about five percent of Indian villages have a commercial bank branch. Similarly, over 40 percent of the adult population have no banking account; a number which grows to over 60 percent in rural areas. **Ambarkhane et al (2015)** in their study concludes that considering the education system in India, financial literacy here must be at low level. Moreover, India has a large unbanked population; financial literacy will help in bringing them in formal financial fold. It will favourably affect not only economic aspects of individuals but also social aspects. **Aggarwal and Gupta (2014)** of their findings revealed that the level of education and discipline (commerce, non commerce) influence financial literacy among youths. Also, males were found to have higher levels of financial awareness compared to females. **Murithi, et al (2012)** in their study of investors' behaviour in India found investors in India are aware of the risk and return trade off, an aspect of financial literacy relevant to investors, and most of them have higher educational qualification, but still their investment portfolio is not diversified. **Shankari, et al (2014)** studied financial literacy basic banking product awareness advanced banking knowledge, and financial behaviour using a sample survey of 500 respondents in Tamil Naidu, India found an overall low financial literacy in the sample. Contrary to existing literatures no significant relationship between level of financial literacy and demographic variables such as "*Age, Gender and*

Educational Qualification of the respondent" were evidenced. The study of **Bhushan and Mudery (2013)** concludes, based on a questionnaire survey of 516 sample salaried employees in Himachal Pradesh, India analyzed using descriptive statistics and ANOVA, low level of financial literacy (overall mean = 58.3%), and found statistically different level of financial literacy across gender, education status, and income, nature of employment, and place of work.

3.3 Research Gap Exploration: Aiming to profoundly review of extensive researches, this study deduces various insights into financial literacy. It seems that financial illiteracy as a prevailing issue around the world ranges from general groups to millennials, from people in developed countries to those in developing ones. The gender gap in financial literacy is of particular concern as women are also more likely than men to become economically vulnerable due to longer life spans, shorter work experiences, and other factors. Although there are plenty of studies concerned with measuring millennials financial literacy but they have used specified measures such as the Jump$tart Coalition Survey, the Washington Financial Literacy Survey, and the Survey of Consumer Finances do not collect sufficiently detailed information on individuals' financial education and variables related to financial decision making. One reason for this is the lack of a standard financial literacy measure **(Huston, 2010). Hung, Parker, & Yoong (2009)** in their studies also pointed out that surveys that have been designed to measure financial literacy across the globe are not comprehensive. In order to be effective, financial literacy education, therefore, should be tailored to suit different demographics, life stages, and learning styles **(Huston, 2010).** The present study uses the mix measures of financial literacy including comprehensive spectrum of demographic importance with western and eastern millennials expectation orientated construct.

OBJECTIVES AND HYPOTHESES DEVELOPMENT

I. To measure the level of financial literacy of millennials according to their area of studies;

II. To explain the dependency of financial knowledge on select control variables; and

III. To find out the reflections/influences of financial knowledge on financial behaviour and attitudes.

Based on objectives and literature the study is indented to test the following hypotheses:

H_{01}: Marketing, HR and Accounting/Finance millennials has the symmetrical level of financial literacy;

H_{02}: Financial literacy does not have dependency on select twelve control variables (demographic indicators);

H_{03}: Reflections of financial literacy on financial behaviour are very negligible; and

H_{04}: Influences of financial literacy on financial attitudes are not substantial.

PROPOSED RESEARCH MODEL & DESIGN

Explanatory studies look for explanations of the nature of certain relationships. Hypothesis testing provides an understanding of the relationships that exist between variables. The goal of explanatory research is to answer the question of why. Explanatory research attempts to go above and beyond what exploratory and descriptive research to identify the actual reasons a phenomenon occurs. This paper explores level of financial literacy among Gen Y (millennials) and their dependency on select control variables. It further seeks to establish the influences of financial literacy on financial behaviour and attitudes. This study adopted an explanatory research design as the framework to examine the relationship between variables while determining cause and effect (Figure-1). The study has strong literature base and methodology in eastern and western cultural context as **Chen and Volpe (1998); Jones (2005); Mandell (2008); Robb and Sharpe (2009); Cude et al (2006); Lusardi et al. (2010); OECD (2012); Banco de Portugal (2010).**

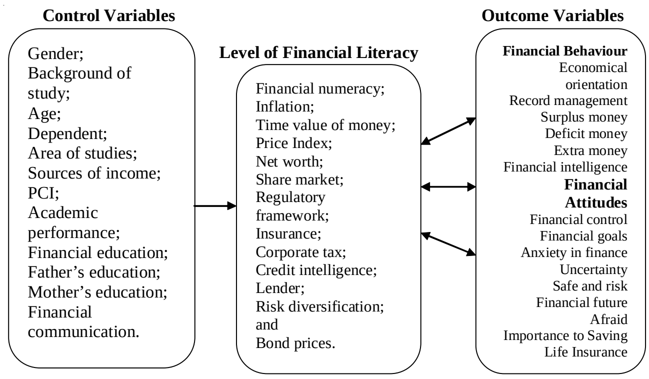

Figure: 1- Proposed Research Model

6.1: Sampling Technique and Adequacy

Since the study mainly focused on millennial generation, PG students of commerce and management have been targeted. Stratified random sampling was used to determine the respondents of HR, marketing and accounting/finance from the university system. A total 210 PG students of millennial generation in equal proportion of three different streams (Marketing, Accounting/finance and HR) have been selected. Gender diversity also been considered at the time of selecting the respondents. The notion behind selection of commerce and management students is that whether they have sound financial skills or not. There is a relationship between financial courses taken in college and students' knowledge of investment **(Peng, Bartholomae, Fox, & Cravener, 2007).** According to **Beal and Delpachitra (2003), Chen & Volpe (1998), Volpe, Chen, & Pavlicko (1996), Peng et al. (2007),** and **Robb & Sharpe (2009)** have indicated that business majors are having more knowledge about personal finance than non-business majors.

Sampling size and adequacy have been decided from the following formula adopted from **deVaus (2002**), at 95% confidence level, 5% margin of error and estimated heterogeneity of the population to be 20%.

$n = p\% * q\% * [z/e\%]^2$

Where n is the minimum sample size required

p% is the proportion belonging to the special category

q% is the proportion not belonging to the special category

z is the z value belonging to the level of the confidence level required, and e% is the margin of error.

Thus $\mathbf{n = 0.20*0.80*[1.96/0.05]^2}$

n = 245

Based on the minimum sample size of 245, the adjusted sample size can be obtained as

$n' = n/\{1+(n/N)\}$

Where; n' is the adjusted sample size, n is the minimum sample size and N is the total population.

$\mathbf{n' = 245/1+[245/1{,}100] = 200}$

Table-1 Targeted Respondents

Gender	HR (Major)	Accounting/Finance (Major)	Marketing (Major)	Total
Boys	*35*	*35*	*35*	*105*
Girls	*35*	*35*	*35*	*105*
Total	*70*	*70*	*70*	*210*

For the convenience of equal distribution, the study considered sample size of 210 PG students of commerce and management representing 19% of the total population. The sample size was considered to enable the researchers collect more detailed information on the subject.

6.2 Research Instrument

Lusardi and Mitchell (2011) financial literacy levels of adults around the world have been measured based on three basic concepts, i.e. understanding and calculation of interest rates, understanding of inflation, and risk diversification knowledge. **Heenkkenda (2014)** has used: (i) Saving Behaviour, (ii) Investment and payment mechanisms, (iii) Awareness on financial products, (iv) Risk Management & pension funds, and (v) Money Management Financial planning Knowledge in measuring financial literacy in Sri Lanka. The report of the **Financial Literacy and Education Commission (2006)** mentions that, "*a systematic method of evaluation of financial literacy programs does not exist*." **Huston (2010)** also has identified three major difficulties in developing a standard measure i.e., Lack of common construct; Lack of comprehensive set of questions covering all components of financial literacy; and Lack of guidance for interpretation of the measure.

The survey followed the standard measures comprising 50 questions/statements and is divided into four sections. The first section contains 12 questions related to demographics of the participant and is based on prior literature as age (**Chen and Volpe 1998; Lusardi et al 2010);** background of studies (**OECD, 2006; Guiso and Jappelli,2008; Chen and Volpe,1998);** area of studies **(Chen and Volpe:1998; Robb and Sharpe, 2009);** academic performance **(Cude et al ,2006);** per capita income **(Lusardi et al,2010; Guiso and Jappelli, 2008; OECD 2006; Chen and Volpe,1998);** extracurricular course **(Robb and Sharpe ,2009; Mandell and Klein,2009);** discussions with parents **(Cude et al ,2006; Lusardi et al 2010)**. The second part of instrument is financial behaviour comprising 14 statements adapted from **Banco de Portugal (2010).** The study used **Chen and Volpe (1998)** 11 measures of financial attitude. The fourth section used 13 mixed measures of financial knowledge and few have been adapted from

Jumpstart Survey (2008); Lusardi et al (2010); Chen and Volpe (1998) and PISA (2012).

6.3 Testing the Goodness of Measure for the Financial Literacy Construct

6.3.1 Content Validity: It refers to the extent to which an instrument covers the meanings included in the concept **(Babbie, 1992).** In a similar **vein, Rubio, Berg-Weger, Tebb, Lee, and Rauch (2003)** refer to content validity as to the extent to which the items on a measure assess the same content or how well the content material was sampled in the measure. Essentially, the goals of content validity are to clarify the domain of a concept and judge whether the measure adequately represents the domain **(Bollen, 1989).** Content validation results in a theoretical definition that explains the meaning of the variable in question **(Bollen, 1989)** and is guaranteed by the literature overview **(Gomez, Lorente & Cabrera, 2004).**

6.3.2 Convergent Validity*:* According to **Campbell and Fiske (1959),** convergent validity refers to all items measuring a construct actually loading on a single construct. Convergent validity is established when items all fall into one factor as theorized. Convergent validity was carried out through a within factor, factor analysis in order to obtain a more in-depth judgment of the dimensionality of the construct under study **(Hair et al, 2006).** All the three factors displayed uni-dimensionality with financial behaviour, *KMO was 0.693 explaining 57 percent of the variation; financial attitude, KMO was 0.607 explaining 54 percent of the variation; and financial knowledge, KMO was 0.62 explaining 52 percent of the variation. Thus, the analysis provided evidence of convergent validity.*

6.4-Analytic Strategy: As per the needs of the study, analytic segment have been categorised into three parts. **Initially**, Mann-Whitney (U) test has been used to measure level of financial literacy in the three different areas of business studies. **Secondly**, for measuring the dependency of level of financial knowledge on eleven specified control variables and keeping in mind of underlying assumptions, **Mann–Whitney (U) test** and **Kruskal–Wallis (H) test** have been used. Finally, **Ordinal Regression Analysis (PLUM)** and M**ultinomial Logistic Regression (MLR) model** have been used to measure the influences of multiple independent variables of financial knowledge on financial behaviour and attitudes.

STATISTICAL ANALYSIS AND DISCUSSIONS

7.1 Objective-I: To measure the level of financial literacy of millennials according to their area of studies; and **H_{01}:** Marketing, HR and Accounting/Finance group of millennials has the symmetrical level of financial literacy.

Table: 2 Strongest and Weakest Areas of Financial Literacy

Variable	Questions/Right answer	% Correct	% Incorrect	Do not Know
1. *Financial Numeracy*	*FK_1: More than Rs.1020*	79.5	15.3	5.2
2. *Inflation*	*FK_2: Less than today*	75.2	14.7	10.0
3. *Time value of money*	*FK_3: His Sibling*	15.7	70	14.3
4. *Price Index*	*FK_4: The same*	62.4	34.3	3.3
5. *Net worth*	*FK_5: The difference between outsiders Liabilities and Assets*	56.7	37.6	5.7
6. *Share market*	*FK_6: Primary market*	52.9	47.2	--
7. *Regulatory framework*	*FK_7: RBI*	89.5	10.5	--
8. *Insurance*	*FK_8: Protect you from sustaining a severe loss*	55.7	44.3	--
9. *Corporate Tax*	*FK_9: 30-35%*	28.6	71.7	--
10. *Credit intelligence*	*FK_10: Interest rate and other costs*	74.8	25.3	--
11. *Lender*	*FK_11: Bill paying record and income*	**71.4**	28.6	--
12. *Risk diversification*	*FK_12: False*	60	18.1	21.9
13. *Bond prices*	*FK_13: They will rise*	49.5	32.4	18.1

The Table-2 shows the groups of questions correspondent to each financial knowledge, as well as the percentage of correct, incorrect and "do not know" answers to each one. The question with the worst results is the one about the time value of money (FK_3). Only 15.7% of the respondents answered correctly to this question, 70% gave a wrong answer and 14.3 % do not know or did not answer. The question (FK_9), about corporate tax rate, has also one of the worst results, with only 28.6% of correct answers. The question with the best result is about the topic "Regulatory system of banks and financial institutions", composed by the question FK_7, with 89.5% of correct answers, 10.5% of incorrectly answered. Another with high result is about financial numeracy. This is composed by the question FK_1, with 79.5% of correct answers, and the questions of FK_2, and FK_10, with 79.5%, and 74.8% of correct answers, respectively.

Table:3 Tests of Normality

Variables	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Financial numeracy	*.474*	*210*	*.000*	*.516*	*210*	*.000*
Inflation	*.423*	*210*	*.000*	*.657*	*210*	*.000*
Time value of money	*.348*	*210*	*.000*	*.719*	*210*	*.000*
Price Index	*.349*	*210*	*.000*	*.789*	*210*	*.000*
Net Worth	*.312*	*210*	*.000*	*.808*	*210*	*.000*
Share market	*.283*	*210*	*.000*	*.830*	*210*	*.000*
Regulatory Framework	*.524*	*210*	*.000*	*.358*	*210*	*.000*
Insurance	*.336*	*210*	*.000*	*.808*	*210*	*.000*
Corporate tax	*.238*	*210*	*.000*	*.853*	*210*	*.000*
Credit intelligence	*.452*	*210*	*.000*	*.591*	*210*	*.000*
Lender	*.445*	*210*	*.000*	*.597*	*210*	*.000*
Risk diversification	*.305*	*210*	*.000*	*.783*	*210*	*.000*
Bond Prices	*.305*	*210*	*.000*	*.768*	*210*	*.000*
a. Lilliefors Significance Correction						

Normality Test: According to Marôco (2010), the Kolmogorov-Smirnov test is used to determine if the distribution of a given variable comes from a population with a specific distribution. Accordingly, the scholar has conducted the normality test of Kolmogorov-Smirnov, which results are presented in the table-3. Given the p-value <0, 05, so one can reject the null hypothesis of normality in all thirteen cases. So, it may be concluded that the financial knowledge of millennial does not follow a normal distribution.

Table 4 : Area Wise Measurement of Level of Financial Literacy

	RANKS			STATISTICAL SIGNIFICANCE	
Variables	**Area of Studies**	**N**	**Mean Rank**	**Test Statistics**	**Test Results**
Financial Numeracy	Marketing	70	105.84	Chi-Square	2.713
	Accounting/Finance	70	111.28	df	2
	HR	70	99.38	Asymp. Sig.	.258
	Total	210			
Inflation	Marketing	70	104.04	Chi-Square	3.156
	Accounting/Finance	70	99.44	df	2
	HR	70	113.01	Asymp.Sig.	.206
	Total	210			
Time value of money	Marketing	70	107.76	Chi-Square	2.588
	Accounting/Finance	70	97.24	df	2
	HR	70	111.49	Asymp.Sig.	.274
	Total	210			
Price Index	Marketing	70	103.59	Chi-Square	.328
	Accounting/Finance	70	108.37	df	2
	HR	70	104.54	Asymp.Sig.	.849
	Total	210			
Net Worth	Marketing	70	97.14	Chi-Square	2.479
	Accounting/Finance	70	109.66	df	2
	HR	70	109.69	Asymp.Sig.	.280
	Total	210			
Share market	Marketing	70	119.86	Chi-Square	**13.561**
	Accounting/Finance	70	86.48	df	**2**
	HR	70	110.16	Asymp.Sig.	**.001**
	Total	210			

Regulatory Framework	Marketing	70	96.97	Chi-Square	**7.979**
	Accounting/Finance	70	107.57	df	**2**
	HR	70	111.96	Asymp.Sig.	**.019**
	Total	210			
Insurance	Marketing	70	100.82	Chi-Square	.861
	Accounting/Finance	70	109.30	df	2
	HR	70	106.38	Asymp.Sig.	.650
	Total	210			
Corporate tax	Marketing	70	89.96	Chi-Square	**9.782**
	Accounting/Finance	70	120.70	df	**2**
	HR	70	105.84	Asymp.Sig.	**.008**
	Total	210			
Credit intelligence	Marketing	70	101.70	Chi-Square	.721
	Accounting/Finance	70	107.81	df	2
	HR	70	106.99	Asymp.Sig.	.697
	Total	210			
Lender	Marketing	70	102.46	Chi-Square	1.695
	Accounting/Finance	70	102.46	df	2
	HR	70	111.59	Asymp. Sig.	.428
	Total	210			
Risk diversification	Marketing	70	108.44	Chi-Square	.331
	Accounting/Finance	70	104.47	df	2
	HR	70	103.59	Asymp. Sig.	.848
	Total	210			
Bond Prices	Marketing	70	96.91	Chi-Square	2.848
	Accounting/Finance	70	112.86	df	2
	HR	70	106.72	Asymp.Sig.	.242
	Total	210			

The Table-4 represents the measurement of financial literacy based on area wise namely marketing, accounting/ finance and HR. It is clearly evident that knowledge of share market, regulatory framework and corporate tax are the three different indicators of financial literacy vary among millennials. In case of literacy about share market, significance level was less than the alpha value of .05. So this result suggests that there is a difference in financial literacy regarding share market across the different group of studies. Mean rank for the three groups presented (Table: 4) that marketing group had the highest overall ranking followed by HR group but Accounting/Finance group scored the least. Secondly, the literacy on regulatory authority is concerned (X^2=7.979; P=.001<.05) has the significant difference among the millennials. The same can be verified with the table: 4, whereas HR millennials scored the highest followed by Accounting/Finance but marketing group scored the least. In case of corporate tax, financial literacy is varied according to the area of studies at 5% level of significance. As far as mean rank is concerned, millennials of Accounting/Finance had the highest score, followed by HR group whereas, marketing group scored the least mean rank. The study is similar to the study of **Boakye and Kansanba (2013)** whereas financial literacy is highest among finance/accounting students followed by banking and finance, marketing, and human resource management students. The present study can also be verified with **Chen & Volpe, (1998);** and **Volpe et al., (1996)** concludes that non-accounting majors are more likely to be less knowledgeable about personal financial than business majors particularly in finance and accounting. In their study of **Shaari at al (2013)** also found that there is a significant relationship between financial literacy level and the respondents' Accounting/Finance Major and Non-Accounting Major. This results is supported by **Beal & Delpachitra (2003) , Chen & Volpe (1998), Peng et al. (2007), Robb & Sharpe (2009)** and **Volpe et al. (1996),** which mentions student's major courses studies in university are significant impact to personal financial literacy, and have indicated that accounting majors are more knowledge about personal finance than non-accounting majors.

Table: 5 Influences of Select Control Variables on Financial Knowledge

Code	Grouping Variable	Test Variables	Non-Parametric Test	Descriptive Statistics		Test Statistics	
RP*_1	*Gender*	*Net worth*	*Mann-Whitney U*	*Female:105* *Male: 105*	*115.50* *95.50*	**$Z=-2.66$**	**$P<.05$**
RP_2	*Study Background*	*Price Index*	*Kruskal Wallis H Test*	*Arts: 03* *Commerce:180* *Science:27*	*61.67* *103.29* *125.07*	**$X^2=6.2$**	**$P<.05$**
RP_3	*Age*	*Price Index*	*Kruskal Wallis H Test*	*20-22* *23-24* *25-26*	*108.83* *93.88* *129.11*	**$X^2=5.31$**	**$P<.05$**
		Bond Prices	*Kruskal Wallis H Test*	*20-22* *23-24* *25-26*	*100.11* *119.60* *98.06*	**$X^2=5.12$**	**$P<.05$**
RP_6	*Academic Performance*	*Share Market*	*Kruskal Wallis H Test*	*5.0-6.5* *6.5-8.5* *> 8.5*	*135.75* *102.53* *113.94*	**$X^2=5.53$**	**$P<.05$**
RP_7	*Per capita Income*	*Financial Numeracy*	*Kruskal Wallis H Test*	*Up to Rs.5000* *Rs. 5000-10000* *Rs. 10000-15000* *>Rs. 15000* *Do not know*	*99.93* *95.95* *104.47* *102.68* *139.31*	**$X^2=19.5$**	**$P<.05$**
RP_11	*Father's education*	*Time value of money*	*Kruskal Wallis H Test*	*Middle school* *High school* *Intermediate* *Bachelor* *Masters*	*122.85* *113.83* *107.78* *91.57* *109.86*	**$X^2=8.10$**	**$P<.05$**
		Net Worth	*Kruskal Wallis H Test*	*Middle school* *High school* *Intermediate* *Bachelor* *Masters*	*91.27* *78.48* *94.22* *119.18* *112.39*	**$X^2=13.8$**	**$P<.05$**
RP_12	*Mother's Education*	*Inflation*	*Kruskal Wallis H Test*	*Middle school* *High school* *Intermediate* *Bachelor* *Masters*	*106* *103* *104* *95* *127*	**$X^2=8.58$**	**$P<.05$**
		Net worth	*Kruskal Wallis H Test*	*Middle school* *High school* *Intermediate* *Bachelor* *Masters*	*101* *79* *120* *117* *106*	**$X^2=14.6$**	**$P<.05$**
		Corporate tax	*Kruskal Wallis H Test*	*Middle school* *High school* *Intermediate* *Bachelor* *Masters*	*110* *92* *106* *124* *86*	**$X^2=9.88$**	**$P<.05$**
		Credit Intelligence	*Kruskal Wallis H Test*	*Middle school* *High school* *Intermediate* *Bachelor* *Masters*	*91* *120* *108* *118* *90*	**$X^2=15.9$**	**$P<.05$**

RP* denotes respondents profile

7.2: Objective-II: To explain the dependency of financial knowledge on control variables; and $\mathbf{H_{02}}$**:** Financial literacy does not have dependency on select eleven control variables (demographic indicators).

Since all of data related with test variables (financial knowledge), falls asymmetrical distribution, the scholar used the two different non-parametric test namely Mann-Whitney (U) and Kruskal Wallis (H) test for the analyses purpose. The study used eleven different demographic features (control variables) of respondents, , namely gender, study background, age, individual responsibility, academic performance, per capita income, source of income, attended financial course, father's education, mother's education and preliminary financial knowledge etc., for understanding their impact on financial literacy. Table-5 reveals that the financial knowledge of net worth varies with the gender of the respondents, whereas rest of ten components of financial literacy does not have influences. Female scored the highest in terms of mean rank which is contrary to the study of **OSeifuah & Gyekye (2014)** showed that being male, financing college using bank loan, participation in family financial management decision and exposure to money management course showed significant on financial literacy. Knowledge about price index highly varies with the study background i.e., arts, commerce and science, whereas science background student has higher level of financial literacy. This finding is consonance with the study of **Aggarwal and Gupta, (2014)** reveals that the level of education and discipline (commerce, non commerce) influence financial literacy among youths but contrast with previous studies by **Chen and Volpe (2005)** that business students have higher personal financial knowledge compared to non business students **(Worthington, 2006; Borden et al 2006).** The Kruskal Wallis (H) test shows commerce background millennials has the highest level of competence on understanding price index in comparison to arts and science background. Price index and bond prices also show high dependency on age of the respondents, whereas other financial literacy variables are showing moderate to low level of dependency. Age group of 25-26 has the highest scores of financial literacy, whereas 23-24 age group scores the least. The result is same as **Chen & Volpe (1998), Micomonaco (2003),** and **Volpe et al. (1996)** who found out lack of financial literacy between those aged 18-24 and this is not only a result of insufficient financial-based education at the school level. Knowledge of share market operation is highly dependent on academic performance (CGPA) but all other variables shows insignificant or lower variation with the academic indicators of the respondents. Again symptoms of financial numeracy are highly dependent on the per capita income of the respondents. Further, among the financial literacy variables; time value of money and net worth are highly dependent on the father's education of respondents. In the table: 5, net worth, credit intelligence and corporate tax are highly dependent on mother's education and rest are showing moderate to low dependency.

7.3 Objective III: To find out the reflections/influences of financial knowledge on financial behaviour and attitudes; $\mathbf{H_{03}}$**:** Reflections of financial literacy on financial behaviour are very negligible; and $\mathbf{H_{04}}$**:** Influences of financial literacy on financial attitudes are not substantial.

This section having two different parts of empiricism, firstly keeping in view the nature of data, **ordinal regression analysis (PLUM)** have been performed to measure the influences of financial literacy on financial behaviour. Secondly, **Multinomial Logistic Regression (MLR)** model was used for understanding the impact of financial literacy on financial attitude.

7.3.1: Reflections of Financial Literacy on Financial Behaviour: The model fitting information gives the likelihood difference between base line and the final model (Table-6). The significant Chi-Square statistic ($P<.05$) indicates that the final model gives a significant improvement over the intercept only model. Hence, the null hypothesis (H_0) that there is no significant impact of independent variables of financial literacy on financial behaviour is rejected at .1% level of significance ($P<0.001$).

Table:6 Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	*1309.149*	---	---	---
Final	*897.827*	*411.321*	*36*	*.000*
Link function: Complementary Log-log.				

Table:7 Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	*5543.186*	*5978*	*1.000*
Deviance	*1233.631*	*5978*	*1.000*
Link function: Complementary Log- log.			

The Pearson and Deviance goodness-of-fit (table-7) measures reveal the fact that the model adequately fits the data, the significance value being greater than 0.05. So it can be concluded that the data are consistent with the model assumptions. Therefore, the assumption of good fit is accepted.

Table 8. Pseudo R-Square

Effect Size	Strength
Cox and Snell	*.859*
Nagelkerke	*.860*
McFadden	*.308*

Table 9. Test of Parallel Lines[b]

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	*897.827*			
General	*.000*	*897.827*	*1080*	*1.000*
b. Link function: Complementary Log-log.				

Further, to assess the impact of financial literacy on financial behaviour the **Pseudo R-Square** (effect size) is used (table: 8). In this case, Cox and Snell, Nagelkerke and McFadden R-square value provide an induction of the amount of variation in the dependent variable. Here the Pseudo R^2 value of Nagelkerke=.860 suggesting that 86% of the variability in financial behaviour is explained by the thirteen financial literacy variables used in this model. Further, null hypothesis states (table: 9) that the slope coefficients in the model are the same across the response categories. The significance P=1.000>0.05 indicated that there was no significant difference for the corresponding slope coefficients across the response categories, suggesting that the model assumption of parallel lines is not violated. The inference is consistent with **Cole et al (2014)** on their experimental study of financial education and its effects on financial behaviour and outcome in South Africa, found that financial knowledge has a positive effect on improving saving behaviour, low interest for loan application. Previous research has also found that financial literacy can have important implications for financial behaviour. People with low financial literacy are more likely to have problems with debt **(Lusardi and Tufano 2009),** less likely to participate in the stock market **(Van Rooij *et al.* 2007),** less likely to choose mutual funds with lower fees (**Hastings and Tejeda-Ashton 2008),** less likely to accumulate wealth and manage wealth effectively **(Hilgert et al 2003, Stango and Zinman 2007)** and less likely to plan for retirement **(Lusardi and Mitchell, 2007).**

7.3.2: Reflections of financial literacy on Financial Attitude: In the study of **Danes (1994)** mentions that a higher level of financial literacy influences financial knowledge, attitudes, and behaviours. Financial education increases financial knowledge and affects financial attitudes **(DeVaney *et al.* 1996, Grable and Joo 1998).** Increased financial knowledge is also found to influence students' attitudes positively towards business in general and their ability to be wise consumers in society **(Langrehr 1979).**

Table: 10- Model Fitting Information

	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC	BIC	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	*1.215E3*	*1.288E3*	*1.171E3*			
Final	*2.409E3*	*5.280E3*	*692.679*	*478.041*	*836*	*.03*

The table: 10 reveals that initial Log likelihood value obtained for the model with no independent variables is 1.171E3. The final log likely hood model value acquired for the model considering all independent variables is 692.679 and the chi-square value is 478.041. The significant chi-square statistic indicates that the final model gives a significant improvement over the baseline intercept-only model.

The Pearson and Deviance goodness-of-fit measures (Table-11) reveal the fact that the model adequately fits the data, as the significance value (.08) being greater than 0.05. This suggested that the existence of relationship between the dependent variables and the dependent variables are supported.

Table: 11 Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	*83336.580*	*3432*	*.09*
Deviance	*675.319*	*3432*	*1.000*

Table: 12 Pseudo R-Square

Cox and Snell	.897
Nagelkerke	*.900*
McFadden	*.400*

To assess the impact of financial knowledge on individual's financial attitude the Pseudo R-square is used in table-12. A good R^2 is totally depends of the quality and outcome of the explanatory variable. The same table, shows the **Pseudo R^2 values** (Cox and Snell R^2=.897) indicates that 90% of variance in financial attitude is explained by the financial literacy variables.

Table-13 Likelihood Ratio Tests

Variables	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC of Reduced Model	BIC of Reduced Model	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	2.409E3	5.280E3	6.927E2[a]	.000	0	.
FK_1	2.605E3	5.256E3	1.021E3[b]	328.699	66	.000
FK_2	2.344E3	4.994E3	7.595E2[b]	66.842	66	.448
FK_3	2.337E3	4.988E3	7.531E2[b]	60.374	66	.672
FK_4	2.396E3	5.047E3	8.123E2[b]	119.670	66	.000
FK_5	2.405E3	5.056E3	8.214E2[b]	128.748	66	.000
FK_6	2.313E3	4.964E3	7.293E2[b]	36.590	66	.999
FK_7	1.876E3	4.527E3	2.917E2[b]	.	66	.
FK_8	2.419E3	5.070E3	8.348E2[b]	142.161	66	.000
FK_9	2.346E3	4.997E3	7.622E2[b]	69.480	66	.361
FK_10	2.296E3	4.947E3	7.118E2[b]	19.149	66	1.000
FK_11	1.990E3	4.641E3	4.057E2[b]	.	66	.
FK_12	2.362E3	5.087E3	7.340E2[b]	41.344	44	.586
FK_13	2.361E3	5.012E3	7.767E2[b]	83.996	66	.047

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

b. Unexpected singularities in the Hessian matrix are encountered. This indicates that either some predictor variables should be excluded or some categories should be merged.

The likelihood ratio test (table: 13) evaluates the overall relationship between independent variables and dependent variable. In case of financial attitude, there is significant relationship between the independent financial literacy variables and dependent variables of financial attitudes namely financial numeracy (.000), price index (.000), net worth (.000), insurance (.000) and risk diversification (.047) at 5% level of significance. Thus only five variables of financial literacy have the significant relationship with financial literacy and rest are found insignificant relationship. The finding is same of **Ibrahim, Harun, and Isa (2009)** whereas correlation was found between financial literacy and financial attitude. Those who had higher level financial attitude have higher level of financial literacy**.** The similar observation made by **Agarwalla et al (2013), Jorgensen (2007)** that financial knowledge, attitudes and behaviours are also positively correlated, thus, students with better financial knowledge tend to adopt more appropriate financial attitudes and behaviours.

CONCLUSIONS AND POLICY IMPLICATIONS

Financial literacy has been measured with thirteen odd questions of business, based on most cited literatures. It is found that more than 70% of students answered correctly the questions related with financial literacy, inflation, regulatory framework, credit intelligence and lender. Whereas, 50-60% of students answered correctly the questions of price index, net worth, share market, insurance and risk diversification. The worst condition in case of time value of money and corporate tax whereas only less than 30% of respondents answered correctly. Statistical measurement of **Kruskal-Wallis (H) test** reveals only three different cases namely share market, regulatory framework, and corporate tax is highly dependent on area wise (marketing, accounting/finance, and HR group) millennials but all other variables shows insignificant or lower variations. It can be concluded that PG group of millennials are having moderate financial literacy and lesser variations of literacy level among marketing, accounting/finance and HR group.

Data reveals through **Kruskal-Wallis (H)** test indicates that few indicators of financial literacy are dependent on seven control variables namely gender, study background, age, academic performance, per capita income, father's and mother's education, whereas source of income, attended financial course and mentoring does not have any influences on financial literacy. The study found that knowledge about time value of money, net worth, inflation and corporate tax are highly dependent on parent's education, whereas other variables of financial literacy are showing moderate to lower level of dependency.

In order to know the reflections of financial literacy on financial behaviour, ordinal regression has been applied using **PLUM (Polytomous Universal Model).** The PLUM analysis reveals that it creates a significant difference on financial behaviour as the Pseudo R-Square statistics **(Cox and Snell R^2)** of 0.859 shown a substantial influence on financial behaviour. Reflections of financial knowledge on financial attitude have been measured using **Multinomial Logistic Regression (MLR)** Model. The Pseudo R Square statistics **(Cox and Snell)** of .897 indicated a significant variation on financial attitude. The likelihood ratio test indicates that five indicators of financial literacy out of thirteen variables are found statistically significant at 5% level of significance.

Moderate level of financial literacy among PG students especially accounting/ finance group of a institution of national importance and positive influences globally accepted construct on financial literacy and attitude indicates university has to adopt a horizontal enrichment of financial education system. The policy implication of the study is to adopt the social learning theory **(Bandura, 1977)** and family resource management theory **(Deacon and Firebaugh, 1981)** in a way that considers environmental influences that shape the overall growth to financial literacy. According to family resource management theory, students' financial behaviour is influenced by their demands and available resources (i.e., values, attitudes, knowledge, and personal characteristics). Social learning theory explains that available resources increase from learning developmentally through interaction with the environment **(Bandura 1977),** which have been identified as parental and peer influences. As students learn over the years through social interaction they begin to understand and form their values, knowledge, and attitudes about finances **(Bandura 1977; 1986; John 1999).** Family, friends, school, and media all shape college students' knowledge and attitudes over time **(Bubolz and Sontag 1993).** For behavioural change to take place and be significant, knowledge and attitudes must change **(Hayhoe *et al.* 2005, Miller and C'de Baca 2001).** The study recommends the need for undergraduate students to be involved in financial literacy programs at any point during their studies in the line of developed nations. The rising need for financial literacy programs is also prominent in developed countries such as US **(Boyland & Warren, 2013),** UK (***Adult financial literacy advisory group (AdFLAG),* 2000**), Australia **(Fry, Mihajilo, Russell, & Brooks, 2006),** and New Zealand and Japan **(Cameron, Calderwood, Cox, Lim, & Yamaoka, 2013).**

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An Empirical Study of Corporate Environmental Accounting and Reporting of Different Groups of Selected Companies in India

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ABSTRACT

The field of environmental accounting has made great tides in the past two decades, moving from a rather arcane endeavor to one tested in dozens of countries and well established in a few. The industrial activities are directly or indirectly responsible for various environmental problems. Such as soil erosion, land degradation, over exploitation of natural resources, pollution of water, air, noise, light, marine etc.

Financial reporting is a social activity. The present form of accounting reports and the standards used to prepare them reflect our business values. Environmental awareness within the management community is reflected in frequent coverage of sustainability and environmental responsibility in management oriented publications. These social developments create a need for financial information. If the trend towards increased corporate responsibility for environmental impacts continues then accounting practice will ultimately reflect this.

The present study has been undertaken to find out the performance regarding Environmental Reporting Practices in corporate sector as specially engaged in production areas and chemical sector in India. This paper has been containing following aspects:

Concepts
Review of Literature
Research methodology
Environmental Accounting And Reporting Practices In India
New Concepts in Environmental Accounting
Findings and Suggestions & Conclusion

This paper consists of 50 industrial units (in five groups) covering conceptual as well as practical aspects on corporate Environmental Reporting. This paper can be useful to various industrial units and segments of society viz. to researchers, teachers, and executives of the companies, law makers and Government, accounting practitioners, management, consultants, financial managers and students preparing for professional and comparative examinations.

Key words

Environment, Land Degradation, Corporate Social Responsibility, TQM, Carbon Credit and Global warming

INTRODUCTION

Private sector and public sector organizations, including private listed companies, government departments, statutory authorities and government business enterprises are under increasing pressure to disclose information about the organization's interaction with the natural and physical environment. In some instances, changes have been demanded by parliamentary committees which signal increasing scrutiny of environmental disclosures in annual reports.

These contributions are limited and non - renewable. The main objective of environmental accounting is to encourage sustainable economic development by improving the knowledge and understanding of the increasing interactions between the environmental and the economy. The environmental accounting makes three vital conditions to the economy.

1) Source of energy and material.
2) Sink for dissipated energy and pollution
3) Living space for living being

ENVIRONMENTAL ACCOUNTING

Environmental accounting has been accepted as an umbrella term with the various meaning and uses. Basically, the environmental accounting is the treatment of various environmental issues of the corporate within the financial statements. Environmental accounting includes estimation of environmental expenditures, its actual determination, and recognition of environmental liabilities as well as, disclosure of all environmental liabilities in a specific section of the annual reports of a company. The modern business approaches like activity based management costing; TQM, business process-reengineering, life cycle designing, life cycle assessment, life cycle costing, etc. provide the platform for integrating environmental information into business decisions.

In fact, it is a new branch of accounting with no hard and fast rules, no standards or no legal compulsions on companies part to account and report for the environmental issues that is why certain socially conscious corporate houses are reporting about the impact of their activities on the environment in the director's report or separately. Generally the companies are disclosing following information in their annual reports:

- Pollution prevention and control.
- Accumulation of current environmental costs.
- Physical data related to the reduction of waste.
- Present and future costs for products as well as processes re-design.
- Estimation of future environmental costs and benefits.

Environmental Reporting - the use of data about environmental costs and performance and its primary purpose to support managerial decisions such as

- For better environmental performance.
- Investing in cleaner technology.
- Developing greener processes or products.
- Decisions regarding product retention, production processes, etc.
- Meeting with the global standards imposed by WTO and GAAP.
- Framing for environmental policies and strategies.

There is no standard definition of natural resources and environmental accounting. The term environmental accounting could, in general sense, be used to indicate, taking an account of the environment and changes in it, and integrating the results with the system of SNA so as to provide a valuable information base for planning and laying policies for the integrated sustainable development and growth of the nation.

According to Shradhdha Singh, "Environment is the sum of all Social, Economical, Biological factors, which constitutes the surroundings of man who is both creator and molder."

The study of the inter-relationship between organisms and their environment, as the economy of nature and as the biology of eco-system"

According to FEE (1995) give a definition: "Environmental Accounting concerns the treatment of environmental issues within the financial statements and within environmental evaluations." Environmental reporting goes usually beyond financial reporting and might take place in a separate report or in separate sections of the glossy brochure (out-side the financial statements)."

Environmental Accounting - the entire domain of accounting for the Environment including: financial accounting, reporting and auditing and environmental management accounting. Thus, Environmental Accounting is a comprise of

(i) Accounting Aspect of Environment of concern

(ii) Reporting Aspect of Environment of a concern

(iii) Auditing Aspect of Environment of a concern and

(iv) Environmental Management Accounting of a concern.

a) Full cost accounting. c) Life-cycle costing.

b) Benefits assessment. d) Strategic planning.

ENVIRONMENTAL REPORTING

Environmental reporting is disclosure of information relating to environment in annual reports or by some other medium like in environmental policy statements or corporate environmental reports (CER). Some important definitions of the term environmental reporting are:

"Environmental reporting covers the preparation and provision of information, by management, for the use of multiple stakeholder groups (internal or external), on the environmental status and performance of their company or organization. This information is most often provided in a separate environmental report, but it may be included in other forms of reporting."

"Environmental reporting is the term now commonly used to describe the disclosure by an entity of environmentally related data, verified or not, regarding environmental risks, environmental impacts, policies, strategies, targets, costs, liabilities or environmental performance to those who have interest in such information; as an aid to enabling/ enriching their relationship with the reporting entity via either

- the annual report and accounts package;
- a stand-alone corporate environmental performance report (ECER);
- a site-centered environmental statement; or
- Some other medium (e.g. staff newsletter, video, CD -ROM, internet site)."

These days, environmental reporting is described either as a branch of the corporate governance tree, or as one aspect of the so-called 'triple bottom line'-whereby data on financial results, environmental performance and social impact are brought together in what might be termed as a sustainability report.

"Corporate environmental reporting should include environmental protection initiatives taken by the enterprise, the adverse impact of its production process and products on the environment both in quantitative and qualitative terms and its initiatives in process and product innovations in order to achieve sustainable growth."

Thus, environmental reporting refers to the disclosure of environment related information by a company regarding Environmental risks, impacts, policies, strategies, targets, costs and liabilities to the interested stakeholders through the annual report or some other medium like video, Internet or staff newsletter.

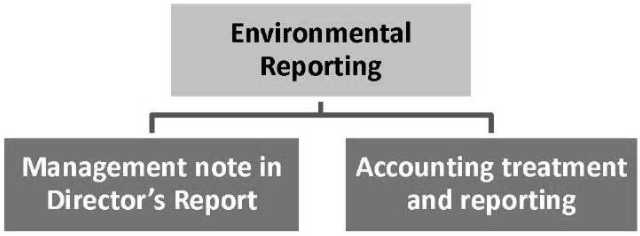


Fig. 1. Disclosure of accounting policies for

(i) Recording liabilities and provisions,

(ii) Setting up catastrophe reserves and

(iii) Disclosure of contingent liabilities.

LITERATURE REVIEW

Today, protection of environment is the burning issue in India; very few studies have been conducted in the area of environment. As far as environmental accounting and reporting is concerned, researcher has referred some books, websites and journal before and during the study.

Researcher had reviewed the past few years published literature and data available from various publications, some research work is certainly available which is described as follows.

Study - 1

Corporate Environmental Accounting and Reporting (A Book)

Researcher

Dr. Alok Kumar Pramanik

Publication year and ISBN No.

2008: ISBN 978-81-8457-077-9

Summary

The book has focused on Corporate Environmental Accounting and Reporting. The study has taken sufficient care to analyse and discuss the different aspects of corporate environmental accounting and reporting practices. This analysis based upon the different reports published and research studies conducted by the different organizations and academicians of different countries The Book has been divided into seven segments.

1. Introduction
2. Environmental Accounting: Concept, Objectives and benefits

3. Corporate Environmental Accounting: Guidelines and standards
4. Environmental Reporting: Emergence and Relevance
5. Framework of Corporate Environmental Reporting: Global Scenario
6. Environmental Accounting and Reporting Practices: Global Study
7. Conclusion and Suggestion

The Book highlights on corporate environmental accounting and reporting practices. The last part of the book is concluding remarks. This part has also covered few suggestions that the absence of standardized environmental accounting practices and disclosure techniques at both the national and international levels as well as legal enforcement spur the advocated the environmental accounting practices to consider other alternatives from a global perspective.

Study - 2

Environmental Accounting and Reporting - Theory, Law and Empirical Evidence (A Book)

Researcher

Dr. Shuchi P. Aahuja

Publication year and ISBN No.

September 2009: ISBN 978 - 81 - 7708 - 220 - 3

Summary

The book has focused on Environmental Accounting and Reporting - Theory, Law and Empirical Evidence. This book provides a broad introduction to the whole area of environmental accounting and reporting (EAR). It covers environmental accounting, environmental reporting and environmental auditing together as these are interrelated and form a very important part of a company's comprehensive environmental management system. The Book has been divided into seven segments.

1. An Introduction
2. Environmental Accounting and Reporting: concept and Theoretical Framework.
3. Environmental Accounting and Reporting: Regulatory Framework
4. Existing Studies and their Critical Evaluation
5. Corporate Environmental Accounting and Reporting Expectation Gap: Evidence from India.
6. Environmental Disclosure Practices of Selected Companies
7. Summary, Conclusion and Suggestions.

The Book highlights on environmental accounting and reporting practices. The last part of the book is concluding remarks. The present study has covered three areas namely, environmental accounting, reporting and auditing. Keeping in view the observation of the study, suggestions have been made in each of these three areas. The recommendations are for the benefit of professional accounting bodies, governments, regulatory authorities, professional accountants, companies, and various stakeholders.

Study - 3

Corporate Environmental Accounting and Reporting (A Book)

Researcher

Prof. C. K. Sonara

Publication year and ISBN No.

2010: ISBN 978-81-9099-063-9

Summary

The book has focused on Corporate Environmental Accounting and Reporting. The study has taken sufficient care to analyse and discuss the different aspects of corporate environmental accounting and reporting practices. This analysis based upon the different reports published and research studies conducted by the different group wise organizations and academicians of India. The Book has been divided into six chapters.

1. Introduction
2. Research Methodology
3. Globle Environmental Reporting
4. Corporate Environmental Accounting Practices in India
5. Environmental Reporting - Problems and Prospects
6. Findings and Sugg estion

The Book highlights on corporate environmental accounting and reporting practices. The last part of the book is findings and suggestion. This part has also covered few suggestions that the absence of standardised environmental accounting practices and disclosure techniques at the national levels as well as legal enforcement spur the advocated the environmental accounting practices to consider other alternatives from a global perspective.

Study - 4

Corporate Environmental Accounting and Reporting: An Empirical Study of Different Groups of Selected Companies in India (A Book)

Researcher

Prof. C. K. Sonara

Publication year and ISBN No.

2014: ISBN 978-93-81761-72-4

Summary

The book has focused on Corporate Environmental Accounting and Reporting: An Empirical Study of Different Groups of Selected Companies in India. The study has taken sufficient care to analyse and discuss the different aspects of corporate environmental accounting and reporting practices. This analysis based upon the different reports published and research studies conducted by the different group wise organizations and academicians of India. The Book has been divided into six chapters.

1. Introduction
2. Review of Literature
3. Research Methodology and Profile of Selected Groups of Companies
4. Corporate Environmental Accounting and Reporting Practices of Selected Groups of the Companies in India
5. Corporate Environmental Accounting and Reporting - Problems and Prospects
6. Findings and Suggestion

The Book highlights on corporate environmental accounting and reporting practices. The last part of the book is findings and suggestion. This part has also covered few suggestions that the absence of standardised environmental accounting practices and disclosure techniques at the national levels as well as legal enforcement spur the advocated the environmental accounting practices to consider other alternatives from a global perspective.

Study - 5

A Book of Murthy, N. B.

Murthy, N. B. has written a book on "Environmental Awareness and Protection" published by Deep & Deep Publication, New Delhi in 2004.

This book deals with various aspects of environment and ecology. Contents of the book are as follows:

Men and Equipment

Agriculture

Mountains

Forests & Wild Life Protection Environmental Education

The book opens up newer horizons on the important subject of environment studies and recommended as a study material for researcher and Government for protection of environment.

RESEARCH METHODOLOGY

The research work seeks to provide evidence on corporate disclosure practice and polices of companies operating in India. For the same purpose, the annual reports of 50 companies belonging to various industries such as Cement Industries, Textiles Industries, Chemicals & Fertilizers, Steel & Engineering and Oil Refineries & Petroleum etc. have been selected for the study.

OBJECTIVES OF THE STUDY

The main objectives of the study are stated below:

(1) To study the origin and to review the growth of Environmental Reporting in corporate sectors.

(2) To know the Environmental Reporting and disclosure practices in corporate sectors.

(3) To find out the matters whether awareness regarding environment of the corporate sectors.

(4) To derive conclusion and suggest measures for effective Environmental Accounting and Reporting Practices in corporate sectors.

(5) To suggest for the improvement in quality or environment, resulting from control the pollution and damages of natural resources.

Sample Design

There are various aspects of scientific research process. When we have to determine the problem for research, at that time some of the decided units are selected for the study. The units must be adequate in the term of area, size, production and services. The researcher has selected 50 companies for the study but he has studied only 30 companies from various groups of the companies of India.

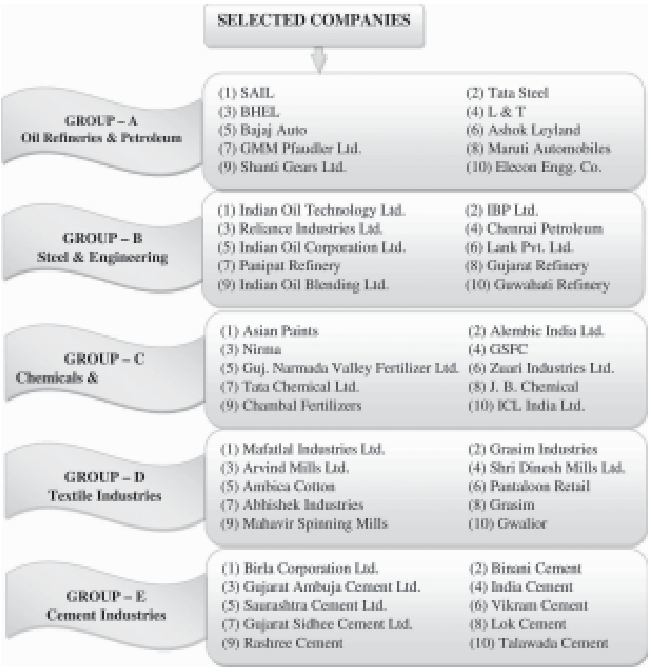


Fig. 2

Period of the Study

A study of Corporate Environmental Accounting and Reporting is for the period from the year of 2006-07 to 2010-11.

Limitations of the Study

(1) The study is mainly based on the secondary data and supported by the primary data.

(2) The period of the study is from the year of 2006-07 to 2010-11.

(3) The study has considered 30 units of the manufacturing companies. All these companies have been divided into five groups, i.e. Oil Refineries and Petroleum, Steel & Engineering, Chemicals & Fertilizers, Textile Industries, and Cement Industries working in India.

(4) The opinion of the person may be differing from time to time.

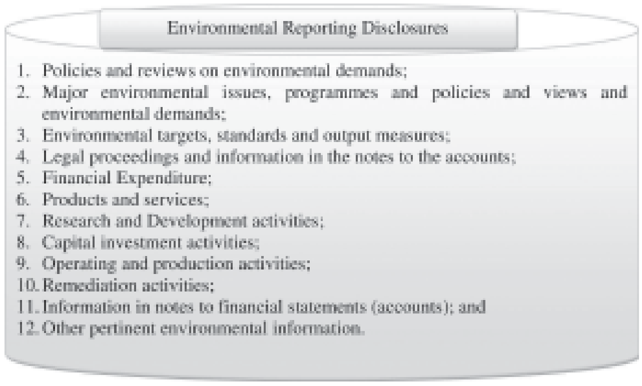
(5) The data of the Environmental Accounting and Reporting is available from the Annual Reports of the selected companies for analysis.

Environmental Disclosures

UNCTAD survey on environmental disclosure involving 203 responding corporations covered the 12-point information disclosure.

Environmental Reporting Disclosures

1. Policies and reviews on environmental demands;
2. Major environmental issues, programmes and policies and views and environmental demands;
3. Environmental targets, standards and output measures;
4. Legal proceedings and information in the notes to the accounts;
5. Financial Expenditure;
6. Products and services;
7. Research and Development activities;
8. Capital investment activities;
9. Operating and production activities;
10. Remediation activities;
11. Information in notes to financial statements (accounts); and
12. Other pertinent environmental information.



(Source: UNCTAD: International Accounting and Reporting Issues - 1992, III, p. 39.)

Fig. 3

ENVIRONMENTAL ACCOUNTING AND REPORTING PRACTICES IN INDIA

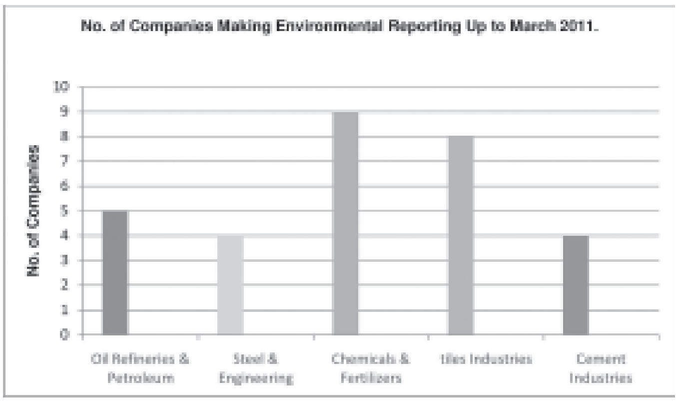
Being a developing country, India faces the common problems of the third world. Moreover, with the introduction of the Panchayat Raj Act by the 73 Amendment of the Constitution which envisages the decentralization of the administration at the district and village levels by formation of district jilla parishads and village panchayats, the importance of such data and their services have further enhanced.

Few states taking advantage of the Liberalization Policy have liberalized the rules for extraction of minerals and use of other natural resources without caring for the future. It will be in fitness of the situation if a levy is imposed on extraction and uses to be used, and compensate the loss which the future generation may suffer on account of liberalization policy.

Table 1. Group-wise Number of Companies making Environmental Reporting up to March, 2011

Groups of the Industries	No. of Sample Companies	No. of Companies making Environmental Reporting	(%)
Group A *Oil Refineries & Petroleum*	10	05	50%
Group B *Steel & Engineering*	10	04	40%
Group C *Chemicals & Fertilizers*	10	09	90%
Group D *Textiles Industries*	10	08	80%
Group E *Cement Industries*	10	04	40%
Total	**50**	**30**	**60%**

(Source: Compiled from Annual Reports of the selected companies.)



Graph - 1

The group- wise number of companies making environmental Reporting has been shown in above Table - 1.

I have selected 50 companies for the study of the environmental reporting in India. It has been decided into five activity based groups.

As we have come to know from the disclosure of the companies, related environmental issues are not mandatory in India. That's why 60% of the selected companies were making Environmental reporting in their Annual Reports.

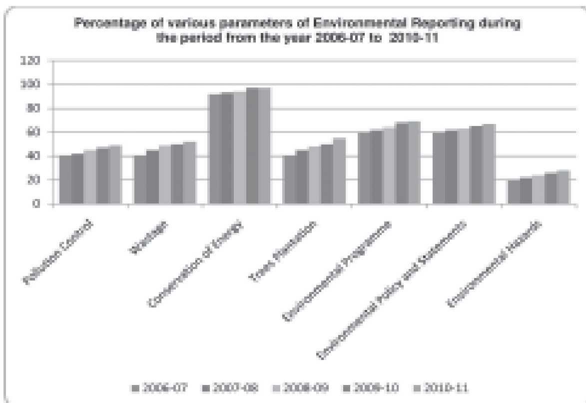
As far as industry-wise disclosure is concerned. Table - 1 shows that Chemicals & Fertilizers has highest ranked in Environmental Reporting, i.e. 90%, followed by textiles industries has ranked second highest i.e.80%, third rank oil refineries and petroleum i.e. 50% and steel & Engineering and cement industries has equal Fourth rank i.e. 40% comparatively lower than Chemicals & Fertilizers groups.

Table 2. Percentages of Various Parameters of Environmental Reporting during the Period from the year 2006-07 to 2010-11

(Figures in percentages)

Sr. No.	Parameters of Environmental Reporting	2006-07	2007-08	2008-09	2009-10	2010-11
1.	*Pollution Control*	40	42	45	47	49
2.	*Wastage*	40	45	49	50	52
3.	*Conservation of Energy*	92	93	94	97	97
4.	*Trees Plantation*	40	45	48	50	55
5.	*Environmental Programme*	60	62	64	68	69
6.	*Environmental Policy and Statements*	60	62	63	65	67
7.	*Environmental Hazards*	20	22	24	26	28

(Source: Compiled from Annual Reports of the selected companies.)



Graph - 2

Almost all the selected companies were making disclosure about conservation of energy during the period from the year 2006-07 to 2010-11.

It was 92% in the year 2006-07, it has increased up to 97% in the year of 2010-11. It was 93% and 94% in the year of 2007-08 and 2008-09 respectively. It is showing increasing trend in conservation of energy during the period from 2006-07 to 2010-11.

60% of the making Environmental Reporting are disclosing the environmental issues in their environmental policy and statements in the year of 2006-07. It has increased up to 67% in the year of 2010-11 during the period from 2006-07 to 2010-11 of the 30 companies making Environmental Reporting in India.

60% of the companies have disclosed contents such as amount spent on Environmental Programme in the year of 2006-07. It has increased 69% in the year of 2010-11.

It has noted that most of the industrial units have disclosed about the preventive steps which they have taken for the protection of environment rather than the effect of their operations on the environment. That's why disclosures about Environmental Hazards and Pollution Control were low percentage in implementation by selected companies during the period from 2006-07 to 2010-11under study. The analysis of annual reports of sample companies also shows that old and reputed companies are more conscious about the disclosure of environmental issues as compared to the new companies.

Table 3. Group-wise mode of Environmental Reporting

Groups of the Industries	No. of Companies making Environmental Reporting	Director's Report			
		Fin.	Qty.	Dctv.	Grp.
A Oil Refineries & Petroleum	04	1	2	2	-
B Steel & Engineering	08	-	3	4	1
C Chemicals & Fertilizers	09	2	3	4	-
D Textiles Industries	04	-	3	2	-
E Cement Industries	05	1	2	3	-
Total	**30 (60%)**	**4 (13%)**	**13 (43%)**	**15 (50%)**	**1 (3%)**

(Source: Compiled from Annual Reports of the selected companies.)

(Fin. - Financial; Qtv. - Quantitative; Dctv. - Descriptive; Grp. - Graphical)

It is clear from the Table- 3 that industries are reporting environmental issues in the director's report in the descriptive statement. It is also observed that 50% companies are presenting environmental disclosure through descriptive statement and 43% of the companies are making environmental disclosure through quantitative and 13% and 3% of the companies were making financial and graphical presentation respectively.

HYPOTHESIS TESTING

Hi There is no significant difference between the percentages of environmental reporting for various parameters.

Table 4. Descriptive Summary of Environmental Reporting for Various Parameters

Parameters	N	Mean	Std. Deviation	Std. Error
Pollution Control	5	44.60	3.647	1.631
Wastage	5	47.20	4.764	2.131
Conservation of Energy	5	94.60	2.302	1.030
Tree Plantation	5	47.60	5.595	2.502
Environmental Programming	5	64.60	3.847	1.720
Environmental Policy	5	63.40	2.702	1.208
Environmental Hazards	5	24.00	3.162	1.414
Total	35	55.14	21.002	3.550

Table 5. ANOVA

	Sum of Squares	df	Mean Square	F	(p-value) Sig.
Between Groups	14577.486	6	2429.581	162.436	.000
Within Groups	418.800	28	14.957		
Total	14996.286	34			

As p-value is less than 0.05, there is a significant difference between the environmental reporting values of various parameters.

Next table gives the Tukey's Homogeneous Significant Difference between various environmental parameter values.

Table 6. Tukey's Homogeneous Significant Difference

Environmental Reporting Parameters	N	Subset for alpha = 0.05			
		1	2	3	4
Environmental Hazards	5	24.00			
Pollution Control	5		44.60		
Wastage	5		47.20		
Tree Plantation	5		47.60		
Environmental Policy	5			63.40	
Environmental Programming	5			64.60	
Conservation of Energy	5				94.60
Sig.		1.000	.878	.999	1.000

(The mean values of the parameters which are homogeneous are displayed in the same column)

There is no significant difference between Environmental reporting values of Pollution control, Wastage and tree plantation.

There is no significant difference between Environmental reporting values of Environmental policy and environmental programming.

NEW CONCEPTS IN ENVIRONMENTAL ACCOUNTING

Global Warming

Global warming means it is earth's surface based upon worldwide temperature record that have been maintained by human since 1880[s]. It is the combined result of human based emissions of greenhouse gases and change in solar irradiance. In short the heat spread all over the world on the surface of the land and ocean during the months from January to December. It is called global warming.

According to World Metrological Organization (WMO), the decade 1998 - 2007 is the warmest on record.

Pollution control is to reduce the diverse effects of the global warming. Therefore, Government and industries must be aware of environmental damages.

A simple definition for climate change in relation to the warming of the planet would be one that gets the gist without excluding the simplicities. The simplest and most accurate definition is that climate change is the effect greenhouse gases have on the earth's climate. Greenhouse gases include, but are not limited to, carbon dioxide and methane. Going by the graphs and tables we were shown in the lecture, climate change is an undeniable truth. Climate change is actually a naturally occurring phenomenon unbeknown to most, but human actions are speeding up the reaction. Greenhouse gases shouldn't be seen as a bad thing because they are a necessary part of our planet. If we didn't have them the earth temperature would average zero degrees.

Reasons of Global Warming

(1) Human activities have been one of the warming or the earth's climate system. Every environmental variables, there are multiple factors that contribute to the warmth of the earth.

(2) Earth's annual average temperature also one of the factors leading to the scientific conclusion that the earth is now in a period of global warming.

(3) The combined radiative forcing due to increases in Carbon Dioxide, Methane and Nitrous Oxide is the largest climate driver.

(4) The combined radiative forcing of human - produced green house gases, causing a net warming.

(5) The Troposphere Ozone change is the one of the reason of global warming.

(6) Industrial pollution also a reason of the global warming.

Carbon Credit

The Environment Protection Authority of Victoria defines a carbon credit as "a generic term to assign a value to a reduction or offset of greenhouse gas emissions, usually equivalent to one tonne of carbon dioxide equivalent (CO2-e)".

Carbon credits and carbon markets are a component of national and international attempts to mitigate the growth in concentrations of greenhouse gases (GHGs). One carbon credit is equal to one metric tonne of carbon dioxide, or in some markets, carbon dioxide equivalent gases. Carbon trading is an application of an emissions trading approach. Greenhouse gas emissions are capped and then markets are used to allocate the emissions among the group of regulated sources.

Carbon credits are certificates issued to countries that reduce their emission of GHG (greenhouse gases) which causes global warming. Carbon credits are measured in units of certified emission reductions (CERs). Each CER is equivalent to one tonne of carbon dioxide reduction. Its rate stood at 22 Euros in April, fell to below 7 Euros, before stabilizing at 12-13 Euros. Under IET (International Emissions Trading) mechanism, countries can trade in the international carbon credit market. Countries with surplus credits can sell the same to countries with quantified emission limitation and reduction commitments under the Kyoto Protocol. Developed countries that have exceeded the levels can either cut down emissions, or borrow or buy carbon credits from developing countries. The UNFCCC divides countries into two main groups: A total of 41 industrialized countries are currently listed in the Convention's Annex-I, including the relatively wealthy industrialized countries that were members of the Organization for Economic Co-operation and Development (OECD) in 1992, plus countries with economies in transition (EITs), including the Russian Federation, the Baltic States, and several Central and

Eastern European States. The OECD members of Annex-I (not the EITs) are also listed in the Convention's Annex-II. There are currently 24 such Annex-II Parties. All other countries not listed in the Convention's Annexes, mostly the developing countries, are known as non-Annex-I countries. They currently number 145. Annex I countries such as United States of America, United Kingdom, Japan, New Zealand, Canada, Australia, Austria, Spain, France, Germany etc. agree to reduce their emissions (particularly carbon dioxide) to target levels below their 1990 emissions levels. If they cannot do so, they must buy emission credits from developing countries or invest in conservation. Countries like United States of America, United Kingdom, Japan, Newzealand, Canada, Australia, Austria, Spain etc are also included in Annex-II. Developing countries (non-Annex I) such as India, Srilanka, Afghanistan, China, Brazil, Iran, Kenya, Kuwait, Malaysia, Pakistan, Phillippines, Saudi Arabia, Sigapore, South Africa, UAE etc have no immediate restrictions under the UNFCCC. This serves three purposes:

A) Avoids restrictions on growth because pollution is strongly linked to industrial growth, and developing economies can potentially grow very fast.

B) It means that they cannot sell emissions credits to industrialized nations to permit those nations to over-pollute.

C) They get money and technologies from the developed countries in Annex II.

Carbon Credit Business

Driven by its strong beliefs in the principles of Sustainable Development and Corporate Social Responsibility, GFL has developed a UNFCCC-compliant Clean Development Mechanism Project, which earns "carbon credits" by the thermal oxidation of a waste gas, HFC23, in its refrigerant gas manufacturing plant, This was the first CDM Project in the world to seek registration under the Kyoto Protocol, and has been approved by the Governments of India, United Kingdom, Netherlands, Japan and Italy. Since commencement, this project has reduced 13 million tones of greenhouse gas emissions, and the carbon credits so earned have been sold to leading companies across the globe for compliance purposes.

MAJOR FINDINGS

The present study was undertaken on the topic of Corporate Environmental Reporting for the type of investigation. The various aspects of the reporting relating to the Environment, Received Environment Award, Environmental Accounting in India, Mode of Environmental Reporting and Parameters of Environmental Reporting etc. were studied in detail during the period from the year of 2006-07 to 2010-11.

(1) Up to March, 2010-11 this study is consisted of 30 units of the corporate having 05 groups of sector working in India in different discipline and groups during the period from the year of 2006-07 to 2010-11.

(2) There are 05 various groups have been selected for the study up to March, 2010-11. i.e.

(A) Oil & refineries Companies

(B) Chemicals & Fertilizers

(C) Steel & Engineering Companies

(D) Textiles Industries

(E) Cement Industries

(3) As we have come to know from the disclosure of the selected companies, related environmental issues are not mandatory in India that's why 60% of the selected companies were making Environmental Reporting in their Annual Reports.

(4) As for our industry wise disclosure is concerned, Chemicals & Fertilizers has ranked highest in Environmental Reporting i.e. 90% because they are aware about dangerous effect of them to environment.

(5) We found by analysis and interpretation of the data available from the Annual Reports of the companies, that 97% of them were disclosing about energy conservation in the year of 2010-11. That's why 40% of the selected corporate units receive Energy Conservation Award up to March, 2011.

(6) As far as industry wise mode of environmental disclosure is concerned. It is observed that Chemicals & Fertilizers have better mode of disclosure than the Cement Industries,Textiles Industries and Steel & Engineering companies because the mode of the environmental disclosure depends upon the reputation and status of the company.

(7) Almost all the companies were making disclosure about conservation of energy during the period from the year 2006-07 to 2010-11. It was 92% in the year of 2006-07, increased up to 97% in the year of 2010-11. It was 93% and 94% in the year of 2007-08 and 2008-09, respectively. So, we can say that it was increasing trend of conservation of energy during the period from 2006-07 to 2010-11of the study.

(8) 60% of the making Environmental Reporting was disclosing the environmental issues in their Environmental Policy and Statements in the year of 2006-07, increased up to 67% in the year of 2010-11 of the selected companies in India.

(9) 60% of the selected companies were disclosed contents such as amount spent on environment programme in the year of 2006-07, increased 69% in the year of 2010-11.

(10) Discloses about trees plantation, wastage and pollution control were low percentage compared to conservation of the energy disclosure of the selected companies.

(11) Under study, the analysis and interpretation of the Annual Reports of the selected corporate units also shows that old and reputed companies are more conscious about the disclosures of environmental issues as compared to the new companies.

(12) There is increasing trend in percentages of various parameters of Environmental Reporting during the period from 2006-07 to 2010-11. It is in positive sign for the industrial and national environment.

(13) There is significant difference between the percentages of environmental reporting for various parameters.

SUGGESTIONS

(1) For the Environmental Accounting and Reporting company should use leading international reporting guidelines.

(2) There is a need to promote adequate research, training and guidance. Guidelines and rules are needed to provide help to companies in disclosing information in annual reports.

(3) Company should know about the environmental legislations for protection of environment.

(4) Government should frame environmental policy at organization level.

(5) The company should disclose all relevant information regarding environmental efforts in separate section of annual report which will help users of annual reports to understand easily.

(6) Company should have a separate environmental accounting department for the awareness about environmental protection.

(7) To conduct environmental audit at regular intervals.

(8) Company should take action for protection of environment adoption of non-polluting technology, green belt, waste management and to save ecological balance in nature.

(9) Company should create awareness about the benefits of conserving the natural resources and their effective utilization by conducting workshop, conference and seminar.

(10) Full disclosure of accounting policies, procedures, methods adopted are disclosed as a matter of external reporting to serve all and sundry need.

CONCLUSION

Environmental accounting in physical terms is vital particularly when it embraces collecting data that indicate the direction and speed with which the quantity or quality of a resource are exploited.

In the environmental field many valuation issues are very difficult and more work is required before standard valuation techniques can be applied. Bridging the communication gap between environmental economists and natural resources accountant will be forbidden in this direction and some sort of approximation is essentially needed in environmental accounting to overcome the discrepancies in the current arbitrary estimation techniques. Extensive study on environmental accounting has been undertaken by a number of countries (e.g., Japan, America, Canada, France and U. K.). The experience gained by them can be best utilized to proceed on these lines to draw internationally standardized accounting methodologies in future for developing nations.

For the successful environmental accounting system should have a method for accounting for full environmental costs and benefits into cost allocation. Ultimately the business and the society both will be benefited by complete integration of environmental cost and benefits in corporate decision making system.

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A Study on Efficiency of Select Regional Rural Banks in India

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ABSTRACT

The basic assumption of the paper is that Regional Rural Banks (RRBs) are special financial institutions and studies on efficiency level of the RRBs are highly important in the present day globalised financial system. The main objective of the paper is to measure the level of efficiency of the select Regional Rural Bank of India. In addition, the paper also attempts to explore the influential determinants that affect the level of efficiency of the select Regional Rural Bank of India. This paper empirically investigates the efficiency of a sample of 35 Regional Rural Banks in India by using Data Envelopment Analysis (DEA). Both input oriented and output oriented methods have been considered under the assumption of Variable Return to Scale (BCC) technique and then Tobit regression approach to find the factors responsible for efficiency. The findings reveal that there is variance in the efficiency score among the RRBs in India and out of different variables, number of Branches and Fixed Assets have no significant bearing on technical efficiency of RRBs in India during the study period.

INTRODUCTION

Performance of a bank is generally linked with the extent to which the resources are utilised to generate revenue and it is explained by the ratio of output to input where a larger value is indicative of superior performance[1]. According to Farrell (1957) efficiency relate to how well a bank employs its resources relative to the existing production possibilities frontier or relative to current best practice bank as well as how a bank simultaneously minimises cost and maximises revenue based on an existing level of production technology. However, according to Bhagavath (2006) efficiency is defined as the success with which an organisation uses its resources to produce outputs i.e., the degree to which the observed use of resources to produce outputs of a given quality matches the optimal use of resources to produce outputs of a given quality. Hence, in other words, efficiency may be defined as the ratio of actual output and input.

Indian banking system is characterized by well-developed banking system and dominated by Public Sector Banks. At present, there are nineteen Nationalized banks which have their branches in different parts of the country. The annual report of Reserve Bank of India (2012-2013) shows that there are 92114[2] scheduled commercial bank branches (excluding regional rural banks) in India. However, many studies mentioned that there is need to improve banking services in rural areas of the country and it is also revealed that there is a gap of institutional credit in rural areas (Prashanth, 2015, Ahmed, 2014, Deb, 2011). With a view to fill up the institutional credit gap in the rural areas with greater development potentialities, a new category of banks was set up in 1975 in the name of Regional Rural Bank (RRB). The RRBs were established in India with a vision to boost rural economy by providing rural credit to farmers, agricultural labourers, artisans and small entrepreneurship. The RRBs have been brought into existence by the

Key words

Financial literacy and knowledge, financial behaviour and attitude, millennials, and reflections

joint efforts of the central government, state government and commercial banks. The annual report of NABARD (2012-2013) shows that there are 16,909[3] Regional Rural Bank branches in India and total number of RRBs in India is 56[4].

SIGNIFICANCE OF THE STUDY

Efficiency studies not only provide information but also throw a light on the proper utilization of inputs of the organization. Such studies also can help the organization to formulate policies to improve their level of outputs. The present study is an attempt to study the technical efficiency of the select RRBs in India. This type of study is important to RRBs to formulate the policies and programmes to improve their level of efficiency.

REVIEW OF LITERATURE

This section is to provide an overview of literature on efficiency studies which have been published during 2000 to 2015 in relation with the present study. There are number of studies which have been conducted with regard to efficiency of banks by using both Data Envelopment Analysis(DEA) & Malmquist Productivity Index (MPI) technique like Avkiran, N.K. (2000), Drake, L. (2001), Caceres, J. F. (2002) , Zhao, T., Casu, B. and Ferrari, A. (2007), Deb, J. (2011), Singh, H. (2013). There are studies which apply only DEA technique to measure efficiency of banks and microfinance institutions. Some of them are Drake, et, al (2005), Yang, Z. (2009), Dang Thanh Ngo. (2010) , Chanu & Das (2014) Takbiri, et, al, (2015), Das (2015), etc. in some studies like Chinubhai, A. (2008), Akmal, M. & Saleem, M.(2008), both DEA and Tobit Regression Analysis have been used to measure efficiency of banks .

However, most of the studies are on commercial banks of foreign countries. For example, the studies of Avkiran, N.K. (2000) on Australian commercial banks for the period of 1986 to 1995, Drake, L. (2001) on UK banks for the period of 1984-1995, Caceres, J. F. (2002) on Chilean Bank for the period of 1989-1999, Drake, et, al (2005) on Hong Kong banks for the period of 1995-2001, Akmal, M. & Saleem, M.(2008) on Pakistani Banks for the period of ten years (1995-2005), Yang, Z. (2009)on Canadian Bank Branches, Dang Thanh Ngo. (2010) on Vietnamese commercial banks for the year 2008, Takbiri, O, et, al, (2015) on Bank Shahr of Tehran, etc.

Few studies with regard to Indian commercial banks and Microfinance institutions of northeastern region of India have also been found in the literature. Study of Das, A, et, al (2005) on Indian Commercial Bank for the period of 1997-2003, Zhao, et, al (2007) on Indian commercial banking for the period of 1992-2004, Gupta, O.K, et, al., (2008) on Indian Banks for the period from 1999-2003, Deb, J. (2011) on commercial Bank Branches which operates in North Eastern region of India for the period of 2003-2007, Singh, H. (2013)on Commercial Banks of India for the period of 2001-2011, Chanu & Das (2014) on MFIs of North East India, Das (2015), on Micro Finance Institutions of Assam, for the period of 2011-2013, etc. are some of the studies which are found in the literature and reviewed for the present paper.

RESEARCH GAP

Though there are number of studies on efficiency of Banks, no studies on efficiency of RRBs in India are found in the existing literature. So the present study is attempted to fill the existing research gap.

OBJECTIVES

The objectives of the present study are:

- To measure the level of efficiency of the select Regional Rural Bank of India; and
- To explore the influential determinants that affects the level of efficiency of the select Regional Rural Bank of India.

HYPOTHESES:

- H_{01}= There is no significant difference in relation to level of efficiency amongst the Regional Rural Bank of India; and
- H_{02}= All the determinants of Regional Rural Bank of India have same influence that affect the level of efficiency.

METHODOLOGY

Type of study: Theoretical and empirical in nature.

Type of data :The present study is based on secondary data.

Sources of data : Data have been collected from secondary sources: Annual reports of Regional Rural Bank in India in year 2014-2015; Published and unpublished documents maintained by banks; Reserve Bank India's annual reports (various issues); Journals; Books; annual reports of NABARD (various issues); websites; Published and Unpublished dissertation and theses; Research articles from various journals have also been taken into consideration.

Population Size : 56 (Total number of Regional Rural Bank in India 56)[5].

Sample Size : 35 (Thirty five)

Sample size determination design: purposive design (though there are 56 RRBs which are currently operating in the country, data cannot be generated from all the RRBs, hence, the RRBs which are found to be getting data have been selected for the present study).

Period of Study : The present study covers one financial year i.e. April 2014- March 2015.

LIMITATION OF THE STUDY

The study is limited to only 35 RRBs operating in India. The study period is limited to only one year due the availability of the data which is extracted from the financial statements provided by different RRBs in India.

Selection of Inputs and Outputs Variables

In empirical studies on efficiency of banking sector, an important and controversial issue is selection of inputs and outputs. According to Berger and Humphrey (1997**),** there are two main approaches – the production approach and the intermediation approach. In the present study production approach has been used to measure the efficiency and on the basis of this approach following inputs and outputs variables have been chosen. In the table 1 and table 2 shows different input and output variables and their details explanations respectively.

Table 1. List of Inputs and Outputs Variables

Inputs	Outputs
Operating Expenses, Interest Expended, Deposits	*Interest Earned, Investment, Loans & Advances, Other Income*

Table 2. Details of inputs & outputs Variable

Fixed Assets	*Premises, Furniture, Fixture etc.*
Interest Expended	*Interest on deposits, interest to bank to deposits*
No. of Employees	*Total Number of Employees.*
Deposits	*Current Account, Saving Bank Deposits, Term Deposits*
Operating Expenditure	*Payments to employees, printing and stationary, Advertisement and publicity, Law charges etc.*
Loans and Advances	*Bills purchased and discounted, Cash credits, Overdrafts and loans repayable on demand, Term loads, Secured by tangible assets, Unsecured.*
Interest Earned	*Interest on Advance, interest on loan.*
Other Income	*Commission, exchange, brokerage etc.*
Investment	*Government Securities, Mutual Funds etc.*

Source: Annual Report of AGVB in the financial year 2014-2015

In the present study Input Oriented and output oriented measures are used to analyse the technical efficiency.[6] Efficiency measures can also be estimated with broadly two types of approaches which are parametric and non-parametric approach[7]. However, in the present study non-parametric- Data Envelopment Analysis has been used.

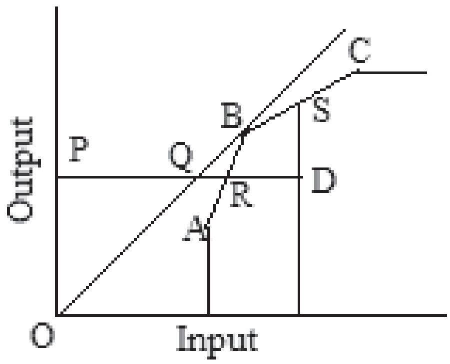
Data Envelopment Analysis (DEA): an overview

It is widely used method to measure the technical efficiency of any financial organisation. It is a linear programming-based technique to measure the performance efficiency of organizational units like bank; here, banks are known as Decision Making Unit (DMU)[8]. The performance of DMUs is assessed in Data Envelopment Analysis by using the concept of efficiency or productivity which is the ratio of weighted outputs (virtual output) to weighted inputs (virtual inputs). The best performing DMU is assigned an efficiency score of unity (or 100 percent) and the performance score of a DMU vary between 0 and 1. The operating units of banks have multiple inputs such as staff size, salaries and hours of operation, advertising budget as well as multiple outputs such as profit, market share and growth rate. In this situation, it is often difficult for a manager to determine which operating units are inefficient in converting their multiple inputs into multiple outputs. In such situation, this problem can be easily addressed by Data Envelopment Analysis and the analysis may be conducted by using statistical software DEA-Solver.

It is widely believed that DEA was first introduced into the operations in Research literature by Charnes, Cooper and Rhodes (CCR) in 1978[9]. According to Singh (2013), the original CCR model was applicable only to technologies characterized by constant returns to scale globally and later Banker, Charnes and Cooper (BCC), in 1984, extended the CCR model to accommodate technologies that exhibit variable return to scale (Variable return to scale is also known BCC model). In the present study Variable Return to Scale i.e. BCC (IOM and OOM) has been used to find the level of technical efficiency.

BCC Model: The BCC model has its production frontiers spanned by the convex hull of the existing DMUs. The frontiers have piecewise linear and concave characteristics which, is shown in this Figure .

The BCC Model



Source: Cooper, W. W., Seiford, L. and Tone, K. (2002) P. 87

Assume that this figure exhibits four RRBs, A, B, C and D, each with one input and one output variable. The efficient frontier of the CCR model is the line that passes through B from the origin. The frontiers of the BCC model consists of the bold lines connecting A, B and C. The production possibility set is the area consisting of the frontier together with observed or possible activities with an excess of input and/or a shortfall in output compared with the frontiers. A, B and C are on the frontiers and efficient under BCC. D is not on the frontier and inefficient under BCC Model.

Tobit Regression Model:

For the second objective, Tobit Regression Model is used in the present study to examine the determinants which can influence the level of efficiency[10]. According to Hoff (2007), the empirical results using the Tobit regression model analysis is more efficient and consistent than using the ordinary least squares model and in most cases the Tobit approach is sufficient in representing the second stage Data Envelopment Analysis models.

In the study, Operating Expenses, Interest Expended, Deposits, Interest Earned, Investment, Loans & Advances, Other Income, No. of branches, Fixed Assets, have been considered and Tobit Regression model has been conducted by using statistical software Gretl.

ANALYSIS AND RESULTS:

A. To measure the level of efficiency of the select Regional Rural Bank of India:

Efficiency Results under the BCC Model (Input Oriented Measured and Output Oriented Measured**):**

Table 3: of technical efficiency score of RRBs

Particulars	BCC-IOM	BCC-OOM
No. of DMUs	*35*	*35*
No. of fully efficient RRBs in India	*15*	*15*
No. of Not fully efficient RRBs in India	*20*	*20*
Average	*0.9079*	*0.9158*
SD	*0.1062*	*0.0997*
Maximum	*1*	*1*
Minimum	*0.6771*	*0.6646*

Source: Authors' Calculation

Table 3 presents a summary of statistical results of technical efficiency score and the scores are represented under the input oriented and output oriented BCC model.

BCC-IOM: The efficiency of statistical analytical scores presents in Table 3 indicates that out of 35 RRBs, there are 15 RRBs which are fully efficient and remaining 20 are not fully efficient RRBs under BBC-IOM. An efficiency score equal to 1 means that the RRB is technically efficient. It implies that efficient RRB could be minimizing the inputs at given output level depending on the methodology used to estimate the DEA model. Average level of efficiency of RRBs in the financial year 2014-15 is 0.907; it means inputs variable could be proportionately reduced without changing the output level and it implies that the sample RRBs in India are not fully efficient in that financial year under the input oriented measured. The table also shows that lowest score stands at 0.671 which means inefficient score is 0.329 (i,e. 1-0.671). Therefore, 32.9 percent inputs bundle could be proportionately reduced without reducing the output level.

BCC-OOM: The efficiency of statistical analytical scores presents in table 3, indicates that there are 15 RRBs which are fully efficient and 20 are not fully efficient under BBC-OOM. Here also, an efficiency score equal to 1 means that the RRB is technically efficient. It implies that the RRB is mazimising the outputs at given input level depending on the methodology used to estimate the DEA model. Average level of efficiency of RRBs in the study period is found as 0.915; it means outputs variable could be proportionately increased without changing the input bundle. Further, it also implies that the sample RRBs are not fully efficient under output oriented measured in that financial year. The table also shows that lowest score is 0.664 which means inefficient score is 0.336 (1-0.664). Therefore, 33.6 percent outputs bundle could be proportionately increased without introducing the input bundle.

Table: 4. Scores and Ranking of RRBs based on BCC-IOM and BCC-OOM

RRBs in India	BCC-IOM		BCC-OOM	
	Score	Rank	Score	Rank
Andhra Pragathi Grameena Bank	1	1	1	1
Saptagiri Grameena Bank	1	1	1	1
Langpi Dehangi Rural Bank	1	1	1	1
Arunachal Pradesh Rural Bank	1	1	1	1
Uttar Bihar Gramin Bank	1	1	1	1
Saurashtra Gramin Bank	1	1	1	1
Sarva Haryana Gramin Bank	1	1	1	1
Kaveri Grameena Bank	1	1	1	1
Karnataka Vikas Grameena Bank	1	1	1	1
Malwa Gramin Bank	1	1	1	1
Sutlej Gramin Bank	1	1	1	1
Puduvai Bharathiar Grama Bank	1	1	1	1
Pallavan Grama Bank	1	1	1	1
Bangiya Gramin Vikash Bank	1	1	1	1
Paschim Banga Gramin Bank	1	1	1	1
Kerala Gramin Bank	0.977	16	0.982248	16
Telangana Grameena Bank	**0.975**	**17**	**0.975865**	**18**
Baroda Rajasthan Ksethriya Gramin Bank	**0.973**	**18**	**0.981576**	**17**
Allahabad UP Gramin Bank	0.934	19	0.940599	19
Andhra Pradesh Grameena Vikas Bank	**0.911**	**20**	**0.911848**	**22**
Narmada Jhabua Gramin Bank	0.910	21	0.914025	21
Madhya Bihar Gramin Bank	**0.904**	**22**	**0.938218**	**20**
Vananchal Gramin Bank	0.889	23	0.87455	24
Punjab Gramin Bank	0.864	24	0.882325	23
Tripura Gramin Bank	**0.852**	**25**	**0.854756**	**25**
Prathama Bank	0.833	26	0.843461	26
Dena Gujarat Gramin Bank	**0.825**	**27**	**0.833135**	**28**
Maharashtra Gramin Bank	**0.819**	**28**	**0.826115**	**30**
Vidharbha Konkan Gramin Bank	**0.777**	**29**	**0.79023**	**31**
Odisha Gramya Bank	**0.754**	**30**	**0.827893**	**29**
Jharkhand Gramin Bank	**0.733**	**31**	**0.721381**	**33**
Assam Gramin Vikash Bank	**0.730**	**32**	**0.836241**	**27**
Baroda Gujarat Gramin Bank	**0.729**	**33**	**0.720824**	**34**
Utkal Grameen Bank	**0.710**	**34**	**0.733157**	**32**
Jammu and Kashmir Grameen Bank	0.677	35	0.664619	35

Source: Authors' Calculation

The Table 4 presents the rank of RRBs based on their efficiency score. Out of fifteen RRBs which are fully technical efficient under input oriented measured as well as output oriented measured in the financial year 2014-2015, the table also shows that the Langpi Dehangi Rural Bank is the only rural bank from the North Eastern Region of India that has its operation in only two hill districts of Assam viz, Karbi Anglong and Dima Hasao stands rank one. The score result shows that the fully efficient 15 RRBs might use minimum bundle of inputs by producing or earning maximum level of output during the study period. The table also reveals out of the 20 not fully efficient RRBs the Kerala Gramin Bank has the highest score with 0.9777and 0.982 whereas that Jammu and Kashmir Grameen Bank has the lowest score with 0.677 and 0.664 under the input oriented and output oriented measured respectively. .

Table 5.Frequency in Reference Set of RRBs under BCC-IOM and BBCC-OOM

Reference DMUs	BCC-IOM Frequency to other DMUs	BCC-OOM Frequency to other DMUs
Andhra Pragathi Grameena Bank	14	13
Saptagiri Grameena Bank	11	11
Langpi Dehangi Rural Bank	2	2
Arunachal Pradesh Rural Bank	1	1
Uttar Bihar Gramin Bank	2	2
Saurashtra Gramin Bank	16	14
Kaveri Grameena Bank	4	5
Karnataka Vikas Grameena Bank	5	7
Malwa Gramin Bank	5	5
Sutlej Gramin Bank	5	6
Puduvai Bharathiar Grama Bank	4	3
Pallavan Grama Bank	6	5
Bangiya Gramin Vikash Bank	3	2
Paschim Banga Gramin Bank	18	16

Source: Author's Calculation

The reference set is determined as the set of DMUs which are in the optimal basic set of the LP problem. Fifteen RRBs have fully technical efficient (Table 4) but table 5 shows that Paschim Banga Gramin Bank has been referred by eighteen RRBs followed by Saurashtra Gramin Bank has been referred by sixteen RRBs and Andhra Pragathi Grameena Bank has been referred by fourteen RRBs under the BCC-IOM in the financial year 2014-2015. Under the BCC-OOM,, Paschim Banga Gramin Bank has been referred by sixteen RRBs followed by Saurashtra Gramin Bank by fourteen RRBs and Andhra Pragathi Grameena Bank by thirteen RRBs during the study period.

The reference set is determined as the set of DMUs which are in the optimal basic set of the LP problem. Fifteen RRBs have fully technical efficient (Table 4) but table 5 shows that Paschim Banga Gramin Bank has been referred by eighteen RRBs followed by Saurashtra Gramin Bank has been referred by sixteen RRBs and Andhra Pragathi Grameena Bank has been referred by fourteen RRBs under the BCC-IOM in the financial year 2014-2015. Under the BCC-OOM,, Paschim Banga Gramin Bank has been referred by sixteen RRBs followed by Saurashtra Gramin Bank by fourteen RRBs and Andhra Pragathi Grameena Bank by thirteen RRBs during the study period.

The findings clearly reveal that the efficiency level of all the RRBs of the country is not same. Hence, the null hypothesis, that there is no significant different in relation to level of efficiency amongst the Regional Rural Bank of India is rejected and the alternative hypothesis there is significant different in relation to level of efficiency amongst the Regional Rural Bank of India is accepted.

B. To explore the influential determinants that affects the level of efficiency of the Regional Rural Bank of India:

Correlation analysis has been conducted to check for potential multicolinearity problem in the regression. Table 6 provides summary on the degree of correlation between the explanatory variables used. In this table, it is found that all the variables have strong positive correlation among themselves except the number of branches. Though the Number of Braches has positive correlation, the extent of correlation is very low. The result from the correlation coefficients leads to conclude that the number of branches is not important variable in determining the technical efficiency of RRBs in India in the financial years 2014-2015.

Table: 6. Correlation Matrix of Independent Variables

	Operating Expenses	Interest Expended	Deposits	Interest Earned	Investment	Loans & Advances	Other Income	No. of branches	Fixed Assets
Operating Expenses	1.000								
Interest Expended	0.957	1.000							
Deposits	0.631	0.643	1.000						
Interest Earned	0.961	0.989	0.655	1.000					
Investment	0.885	0.933	0.594	0.924	1.000				
Loans & Advances	0.774	0.805	0.760	0.809	0.749	1.000			
Other Income	0.931	0.948	0.612	0.927	0.904	0.808	1.000		
No. of branches	0.514	0.306	0.270	0.314	0.235	0.223	0.384	1.000	
Fixed Assets	0.928	0.990	0.622	0.979	0.932	0.796	0.916	0.203	1.000

Source: Authors' Calculation

Table 7. The description and expected signs of the predictors included in the regression analysis

Variables	Expected Sign	Hypothesis
Operating Expenses	-	A negative relationship with efficiency is expected
Interest Expended	-	A negative relationship with efficiency is expected
Deposits	+	A positive relationship with efficiency is expected.
Interest Earned	+	A positive relationship with efficiency is expected.
Investment	+	A positive relationship with efficiency is expected.
Loans & Advances	+	A positive relationship with efficiency is expected.
Other Income	+	A positive relationship with efficiency is expected.
No. of branches	+	A positive relationship with efficiency is expected.
Fixed Assets	+/-	A bank fixed assets is not expected to have any ascertained relationship with efficiency measure.

Source: Authors' Compilation

Tobit model used in this study may be specified as :

$$Y_1^* = \alpha + \beta_1 \text{(Operating Expenses)} + \beta_2 \text{(Interest Expended)} + \beta_3 \text{(Deposits)} + \beta_4 \text{(Interest Earned)} + \beta_5 \text{(Investment)} + \beta_6 \text{(Loans \& Advances)} + \beta_7 \text{(Other Income)} + \beta_8 \text{(No. of branches)} + \beta_9 \text{(Fixed Assets)} + \varepsilon$$

In the second stage the DEA technical efficiency scores are regressed on RRBs' specific characteristics in order to identify sources of inefficiencies. Since efficiency scores range between 0 and 1, Tobit model is employed [11]. Results of the Tobit estimation are given in table 8. It should be noted that the dependent variable in the model is DEA efficiency scores. Positive coefficients imply a rise in efficiency, whereas negative coefficients mean fall in efficiency [12].

Table 8. Result of Tobit Estimation

	Coefficient	Std. Error	z	p-value	
Const	0.884799	0.0522074	16.9478	<0.0001	***
Operating Expenses	−1.24989e-010	7.64406e-011	−1.6351	0.1020	
Interest Expended	−5.56791e-011	3.95511e-011	−1.4078	0.1592	
Deposits	3.23389e-013	3.19674e-013	1.0116	0.3117	
Interest Earned	3.05326e-011	1.58905e-011	1.9214	0.0547	*
Investment	1.70813e-012	2.28483e-012	0.7476	0.4547	
Loans & Advances	−1.06218e-013	8.19839e-013	−0.1296	0.8969	
Other Income	4.37275e-010	1.93484e-010	2.2600	0.0238	**
No of branches	0.000199015	0.000276244	0.7204	0.4713	
Fixed Assets	7.03684e-011	2.21123e-010	0.3182	0.7503	
Chi-square(2)	30.0597				
Log-likelihood	3.039669				
Note: ***, **, * indicate statistically significant at 1%, 5% and 10% respectively.					

Source: Authors' Calculation

Table 8 indicates the results of Tobit regression analysis. It figures out that by taking all the nine variable together, the overall goodness of fit of the model has been found to be significant on the basis of Log-Likelihood Ratio. The result reveals that all the explanatory variables conform to our prior expectation. However, the result shows that interest earned and other income are statistically significant. The results indicates that interest earned and other income are positively and significantly related to RRBs technical efficiency.

RRBs' interest earned is found to have a positive effect on technical efficiency at 10%

level of significance. On the other hand other income is found to have a positive effect on technical efficiency at 5% level of significance. This implies that interest earned and other income lead to a greater capacity for RRBs to function their activities in a more efficient way. Finally, Operating Expenses, Interest Expended, Deposits, Investment, Loans and Advances, No. of Branches and Fixed Assets have no significant bearing on technical efficiency of RRBs.

The findings clearly reveal that all the determinants have different influence on the level of efficiency. Hence, the null hypothesis, that all the determinants of Regional Rural Bank of India have same influence that affect the level of efficiency is rejected and the alternative hypothesis that all the determinants of Regional Rural Bank of India have same influence that affect the level of efficiency is accepted.

CONCLUSION

Studies on efficiency measurement of Regional Rural Banks by using DEA technique is still lacking in India although there are number of studies on efficiency of commercial banks of the country. In many studies it is stated that high efficiency and an effective banking regulation seem to have a positive relationship[13]. Since, 2005, different RRBs across India have started merging with the objective to improve efficiency and competition in the banking sector. The Assam Gramin Vikas Bank has also emerged after the amalgamation of all the rural banks of Assam except Langpi Dehangi Rural Bank. The findings of the present study clearly indicate that the efficiency level are not same in case of all the Regional Rural Banks of the country during the study period. Though there are a sizable number of efficient RRBs, the number of inefficient RRBs is higher than the efficient RRBs. Hence, there is need to check the issues immediately in order to achieve the very reasons of reform in RRBs. It is also acknowledge that the RRBs have to face ever increasing competition in the banking sector. Many private and foreign commercial banks have already been entered in the competitive market; it is also a real challenge of the RRBs. However, there is ample scope for improvement of RRBs. Hence, serious studies are called for to provide inputs to the banks, Policy makers, etc of the country. We, the authors do also hope that the findings will open a fruitful avenue for future research in the area of efficiency studies with regards to Regional Rural banks of the country.

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DCF, Strategic Approach and Multi-Factor Model: An Empirical Study to Explore a Rational Approach to Capital Budgeting

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ABSTRACT

Several financial and non-financial factors together affect the success of a long-term investment; hence, acceptance or rejection of a project should not be made solely on the basis of an index of benefit obtained from a method of normative financial appraisal. Multifactor models that encompass several dimensions of decision-making into a standard framework can safely be used to avoid the biases and hubris. However, in industrial practice of investment appraisal there is no consensus in matters of identifying the factors and assessing their weights. This research paper fills this gap by chalking out a method in this regard. The study unfolds that strategic, technical, economic and environmental factors together constitute nearly 80% weights in investment decision-making. The paper recommends that empirical methods may be used for exploring the factors and determining the factor weights; this can produce a pragmatic approach to capital budgeting that eliminates the biases and subjectivity.

Key words

Capital Budgeting, Shareholders' Wealth, Non-financial Factors

STATEMENT OF THE PROBLEM

Effective capital budgeting decision-making, which involves huge long-term investments in expansion, renovation and capacity addition, is critically important in determining strategic success and survival of a corporate house. 'Decisions of this nature help a company to mould its future opportunities and develop competitive advantage by rebuilding its technology, its processes and capacity (Kersyte Agne, 2011)'.

Financial evaluation of an investment proposal is essentially a formal step in the process of capital budgeting, which is undertaken for assessing the economic merit of the investment proposal so that resources can be earmarked, approved and allocated. However, in the process of assessing merit of a capital budgeting proposals, contemporary finance managers and CFOs assign a great degree of emphasis on normative financial appraisal [See, Horngren, et al. (1996), p-703; Graham and Harvey (2002); Brigham and Houston (2004), Andor G., et al. (2015)] and neglect myriads of other important non-financial factors that predominantly contribute to the success of the investment projects.

CFOs grossly use financial appraisal methods such as DCF as well as sophisticated methods of real options and risk analysis, to convince the board members that the concerned project qualifies the financial benchmark; hence, the project may be approved and funds may be allocated. Findings from research studies, undertaken in Indian or abroad, confirm this truth [See, Gitman and Forrester (1987); Pike (1996); Graham and Harvey (2002)]. In India notable of such studies were done by Porwal L S (1976), Pandey I M (1989), Babu C Prabhakara (1995), Anand Manoj (2002), Shah Kamini (2008) and Gupta Divya (2013). In more than 90% of the studies, the researchers devoted their attention on surveying the methods and techniques of normative financial appraisal.

NON-FINANCIAL FACTORS

Success of a project, in practice depends on numerous financial and non-financial factors. Agne Kersyte (2011) points that satisfying an index of financial benchmark is only one step, which indicates that project is desirable. Mohamed and McCowan (2001) argue that "financial evaluation is only a part of the whole decision-making process". It indicates that even if the financial parameters are extremely attractive, neglecting other qualitative aspects may create serious problems in making a project a success.

The important non-financial factors that add to the success of an investment proposal are environmental clearance, social acceptance, organizational structure, workers' commitment, political patronage, technological feasibility and so on. Ignoring either of these factors in the process of making a capital budgeting decision is thoroughly mistaken. In the corporate world, the evidences of the adverse consequences of ignoring such non-financial factors are numerous.

Meredith and Mantel (2000) provide a list, which includes both financial as well as non-financial factors affecting success of an investment. Skitmore et al., (1989), Lopes and Flavell (1998), Adler (2000) and Love et al. (2001) point to the need for taking into accounts both financial and non-financial aspects of capital budgeting to make a decision logically sound. Influence of various non-financial factors on Capital Budgeting can be summarized in the form of a diagram shown below; [See Fig. 1]. Due to disregard for these non-financial factors, many of the projects with very good index of financial prospect have been abandoned half-way, resulting in wastage of shareholders' wealth. Debacle of Tata Motor's Singoor Project, which was formulated for assembling the cheapest Nano car, can be cited as a living example of this nature. In the context of such industrial evidences this study points to the need for analyzing both the financial and non-financial factors for making capital budgeting analysis objective and rational.

While it is understood that besides financial factors, relevant non-financial factors should be incorporated into the analysis, yet, unfortunately, in industrial practice of investment appraisal no consensus method could be chalked out to facilitate identification of the factors and assessing their weights. This study focuses on the necessity of finding a methodology for filling this gap.

Fig.1: Non-Financial Factors of Capital Budgeting

Mohamed and McCowan (2001) advocate that non-monetary project aspects are required to be carefully analyzed so that they can be managed. 'In extreme cases, neglect of these aspects can cause the failure of a project despite very favourable financial components'. The majority of organizations resort to estimating the necessary money contingencies for these qualitative aspects without an appropriate quantification of the effects of these factors.

STRATEGIC INVESTMENT DECISIONS

To manage the business in 21st century the corporate houses have begun to adopt strategic approach to management (Boone & Kurtz, 1992). Porter E Michael (1980) has outlined the methods and tools of formulating competitive strategies. However, industry practice of adopting strategies for capital budgeting is not unique; instead, it varies with respect to countries, where it is practiced as well as contextual categories and focus of the companies concerned.

Carr Chris et al., (2010) report that in the context of capital budgeting UK companies put strong emphasis on financial considerations, while Japanese and German companies downplay financial evaluations; the companies in these two countries put strong emphasis on strategic considerations. Between these two diametrically opposite practices, the companies in the USA follow a balanced approach; they place emphasis on both financial and strategic considerations.

Contrary to the straightforward observations noted above, Alkaraan and Northcott (2006) report that some companies in UK take the investment decision solely on the basis of sophisticated financial analysis; side by side, many of the companies overlook financial appraisals and put strong emphasis on strategic analysis; this second group of companies use traditional payback period, to complete a half-hearted compliance of financial appraisal.

Carr Chris et al., (2010) classify firms fighting competition in market into four different contextual categories such as market creators, re-focusers, value creators and restructurers. The authors point that market creators give strong emphasis on long-term market development and positioning; so, these companies put very strong emphasis on strategic considerations, while restructurers give strong emphasis on financial considerations. In between these two, re-focusers and value creators give attention to both strategic and financial considerations in their decision-making process; however, compared to value creators, re-focusers set moderate financial targets.

Shapiro Alan (1993) points that good understanding of corporate strategy helps in designing potentially profitable projects. According to him, perhaps the best way to gain this understanding is to study medley of firms, spanning a number of industries and nations that have managed to develop and implement a variety of value creating investment strategies" (p.77). With right strategies a company can succeed in creating value for its shareholders even in the difficult industrial scenario.

RESEARCH BACKGROUND

Research study in capital budgeting is not totally an unknown area. A good number of researchers have made remarkable studies in India and aboard. Notable of the foreign studies are there to the credit of Gitman and Forrester (1987), Pike (1988, 1996), Arnold and Hatzopoulos (2000), Graham and Harvey (2002), Ryan and Ryan (2002), George Kester and Geraldine Robbins (2011), Lu Jin-Ray, et al (2015). In India notable studies have been done by Chandra P (1975), Porwal L S (1976), Pandey I M (1989), Babu Prabhakara C (1996), Anand Manoj (2002), Shah Kamini (2008), Yadav Vinod Kumar (2013). The studies enlisted above are almost similar in nature, consisting of surveys of practices prevailing in the industry. A survey of these studies leads to the generalized finding that the corporate houses are gradually increasing the use of sophisticated DCF methods.

Quite different line of approaches have been noticed in the studies of Carr, Chris et al.(2010), Shapiro Allan (2013), Kaplan and Atkinson (2003); they have handled the issues of strategy and technology. Organizational factors and decision-making mechanism down the hierarchical layers of the organization have been analyzed by Bower Joseph (1970). Later Karsyte Agne (2011) has focused attention on the process approach to capital budgeting; the scholar observes that management in the organization has different objective other than shareholders' wealth maximization; so, they try to influence the outcome of the decisions so that interests of management is better served. These observations are in line with the managerial models of Williamson O (1963) and Marris R (1963).

Skitmore et. al. (1989), Flavell (1998), Adler (2000) and Love et al. (2001) point to the need for taking into accounts both financial and non-financial aspects of capital budgeting decisions. Moutinho Nuno (2010) examines non-financial factors and non-financial risks affecting capital budgeting decisions.

The survey of the studies gives a common reflection that while each researcher wants to make a dedicated focus on a point, other points he misses or leaves untouched. It is a fact that if several factors are not comprehensively analyzed, a well encompassed rational decision cannot be made. This study aims to address this issue and focuses on studying methods that simultaneously analyze large numbers of factors such as financial, non-financial, technological, organizational, etc. into a decision-making framework so that capital budgeting decisions can be made objectively without getting misled by biases and hubris.

OBJECTIVE OF THE STUDY

a) To examine the methods of normative financial appraisal used in corporate houses in India.

b) To examine the validity of relationship between use of DCF and shareholders' value creation.

c) To discuss the limitations of DCF methods that results in mistaken investment decisions.

d) To identify the factors, which considerably influence investment decisions of the firms.

d) To make a review of multi-factor models of capital budgeting.

e) To assess relative importance of financial and non-financial factors of capital budgeting.

METHODOLOGY

Methodologies used in the study are analytical, empirical and experimental. Empirical analysis is based on statistical analysis of primary data and secondary data. Secondary data have been collected from NSE share price database and Annual Report of the respective companies. Primary data have been collected directly from the CFOs of a sample of 30 randomly selected companies listed on NSE through personal interview with printed questionnaire. The questionnaire was drafted with multiple-choice type objective questions that cover points like size of investment, choice of appraisal method, importance assigned to various financial and non-financial factors, sources of fund for financing the investment proposal, people who take part in decision making, etc.

As response level is very low, the study takes very long time in interviewing and gathering responses from CFOs of the sample companies. The study covers the period of five years, from 2010 to 2015. Tools like descriptive statistics, z -test, ?2 test, sign test and Factor Analysis have been used for arriving at scientific conclusions.

Analytical and experimental methodologies have been used to unfold the limitations of DCF method, which sometimes results in accepting undesirable investment proposals causing destruction of the value of the firm.

THE SURVEY: CHARACTERISTICS OF COMPANIES SURVEYED

The sample of 30 companies was drawn from 14 different industries located at different parts of the country. The data so compiled from questionnaire responses from the cross-section of the industries are supposed to reflect the contemporary industry practices followed by the corporate houses in India. Characteristics of responding firms and responses received from them have been described briefly in the paragraph below.

Of the 30 companies surveyed, 25 companies are Public Limited Companies and 5 are Government Companies. 22 companies belong to manufacturing sector, 6 to service sector and remaining 2 belong to both manufacturing and service sector.

17% of the sample companies, are having average annual capital budget of less than Rs. 500 crores. 50% of companies are having average annual capital budget between Rs. 5, 00 and Rs. 1,000 crores. On the upper segment 33% of companies are having average annual capital budget between Rs. 1,000 and Rs. 5,000 crores.

FINANCIAL APPRAISAL METHODS: A GLIMPSE OF THE PRESENT PRACTICE

Financial appraisal is necessary to assess the desirability of an investment proposal. Different methods are there for financial appraisal of long-term investments. These are categorized as traditional non-DCF methods and DCF methods. Internal Rate of Return (IRR), Modified Internal Rate of Return (MIRR), Net Present Value (NPV) and Net Terminal Value (NTV) belong to DCF category. On the other hand, Payback Period and Accounting Rate of Return (ARR) fall under Non-DCF category. Sophisticated methods that count the worth of real options and risks are extended versions of DCF methods. Based on the data of the survey findings popularity of the methods (expressed in percentage terms), has been shown by a histogram as shown in Fig. 2.

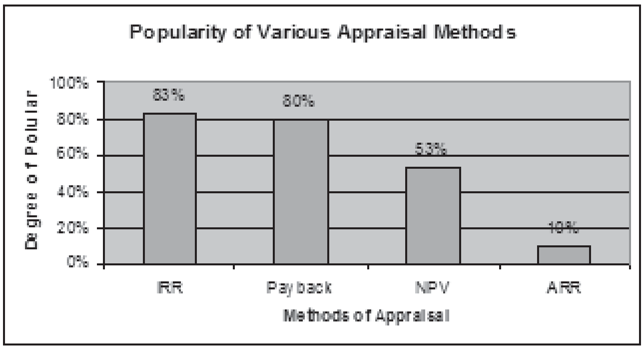

Fig.2: Popularity of Various Appraisal Methods

Out of 30 companies, only 2 companies report that they do not use any DCF method, while 28 companies use have been found to use DCF methods, alone or in combination with non-DCF methods. That is, overall 93% companies use DCF methods. If this outcome is compared with the findings of Porwal (1976) [which was just 31%], the difference appears highly significant. It can be confidently concluded that a significant shift has taken place in industry in respect of the use of DCF methods in project appraisal.

SIMULTANEOUS USE OF MULTIPLE METHODS

Out of the 30 companies surveyed, only six companies have been found to use a single method for project appraisal. Remaining 24 companies are found to use multiple methods for appraisal of their project proposals. Three companies have been found to use four methods simultaneously to arrive at their final decision. Thirteen companies have been found to use 2 methods, while eight companies have been found to use three methods side by side. The data regarding use of multiple methods have been shown in Fig. 3 with the help of histogram as shown below:

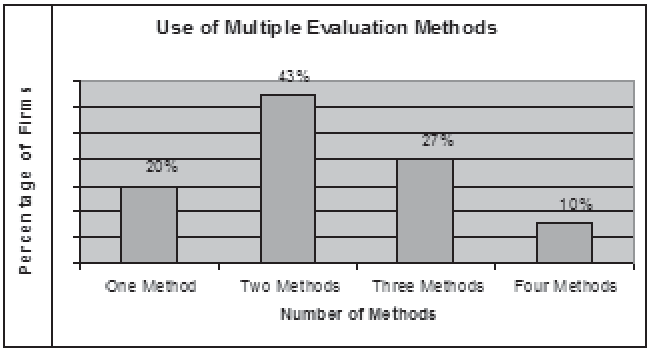

Fig. 3: The Trend of Using Multiple Evaluation Methods

Use of multiple methods can be explained as an attempt to taking into account the different attributes of an investment. It is observed that vast majority of the companies use Payback Period method in addition to DCF methods like IRR and NPV. It indicates that majority of the companies insist on liquidity in addition to profitability. Since 80% companies use multiple methods, it can be safely stated that instead of using a single method, Indian companies use multiple methods for financial appraisal of investment proposals. Statistical validity of the inference can be established with a non-parametric sign test as given below. For conducting the test, firms using multiple methods are assigned plus signs and those using single method are assigned negative signs. Null Hypothesis and Alternative Hypothesis are H0: P(+) = 0.50 and H1: P(+) > 0.50. The test is done at 5% level.

Number of Plus (+) sign, X = 24
Number of Minus (–) sign = 6
Sample size, n = 30

$$Z = \frac{X - np}{\sqrt{npq}} \qquad \text{(I)}$$

$$Z = \frac{24 - 30(0.5)}{\sqrt{30 \times 0.5 \times 0.5}} = 3.28 > 1.645$$

For right-tailed test 5% Critical Value of Z = 1.645

Since computed Z is greater than critical value (1.645), the alternative hypothesis that the firms depend on the use of multiple methods for evaluation of projects has been accepted.

'Very recent research findings' [i.e., Graham and Harvey (2002); George Kester and Geraldine Robbins (2011)] show that Finance Executives most frequently use three methods such as IRR, NPV and Payback Period. Therefore, the findings of the study are in line with the findings of studies made abroad in developed countries.

DCF Methods of Appraisal, Profitability and Shareholders' Wealth

Capital Budgeting is the most important of the three decisions, when it comes to the creation of shareholders' wealth (Van Horne James, 2003). Using secondary and survey data Klammer Thomas (1973) observes that there is an association between choice of DCF techniques and financial performance of the firm. Indeed the findings may be true, because the future financial performance of the firm depends on investment decisions made today. However, survey results and observations of many other studies fail to confirm existence of any verifiable relationship between use of the methods of normative financial appraisal and shareholders' value creation. For example, Graham & Harvey (2002) and Ryan and Ryan (2002) report that more than 90% companies use DCF. In practice 90% companies surveyed by them don't have the track record of unfailing value creation over the last one decade.

This paragraph is meant for presenting the result of the study of the relationship between 'use of DCF' and market value addition. To pursue this study, a careful watch was kept on the movement of share prices of the companies that were included into the sample. The survey of financial appraisal methods, shown in [see paragraph 6] Fig. 3, shows that 93% companies use theoretically satisfactory DCF methods. Had DCF been the proven methodology of investment selection, all the companies should have the track record of positive market value addition in terms of rising market price of the shares of respective companies. Table 1 given below gives the summary result of share price movement of the companies surveyed along with their practice of using DCF and non-DCF methods. This part of the study was continued for a span of three years, from 2012 to 2015. There is no association between 'choices of appraisal methods' and 'Market Value Addition' is the null hypothesis of this study. Data collected from sources mentioned above have been compiled in Table 1, shown below.

Table 1. Use of Appraisal Method and Market Value Addition

	DCF	Non-DCF
Number of companies experiencing rising share price	15	1
Number of companies having falling share price	13	1
Total	28	2

Out of 28 companies using DCF, only 15 companies have the record of rising share price, while 13 other companies experience declining share price. It means only 15 companies created wealth for their shareholders, while remaining 13 destroyed the wealth. Of the two companies not using DCF, one has the record of rising share price, while another has the record of declining share price. Chi-square computed from table after Yates correction is 0.40. The result leads to accepting the null hypothesis, which refutes the claim that choice of DCF can undisputedly add to market value addition.

Plenty of evidences are there that even after applying prescribed principles of DCF appraisal, large numbers of firms are saddled with mounting losses during the period between 2005 and 2015. Just complying with the decision rules outlined in DCF methods does not act as a guarantee that firms will finally succeed in creating value for the shareholders. This is due to the inherent limitations of the DCF methods, which have been discussed in the following paragraphs.

LIMITATIONS OF DCF METHODS: VIOLATION OF ACCOUNTING PRINCIPLES

The logic of discounting and calculation of NPV seems strongly convincing; it defines NPV as equivalent to wealth. Therefore, 'choosing projects with higher NPV' amounts to maximization of shareholders' wealth. Unfortunately the fallacies of DCF have been never questioned, except the cases of fictitious NPV pointed by Roy Dipen (2008).

DCF is neither accountancy nor economics, but a simple method of translating future pay-off into their present value equivalents. The major fallacy of DCF is that it suggests matching of PV of cash inflows with investment costs. Matching concept, as it is understood in accounting theory, recommends matching of costs with benefits. In DCF methodology cash inflows get unmindfully treated as measures of benefits, which can be compared against the investment costs.

Second fallacy of DCF is under-statement of costs, which is counted as a violation of accounting principle; this is unconsciously done while discounting is straight forwardly applied to future costs. As per accounting rule (Convention of Conservatism) costs should not be understated. Discounting of costs is going against this accounting prescription. How discounting of costs, as applied in the process of computing NPV, results into choosing one unprofitable project has been illustrated in the following paragraph.

Discounting of Future Cost: Violation of Accounting Principles

In case of unconventional cash flows DCF results in serious distortions to its valuation result. Owing to some conceptual ambiguity, academicians are not taking any initiative to take any remedial step against these kinds of flaws. Example shown in Table 2 makes the point clear.

Table. 2.Project X: An Example of Confusion

Year	0	1	2
Cash flows ($)	-2000	8400	-7200

Project X, as shown in Table 2, is an unprofitable investment proposal; simple arithmetic shows that the sum of inflows is equal to $8400, while sum of outflows is $9200. Having a look at the figures given in Table 2, anybody with sense of simple arithmetic will say that it is an unprofitable project. However, using a high discounting rate like 25% an optimist analyst may present a picture of a sizeable value addition of $112 as given below.

$$\frac{8400}{(1+.25)} - \frac{7200}{(1+.25)^2} - 1000 = 112$$

Applying DCF to this problem is amounting to violation of accounting convention, because here second year's costs have been heavily discounted. "When this type of understatement of costs is done, firms unknowingly compute an index of fictitious NPV", (Roy Dipen, 2010). At the time of computing IRR, while future benefits and future costs of several years are simultaneously discounted, in some cases, accountants may get a compulsion rate, instead of earning rate, IRR; however, as this phenomenon has not been sincerely analyzed in any serious research studies, many investors treat a compulsion rate as earning rate. It definitely makes an investor to lose money by investing in unprofitable projects. The following paragraph is presenting an explanation as to why IRR stands as an index of compulsion rate instead of an earning rate.

Table 3: IRR is a Compulsion Rate not Earning Rate: An Example

Time	t_0	t_1	t_2	NPV at t_0
Cash flows	-2000	8400	-7200	0
PV @ 20% discount rate	-2000	7000	-5000	

Table 3 shown above gives the stream of cash flows in the second row and present value of cash flow at 20% discounting rate in the third row. Sum of the PVs is equal to zero, which means that IRR is 20%. It is definitely not the earning rate, but the compulsion rate. Discounting of second year's cost of $7200 at the rate of 20% reduces it to $5000. It creates a compulsion of making $5000 of today to grow into an equivalent amount of $7200 in the second year for meeting expenditures at that time. Compared to discounting of benefits, discounting of cost conveys the just opposite meaning. So, in the process of applying DCF, making discounting of cost and benefits together a big fallacy is injected into the process of valuation. After all, while such an attractive IRR is obtained from calculation, nobody has any reason to rethink if it is a compulsion rate, or an earning rate.

Thirdly, in economics, production is a function of labour and capital; Q = f (L, K). Hence, actual gains can be obtained only after charging the total costs, C = w.l +c.k. , which consists of cost of labour w and cost of capital, k. An objective index of true benefit can be obtained by discounting the streams of future benefits, not the absolute figures of inflows. Mistakenly, in DCF methods we discount cash inflows and outflows and compare the output with the initial investment costs. Both in practical and theoretical sense it is mistaken.

Finally, if there is no cash inflow in a year, no discounting is applied there. It means that no holding cost of capital gets charged, if no inflow is really obtained. This cannot be accepted as a good practice of economics. As a remedy to this problem, present value of the streams of EVAs produced by a project in different years can be treated as a combined index of economic gain resulting from a project.

IMPORTANCE OF STRATEGIC CONSIDERATIONS IN CAPITAL BUDGETING: A SURVEY

Strategic considerations indeed have enormous influence on capital budgeting decisions. To measure, along with other variables, the degree of importance that the firms assign on strategy in formulating capital budgeting proposals, a sample of companies listed on NSE has been surveyed. The responding companies were asked to assign value to different variables on a five point scale. The summarized result of the survey has been shown in Table 4. It is amazing that in a list of eleven variables, the responding firms recorded the second highest average score to strategy. This average is 4.19, which is much higher than 2.50, the theoretical average. It indicates that firms are keeping their strategies in the forefront every time capital budgeting proposals are designed and evaluated.

Table 4: Decision Variables and their Importance

Decision Variable	Average Score
Profitability	4.67
Corporate Strategy	4.19
Environmental Compliance	4.03
Technology	3.74

In the second part of the study, CFOs of the responding firms were asked to specify the objectives on which they assign the highest priority. The summary of the responses has been tabulated below in Table 5. The readings of last column show that the firms assign the highest priority to acquiring the biggest market share. The second highest importance they assign on steady sales growth. Only nine companies indicate that they give very high priority to gradual rise in share price, which really amounts to shareholders' wealth maximization. This is the lowest number shown in the last column. The findings indicate that the emphasis of contemporary management is assigned considerably on the corporate strategy, which is a major shift from the traditional goal of maximization of shareholders' wealth.

Table 5: Priority Assigned to Objectives

	Degree of Priority				
Objective	Very Low	Low	Moderate	High	Very high
To show that sales are growing fast	0	4	1	11	14
Acquiring the biggest market share	1	1	2	10	16
To ensure regular payment of return	1	0	6	13	10
To ensure gradual rise in share price	1	2	5	13	9

Source: Survey Responses

The findings presented in Table 5 reflect that companies today don't get confined to pursue a single goal; instead, they strive to reach multiple goals with different levels of priority. Therefore, a method of appraisal using the measure of a single goal is inadequate to stand as the perfect method of appraisal in capital budgeting. It points to the need for using a method that simultaneously takes into account several factors and accommodates several goals.

FACTOR MODEL

Traditional financial models such as IRR or NPV confine the focus of investment appraisal on a single decision criterion, - profitability, which inherently suffers from short-run bias. In real world, when the selection of a long-term investment proposal is done, multiple criteria and myriads of constraints are taken into account. The nominal financial appraisal based on DCF models cannot capture the complexity and trade-offs involved in the real life decision-process of project selection. In an attempt to overcome the limitations of DCF models, some comprehensive models encompassing multiple variables and criteria have been developed. Some of those models include

a) 0-1 Factor Model
b) Un-weighted Factor Scoring Model
c) Weighted Factor Scoring Model
d) Constrained Weighted Factor Scoring Model

In some standard textbooks of project management, thorough discussions about different factor models are available [see Meredith and Mantel (2000)].

While applying 0-1 Factor Model, senior managers and experts assign 1 to a factor, when the project qualifies the given factor and assigns 0 if it does not. The project that qualifies sufficient number of factors is selected. In case of mutually exclusive projects, the project that qualifies the highest numbers of factors is recommended for selection. The fundamental merit of this method is that the appraisal is made on the basis of several criteria, instead of a single criterion. The limitation of this model is that it does not categorize the factors in terms of their relative importance in the context of the firm's survival and the goals for which the firms strive. This method gives equal weights to all factors.

In Un-weighted Factor Scoring Model, instead of assigning 0 and 1 to a factor, scores are determined on the basis of the degree of accomplishment of the factor. The limitation of this method is that some less important factors may have high scores and this can make the total score too high. This may result in choosing a project of lesser merit that has limited contribution to company's mission or goal. To overcome the limitations of the above methods, Weighted Factor Scoring Model has been recommended. This method has been discussed in the following paragraph.

Weighted Factor Scoring Model

In Weighted Factor Scoring Model, in the first step the factor scores are assessed on the basis of level of attainment on the factors; later, weights are assigned to different factor scores, based on the relative importance of the factors in the attainment of the corporate objective. Symbolically the method can be expressed as below:

$$S_i = \sum_{j=1}^{n} s_{ij} w_j$$

S_i = Total Score of ith project

s_i = Score of ith project on jth criteria

w_j = Weight of jth criteria

The weight w_j may be generated using Delphi Method. However, this method is grossly subjective; because, the weights are initially decided by experts based on their wisdom. How a set of important factors can be identified for evaluation has not been indicated in the model. Secondly, no objective method has been recommended for determining the weights of the respective factors. Next part of this research work is dedicated to handle the issue.

FACTOR ANALYSIS, FACTOR EXTRACTION AND FACTOR WEIGHTS

This paragraph is dedicated to identifying the relevant factors and determining the corresponding factor weights so that Weighted Factor Scoring Model can be successfully used. To meet this goal, at the time of field survey, responding CFOs were asked to assign value to each of the variables enlisted in Table 6, given below, on the basis of their relative assessment of importance. The respondents were asked to mark score for each variable on a '5 point scale' of 1 to 5 (1 meaning "unimportant", 5 meaning "very important").

Table 6: List of Variables Affecting Selection of a Project

i)	Strategy	vi)	Technology
ii)	Environment	vii)	Working convenience,
iii)	Organization Structure	viii)	Market share and Product market competition
iv)	Profit	ix)	Future Orientation
v)	Cost of capital and Liquidity	ix)	Rivals' modernization programme

The data gathered from the questionnaire responses have been analyzed to explore the important dimensions of capital budgeting decisions. SPSS output of Factor Analysis has been given below in Table 7 and Table 8:

Table 7 :Total Variance Explained

Comp-onent	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.271	29.738	29.738	3.271	29.738	29.738
2	2.470	22.453	52.191	2.470	22.453	52.191
3	1.750	15.913	68.104	1.750	15.913	68.104
4	1.277	11.610	79.714	1.277	11.610	79.714
5	.665	6.049	85.763			
6	.645	5.863	91.626			
7	.361	3.282	94.907			
8	.236	2.145	97.052			
9	.150	1.366	98.418			
10	.104	.944	99.362			
11	.070	.638	100.000			

Extraction Method: Principal Component Analysis.

The output given above indicates presence of the influence of four different factors in the process of capital budgeting. Component matrix, as shown in Table 8, is explaining contribution of variables in the construction of factors.

Table 8: Component Matrixa

	Component			
	1	2	3	4
Strategy	.591	.305	-.169	.467
Environment	-.075	.501	.394	.618
Organization Employee	.490	.424	-.530	.116
Profits	.502	-.538	.491	.154
Cost of capital	.474	-.528	.621	.163
Liquidity	.646	-.199	.092	-.596
Technology	.386	.677	.424	-.212
Work Convenience	.267	.860	.220	-.227
Market Share	.625	-.162	-.528	-.114
Future Orientation	.751	-.294	-.330	.359
Rivals' Modernization	.779	.166	.186	-.144

Extraction Method: Principal Component Analysis.
a. 4 components extracted.

Four important variables that constitute first factor are strategy, competitors' modernization, future orientation and market competition. These are different measures of a dimension called strategic perspective. Therefore, the first factor may be called strategic factor. Technology and work convenience strongly contribute to second factor; hence, second factor may be called technological factor. The third factor is constituted by profits and costs; hence this factor may be termed as economic factor. In the fourth factor the major contributing variable is environment; hence, the fourth factor may be termed as environmental factor.

Table 9: Reliability Statistics

Cronbach's Alpha	N of Items
0.728	11

Reliability Statistics, Cronbach's Alpha computed from the compiled data is 0.728. It indicates that result obtained from the study is reliable. The result of the study reflects that consciously the Indian corporate houses assign the highest weights to strategic factors; Weights that they assign to different factors are as shown in Table 10 given below:

Table 10: Factors, Eigen Values and Factor Weights

Factors	Eigen Values	Weights
Strategic Factors	3.271	37%
Technological Factors	2.470	28%
Economic Factors	1.750	20%
Environmental Factors	1.277	14%

Therefore, while in industrial practice management is confronting the problem of identifying relevant factors and deciding the importance they should assign to each of the factors, findings of this research study unfolds an alternative solution to this problem. As any model based on measurement of a single criterion has inherent limitation, factor model can be used for comprehensive evaluation of different dimensions of a long-term investment and eliminate biases and hubris. Consultancy houses can conduct similar study and explore relevant factors and their corresponding Eigen Values. Factor weights may be subsequently computed on the basis of Eigen values of the factors. An example of Factor Scoring Framework has been shown in Appendix 1 of this paper. A hypothetical example of a project of car making has been used to show how Eigen values can be used in Weighted Factor Scoring Model to arrive at well encompassed sound decision. Computations in this regard have been shown in Table A in the Appendix.

Appendix 1:
Factor Scoring Framework: an Example

1. Strategic Factor Scores

Strategy	Brand capitalization	Niche	Differentiation	Cost Reduction	Innovation
Scores	1	2	3	4	5

2. Technological Factor Scores

Nature of Technology	Technology Scores
Prevalent Technology	1
Prevalent Technology with new upgradation	2
New Technology and Prototype duly tested	3
Tested New Technology but Human Resource not Trained	4
Tested New Technology with Trained Human Resource	5

3. Economic Factor Scores

NPV	NPV = $10 ml	NPV = $20 ml	NPV= $30 ml	NPV = $40 ml	NPV = $50 ml
Scores	1	2	3	4	5

4. Environmental Factor Scores

Environmental parameters	Diesel Car	Petrol Car	Hybrid Car	Battery-led Electric Car	Solar car
Scores	1	2	3	4	5

Say, an Indian car maker has adopted the project of introducing a small diesel car with the strategy of mass production and cost reduction. The car maker has trained manpower for its internally designed new technology. The car is targeted to lower middle class; hence, the projected NPV is estimated to be close to $10 million.

Depending on the result of the study made in this paper and Eigen Values of respective factors, final score as per Weighted Factor Scoring Model will be as below in Table A:

Table A: Application of Weighted Factor Scoring Model- an Example

Factors	**Factor Score**	**Eigen Values**	**Weights**	**Weighted Scores**
Strategic Factors	4	3.271	37%	1.48
Technological Factors	5	2.470	28%	1.40
Economic Factors	1	1.750	20%	0.20
Environmental Factors	1	1.277	14%	0.14
	Total Weighted Factor Score			3.22

Decision: As the Total Weighted Factor Score 3.22 is more than the average 2.5, the project may be accepted. However, if environment is counted as a constraint, [as it happens in Delhi, where new diesel car is not given registration], the project may be forced to be dropped.

CONCLUSION

Using DCF methods and choosing projects with attractive indices of value addition is no guarantee that all firms using DCF methods will definitely add value to shareholders' wealth. Real life experiments don't provide adequate evidence to add substance to this belief. In fact, DCF methods are suffering from limitations, which are mostly due to violation of basic accounting rules. Application of DCF grossly results in over-statement of gains that misleads CFOs in accepting unprofitable projects. Industry practice reveals that corporate houses assign considerable priority on strategic, technological, economic and environmental factors at the time of taking capital budgeting decisions. Evidences from research findings indicate that while the corporate houses take decisions they simultaneously strive for different goals with different levels of priority. Therefore, instead of relying simply on DCF methods, Weighted Factor Scoring Model that takes into account several factors into a systematic analysis can be safely used to avoid biases and hubris associated with methods based on measures of a single criterion. Empirical methods may be scientifically used for identifying the factors and determining the respective factor weights. This is likely to result in application of a pragmatic approach to capital budgeting.

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Performance Evaluation of Hybrid Mutual Fund Schemes in India: An Empirical Study of ELSSs

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ABSTRACT

In a modern world, every investor wishes to a hybrid scheme that provides highest possible returns, full safety of his money, and 100% tax deduction and no lock-in period. An Equity Linked Savings Scheme (ELSS) is an open-ended Equity Mutual Fund that not only helps to investors for saving the tax, but also gives an opportunity to grow the money and tax exemptions. The present study measures the performance and growth pattern of ELSS of selected banks with the help of selected parameters such as Return, Beta (?) value, R-Square, Standard Deviation, Sharpe's Ratio, Risk Adjusted CAGR, Expense Ratio, etc. The study concluded that the ELSS mutual funds are becoming the preferred choice of investment as it capable to provide better returns than the other tax saving options.

Key words

ELSS, NAV, AUM, Sharpe Ratio, Risk Adjusted CAGR, Beta Value, Expense Ratio.

In a modern world, every investor wishes to a hybrid scheme that provides highest possible returns, full safety of his money, 100% tax deduction under Income Tax Act 1961 and no lock-in period. An Equity Linked Savings Scheme (ELSS)[1] is an open-ended Equity Mutual Fund that not only helps to investors for saving the tax, but also gives an opportunity to grow the money. It qualifies for tax exemptions under section (u/s) 80C of the Indian Income Tax Act, 1961. Equity-linked securities can be in the form of a single stock, a group of stocks or an equity-based index, such as the S&P 500.

An ELSS is one type of hybrid mutual fund and its portfolio is a combination of range of asset categories including equity, debt, gold and real estate. The maximum is the input of equities, cumulative convertible preference shares and fully convertible debentures and a bit of bonds of companies. Money market instruments contribute the minimum portion of the total amount invested in any ELSS. The asset allocation is almost preset and is in harmony with SEBI guidelines and also depending upon the tax incentives and liquidity.

The main objective of All the ELSS is to provide opportunity to the investors to participate in the growth of value of investments in equities & equity linked securities, over a period of time, in addition to tax benefits. There are various ELS schemes provided by the banks and financial institution to the investors due to the growing popularity of hybrid mutual fund schemes. But in case of date of inception, **SBI Magnum Tax Gain Fund, Canara Robeco Equity Tax Saver Fund and Baroda Pioneer ELSS 96** Fund are the oldest schemes among ELS schemes. The present study generalized the results on the basis of the performance of these ELSS. A Brief characteristic of the selected ELS schemes for the study have been given in Table 1.

Table 1. Key Features of the Selected Equity Linked Saving Schemes

Scheme Name	Date of Inception	Minimum Investment	NAV as on 1st April 2005		NAV as on 31st March 2015	
			D	G	D	G
SBI Magnum Tax Gain Scheme	March 1993	500	12.35	8.34	45.61	114.32
Baroda Pioneer ELSS 96 Fund	March 1996	500	12.31	12.31	31.95	31.95
Canara Robeco Equity Tax Saver Fund	March 1993	500	6.81	6.81	25.94	47.52

Source: *www.moneycontrol.com*
Note: G = growth option   D= dividend option

REVIEW OF LITERATURE

The early literatures concluded that income schemes of mutual fund performing well and expenses ratio play a main role in investment decision (**table-2**). But after 2003, growth and balanced schemes take place and risk-return relationship is the key factors of investment decision in mutual fund. However, growth and income is not as much as only desire of investors after economic crisis 2008. The investors want some other benefits like tax exemptions rather than income and growth option. Therefore, recent studies proved that the schemes provide all these benefits are more popular than single benefits schemes and the hybrid features of scheme is the key factor of investment decision. The present study confined with the hybrid schemes of selected mutual fund.

OBJECTIVES OF THE STUDY

The main objective of the study is to evaluate and measure the efficiency of selected ELS mutual funds schemes in the development of mutual fund industry with reference to ELS schemes provided by SBI, Canara and BOB and try to find out which scheme is highly responsible in development of mutual fund industry. For achieving main objective, following sub-objectives has been formulated:

Table 2. Review of Literature

Literature	Factors of Study	Factors Affected the Investors Decision
Sharpe William F. (1966)	*Average risk and return*	*Good performance was found to be associated with low expense ratio.*
Sarkar & Majumadar (1995)	*Financial performance of close-ended growth funds*	*Performance was below average of the fund possessed high risk.*
Jaydev. M., (1996)	*Returns, benchmark comparison, diversification, selectivity & market timing skills in performance of mutual fund*	*The schemes failed to perform better than the market portfolio due to unsatisfactory Diversification. The performance did not show any signs of selectivity & timing skills.*
Malhotra and McLeod (1997)	*Analysis of mutual fund expenses*	*Fund size, age, fund's sales charge, maturity, turnover ratio and cash ratio.*
Gupta, O.P. & Gupta, A. (2004)	*Investment performance of selected Indian mutual fund schemes*	*The sample funds have not earned even equivalent to risk free rate of return as well as sample funds are not adequately diversification.*
Muthappan & Damodharan(2006)	*The risk & return performance of Indian Mutual fund schemes*	*Risk & return of mutual fund schemes are not in conformity with their stated objectives.*
Acharya & Sidana (2007)	*Classify 100 mutual funds schemes by using cluster analysis*	*Inconsistencies between the investment style and the return obtained by the fund.*
Debasish (2009)	*Measures performance of selected schemes of mutual funds on risk and return basis*	*Franklin Templeton and UTI were the best performers, and Birla Sun Life, and LIC mutual funds showed poor performance due to risk management*
Sondhi and Jain (2010)	*Market risk and investment performance of 36 mutual fund*	*open-ended or close-ended categories, size of fund and the ownership pattern is the significant determinants of the performance of mutual fund schemes.*
Goel & Gupta (2014)	*Growth, challenges and opportunities in Mutual Fund Industry*	*To make additional provisions for investment to cope with market changing scenario.*

1) To review the Equity Linked Saving (ELS) Mutual Fund Schemes in India.

2) To evaluate the performance of selected ELS schemes of Public sector Bank Sponsored Mutual Funds.

3) To measure the efficiency of SBI, Canara and BOB sponsored ELS Mutual Fund schemes in terms of Risk and Returns.

Hypotheses

The study mainly measures the performance of ELSS in mutual fund industry on the basis of risk and return whether ELSS performs efficiently or not. Consequently, the hypothesis being tested is:

H_1: There is no significant difference between the performance of ELS Scheme of SBI, Canara and BOB mutual fund.

H_2: There is no significance difference between growth and dividend option of ELS schemes of mutual fund.

RESEARCH METHODOLOGY

The present study is analytical in nature and based upon secondary source of data where in selected equity linked saving schemes such as SBI Magnum Tax Gain Scheme, Baroda Pioneer ELSS 96 Fund and Canara Robeco Equity Tax Saver Fund have been covered. The performance of selected ELS schemes are taken as Explanatory Variables. The Standard Deviation, Regression, Beta, Sharpe Ratio, Risk Adjusted CAGR, Expense Ratio and Analysis of Variances (ANOVA) are used to evaluate the performance of ELS schemes. The period of the study is from 2006 to 2015. Data has been collected from the financial statements of the companies, SEBI and other reputed sources.

Significance of the Study

Mutual fund is an emerging investment area. But common people have a lot of confusions in selecting the best mutual fund for investment. Proper assessment of various mutual fund performances and their comparison with other funds helps retail investors for making fruitful investment decisions. Among various Mutual fund schemes, the equity linked saving schemes ensures the minimum risks with maximum returns to the investors. Thus, the study helps to investors for better investment decision.

Results and Findings of ELS Scheme

The performance evaluation of selected ELS scheme of SBI, Baroda and Canara bank is measured on the basis of selected parameters such as Total Number and Assests Under Management (AUM) of ELS Schemes, Average annual NAV, Total Return, Beta (â) of the Scheme, R-Square of the Scheme, Standard Deviation, Sharpe's Ratio, Compound Annual Growth Rate, Risk Adjusted CAGR and Expense Ratio.

1. Growth in the Number and AUM of Equity Linked Saving Schemes:

The performance of ELSS in the Indian mutual funds industry can be measured on the basis of rise in the total number of ELSS schemes prevailing in the market during the period of time. **Table-3** shows the growth in number of Equity Linked Saving Schemes floated in the market and AUM in ELS scheme of mutual funds in India for the period from 1st April 2005 up to 31st March 2015.

Table 3. ELS Schemes in India in terms of Number of Schemes and AUM (2006-15)

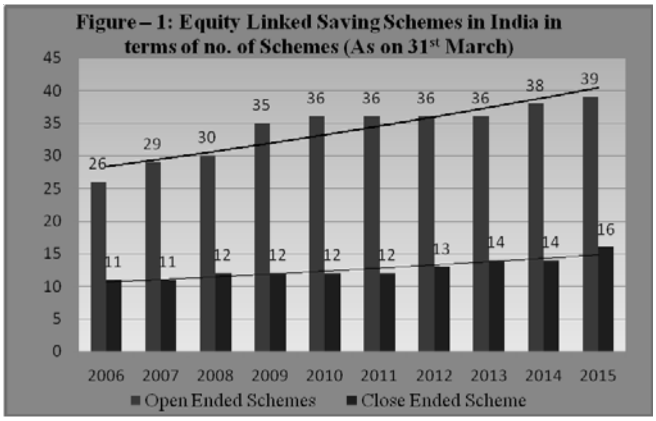
Year	Open Ended Scheme	Close Ended Scheme	Total Schemes	AUM (Cr.)
2006	*26*	*11*	*37*	*6589*
2007	*29*	*11*	*40*	*10211*
2008	*30*	*12*	*42*	*16020*
2009	*35*	*12*	*47*	*12427*
2010	*36*	*12*	*48*	*24066*
2011	*36*	*12*	*48*	*25569*
2012	*36*	*13*	*49*	*23644*
2013	*36*	*14*	*50*	*22746*
2014	*38*	*14*	*52*	*25547*
2015	*39*	*16*	*55*	*39470*
Mean	**34**	**13**	**47**	**20629**
SD	**4**	**2**	**6**	**9563**
CV	**12**	**12**	**12**	**46**
Max	**39**	**16**	**55**	**39470**
Min	**26**	**11**	**37**	**6589**
CAGR (%)	**4**	**4**	**4**	**20**

Source- www.sebi.gov.in

The table -3 shows an increasing number of schemes during the study period in both types of schemes. In 2006, the total number of scheme was 37 (11 close ended schemes and 26 open ended schemes) and it was grow on its peak in the year 2015 at 55 schemes. The number of open ended schemes has always been more than the number of close ended of ELS schemes.

The average number of open ended scheme is 34 for the period with standard deviation of 4 schemes and positive variation in the growth of schemes (coefficient of variation= C.V.) of 12%. It is approximately two and half times greater than the close ended scheme which is averagely 13 schemes with standard deviation of 2 schemes and 12% variation in growth of the schemes. However, the growth rate (CAGR) in close ended scheme and open ended scheme are equal.

Figure-1 clearly shows that the number of open ended schemes is quite high than close ended scheme in each year. The trend line of open ended scheme is increasing continuously from the beginning of the study period. It indicates the investors trust toward the open ended ELS scheme of mutual fund. On the basis of growth in the number of ELS scheme, it can be concluded that the performance open ended ELSS is much better than close ended ELSS.

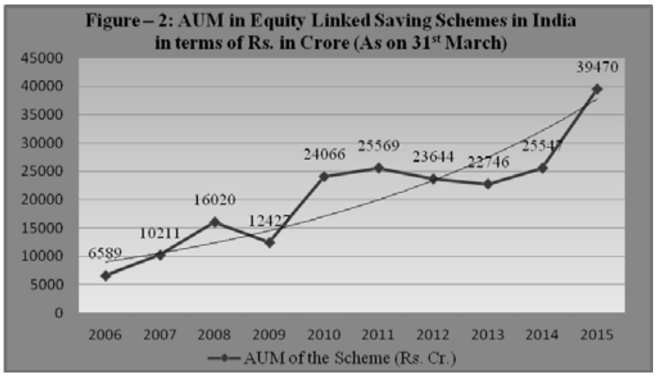


Source: compiled from data at: www.sebi.gov.in

Assets under Management of ELSS

The total value of assets that a mutual fund administers for itself and its customers is known as Assets Under Management or AUM. This value reflects position of the specific fund in the mutual fund industry as a whole. The amount of AUM is simple and the most prominent factor to determine the success or failure of a single fund or an industry.

Table -3 reveal that in case of ELSS, the AUM was Rs. 6,589 crore in 2006 and it was rapidly grow at Rs. 24,066 crore in 2010 and Rs. 39,470 crore in 2015. The CAGR of AUM in ELS scheme is 20% for the period. The average AUM is Rs 20,629 crore for period with variation (C.V.) of 46% in growth of ELSS. The rapid growth of AUM shows the future prospect of mutual fund sector. The Figure -2 indicates that there is progressive trend with little fluctuation during study period in AUM of ELS scheme. It was tremendous increase from March 2006 to March 2015 (from 6589 crores to 39470 crores).



Source: compiled from data at: www.sebi.gov.in

2. Average Annual Net Assets Value (NAV)

The Equity Link Saving funds have been compared on the basis of their average annual NAVs and their growth over and above the previous year values. Table-4 reveals that the ELSS have seen a fluctuated growth in terms of their NAV, after the worst effect of subprime crisis of the U.S in the year 2008 which were caused due to excess lending provided by reputed American banks to people with low or poor credit worthiness. Firms like Bear Sterns, Lehman Brothers, and Meryl Lynch had gone broken and many others were finding it tremendously tricky to balance on their feet. In order to strengthen their balance sheets, these banks wrapped up positions in developing markets which led to a losing swing in markets like India. A simple case in point was the intraday 1400 points fall on the BSE in January 2008 that was brought about by City Bank unwinding its position in many front line stocks in India. In these testing times all the ELSS gave negative growth.

The highest average NAV in a year recorded in the period of study was 114.32 by SBI Tax Saver growth option in the year 2014-15. This scheme has also given highest average NAV of Rs. 59.19 for study period. While the least positive average NAV in the year 2008-09 was of Rs.10.85 by Canara Robeco Equity Tax Savings with lowest average NAV of Rs.16.86 for study period. It is also found that initially when the scheme is launched, the NAV of its growth and dividend option remains more or less closer. But, gradually huge differences between the two values can be seen which is due to intensive ploughing back of profits by growth options which leads to appreciation in the value of investments.

Table 4. Comparative Table for Annual Average NAV of Selected Banks' ELS Mutual Fund Schemes

(As on 31st March 2015)

Year	SBI Magnum Tax Gain Scheme				Baroda Pioneer ELSS 96 Fund				Canara Robeco Equity Tax Saver Fund			
	D	%	G	%	D	%	G	%	D	%	G	%
2005-06	24.71		36.70		18.29		18.29		12.05		12.05	
2006-07	28.56	15.58	42.42	15.59	18.49	1.09	18.49	1.09	12.66	5.06	12.66	5.06
2007-08	34.50	20.80	51.07	20.39	22.87	23.69	22.87	23.69	15.76	24.49	15.76	24.49
2008-09	20.88	-39.48	30.91	-39.48	12.93	-43.46	12.93	-43.46	10.85	-31.15	10.85	-31.15
2009-10	35.46	69.83	57.80	86.99	24.23	87.39	24.23	87.39	19.21	77.05	23.33	115.02
2010-11	33.01	-6.91	60.07	3.93	24.74	2.10	24.74	2.10	18.21	-5.21	25.83	10.72
2011-12	32.05	-2.91	58.35	-2.86	21.73	-12.17	21.73	-12.17	17.29	-5.05	25.96	0.50
2012-13	30.88	-3.65	62.95	7.88	21.41	-1.47	21.41	-1.47	17.15	-0.81	27.89	7.43
2013-14	34.65	12.21	77.35	22.88	23.76	10.98	23.76	10.98	19.46	13.47	32.95	18.14
2014-15	45.61	31.63	114.32	47.80	31.95	34.47	31.95	34.47	25.94	33.30	47.52	44.22
Mean	**32.03**		**59.19**		**22.04**		**22.04**		**16.86**		**23.48**	
SD	**6.68**		**23.66**		**4.99**		**4.99**		**4.41**		**11.38**	
CV	**20.85**		**39.98**		**22.64**		**22.64**		**26.15**		**48.47**	
Max	**45.61**		**114.32**		**31.95**		**31.95**		**25.94**		**47.52**	
Min	**20.88**		**30.91**		**12.93**		**12.93**		**10.85**		**10.85**	
CAGR (%)	**6.32**		**12.03**		**5.74**		**5.74**		**7.97**		**14.71**	

Source: www.sebi.gov.in

Note: G = growth option D = dividend option (% = % growth over the previous year NAV)

The highest average NAV of dividend option of ELS scheme, for the study period, is Rs. 32.03 of SBI Magnum with variation (CV) of 20.85% (Table-4). The highest overall growth rate (CAGR) of dividend option in Canara Robeco is 7.97%. In the growth option of ELS scheme, the SBI Magnum quotes the highest average NAV as Rs. 59.19 with variation of approximately 40% but the highest overall growth rate (CAGR) in growth option of ELS scheme is represent by Canara Robeco at14.71%. It reveals that the performance of dividend option of SBI Magnum ELS scheme is better but in terms of NAV, Canara Robeco ELSS is giving more consistent growth rates in comparison to its counterparts.

1. Total Return

The total returns are the difference between the net asset value (NAV) of two separate dates divided by the NAV of the preceding date. It measures the overall profitability performance of the schemes. It can be calculated as:

Total Return = (Closing NAV - Opening NAV) / Opening NAV)*100

The return values of S&P CNX 500 index (335.76%) has also been taken as a benchmark for more effective interpretation of the results.

Table 5. Comparative Table of Total Return in ELS Schemes (%)

(As on 31st March 2015)

SBI Magnum Tax Gain Scheme		Baroda Pioneer ELSS 96 Fund		Canara Robeco Equity Tax Saver Fund	
Growth	*Dividend*	*Growth*	*Dividend*	*Growth*	*Dividend*
523.34	269.31	159.55	159.55	597.80	280.91

Source: Calculated from the table-4 average annual value (2006-15)

Table-5 shows that only growth option of Canara Robeco and SBI Magnum maintains the standards. The Canara Robeco ELSS is giving highest returns to their investors of 597.80% (growth option). Second maximum ELSS return is recorded by SBI Tax Savings growth option (523.34%). In the dividend option, canara Robeco is the leading scheme. It can be concluded that SBI and Canara Robeco ELSS, during last decade gives more return than benchmark return in growth options. In nut shell, Canara Robeco ELSS is the more profitable scheme.

2. Beta (β) of the Schemes

Beta is the measurement of volatility of the return with fluctuation in the market return. It can be calculated as:-

Beta (β) = Covariance of Portfolio Return and Market Return/Variance of Market of Market Return

OR Beta (β) $= \Sigma xy / \Sigma x^2$

Beta is a measure of risk which applied to a fund provides functional statistical information. It indicates a fund's precedent price volatility relative to a particular stock market index. A fund with a Beta greater than 1 is considered more volatile than the market and less than 1 means less volatile.

Table 6. Comparative Table of Beta (â) in ELS Schemes (%)

(As on 31st March 2015)

SBI Magnum Tax Gain Scheme		Baroda Pioneer ELSS 96 Fund		Canara Robeco Equity Tax Saver Fund	
Growth	*Dividend*	*Growth*	*Dividend*	*Growth*	*Dividend*
1.326	*0.347*	*0.253*	*0.253*	*0.642*	*0.244*

Source: Calculated from the table-4 average annual value (2006-15)

Table -6 reveals the Beta value of fund returns of the selected ELSS schemes as on 31st March 2015 calculated on the basis of average returns of the last ten years. The table shows that the Beta value of SBI Magnum Tax Gain growth option at 1.326. It is maximum in line with the changes in the market. The fund which is least affected by the market risk is BOB Pioneer ELSS. As per the risk measure is concerned, it can be concluded that SBI ELSS most volatile towards the market fluctuation as compared to their counterpart growth options and Baroda ELSS is less risky.

3. R-Square of the Schemes

R-square measures a fund's movements against its particular benchmark index on a scale. Here, R-square means that portion of change in NAV which is affected by the change in the market. The 'Market' refers to BSE Index. In Table-6, R-square values of the selected ELSS has been given as on 31st March 2015 which have been calculate by using the daily returns of the last ten years. Here r^2 has been calculated between portfolio return and Benchmark S&P CNX 500 index return.

Table 7. Comparative Table of R - Square value in ELS Schemes (%)

(As on 31st March 2015)

SBI Magnum Tax Gain Scheme		Baroda Pioneer ELSS 96 Fund		Canara Robeco Equity Tax Saver Fund	
Growth	*Dividend*	*Growth*	*Dividend*	*Growth*	*Dividend*
0.88	*0.76*	*0.72*	*0.72*	*0.89*	*0.86*

Source: Calculated from the table-4 average annual value (2006-15) and S&P CNX 500 index

The highest R-square was noted of Canara Robeco ELSS growth option with the value of 0.89 (table-7) which implies that 89% of the change in the NAV of ELS fund is due to the fluctuations in the market. The fund which is most adequately diversified is the BOB Pioneer ELSS 96 in both options with an R-square of 0.72. The table also indicates that market condition is more a descriptive variable for the NAVs of ELSS. In a nutshell, it can be said that on an average portfolios of all ELSS are effectively distributed. In the light of R- square it can be conclude that BOB Pioneer ELSS 96 is less market sensitive in comparison to other.

4. Standard Deviation

Standard deviation is the most used measure to estimate a fund's risk than any other. In simple way, it measures how much a fund's return varies around its mean or average value. Thus, A higher value of standard deviations means more deviation from its average rate of return. The table-8 reveals the standard deviations of fund returns of all the selected ELSS as on 31st March 2015 which have been calculated by using the daily return values of the schemes.

Table 8. Comparative Table of Standard Deviation value in ELS Schemes (%)

(As on 31st March 2015)

SBI Magnum Tax Gain Scheme		Baroda Pioneer ELSS 96 Fund		Canara Robeco Equity Tax Saver Fund	
Growth	*Dividend*	*Growth*	*Dividend*	*Growth*	*Dividend*
23.66	*6.68*	*4.99*	*4.99*	*11.38*	*4.41*

Source: Calculated from the table-4 average annual value (2006-15)

It is clear from the table 8 that the highest Standard Deviation (S.D) is represented by SBI Magnum Tax Gain scheme (23.66 for growth option) followed by Canara Robeco ELSS (11.38 for growth option). It means that this fund gives the most unpredictable returns. The Baroda ELSS shows lowest deviation in its return. Therefore, it can be concluded that growth option ELSS are more volatile and random as compared to dividend option ELSS in terms of their returns and BOB Pioneer ELSS 96 is most consistent performer.

5. Sharpe's Ratio

Sharpe's Ratio model evaluates funds on the basis of reward per unit of total risk. A high and positive Sharpe's ratio is an indication of a finer risk adjusted performance. Here the Sharpe's Ratios have been calculated on the basis of average portfolio return, Standard Deviation of the fund in the last decade and 91 day Treasury Bill return (risk free rate of return). The table-9 shows the Sharpe's ratios of all the selected ELSS as on 31st March 2015 along with Sharpe's ratio of the S&P CNX 500 index as the benchmark for more effective analysis of the data.

Table 9. Comparative Table of Sharpe's Ratio in ELS Schemes (%)

(As on 31st March 2015)

S&P CNX 500	SBI Magnum Tax Gain Scheme		Baroda Pioneer ELSS 96 Fund		Canara Robeco Equity Tax Saver Fund	
	Growth	*Dividend*	*Growth*	*Dividend*	*Growth*	*Dividend*
3.29	*2.21*	*3.76*	*3.03*	*3.03*	*1.45*	*2.25*

Source: Calculated from the table-4 average annual value (2006-15)

The table-9 clearly indicates that the ratio of all the schemes is less than the benchmark index. All the funds have at most given better outcomes than the market. SBI Magnum Tax Gain fund (3.76 dividend option) can be adjudged as the best amongst selected fund houses. So it can be concluded that on an average SBI Magnum Tax Gain is managed to provide superior domino effects as compared to other ELSS.

6. Compound Annual Growth Rate

Compound Annual Growth Rate is the year-over-year growth rate of an investment is for a specified period of time. It is an improved version of the total percentage growth rate. Table-10 shows the CAGR of benchmark and selected ELSS, calculated on the basis of average annual return of the year 2005-2006 and 2014-2015.

Table 10. Comparative Table of CAGR in ELS Schemes (%)

(As on 31st March 2015)

S&P CNX 500	SBI Magnum Tax Gain Scheme		Baroda Pioneer ELSS 96 Fund		Canara Robeco Equity Tax Saver Fund	
	Growth	*Dividend*	*Growth*	*Dividend*	*Growth*	*Dividend*
12.22	*12.03*	*6.32*	*5.74*	*5.74*	*14.71*	*7.97*

Source: Calculated from the table-4 average annual value (2006-15)

Table -10 indicates that BOB Pioneer ELSS 96 is giving least CAGR of 5.74% in both growth and dividend options, which is much lower than benchmark return and from the least CAGR of others. Canara Robeco growth option being the exceptionally good performer is given a positive CAGR (14.71%) i.e. it can be assumed that it is grown with every compounding cycle. This growth is even higher than the growth experienced by our benchmark index (12.22%). Hence, it can be concluded that the Equity Linked Saving Schemes of Canara Robeco provides higher growth opportunity than other selected bank.

7. Expense Ratio

The bank is done various expenses to comply with and control of any mutual fund schemes. All such expenses and charges can be evaluated under a single category called expense ratio. Expenses are the decision making measure of how superior the returns of a mutual fund will be. In Table 11, the average Expense Ratios of the selected tax saver schemes is given on the basis of the data for the period starting from 1st April 2005 up to 31st March 2015. Higher ratio shows the inefficiency in management of cost and lower ratio shows efficiency in management of operating cost of funds.

Table-11: Comparative Table of Expense Ratio of ELS Scheme (%)

(As on 31st March 2015)

Scheme Name	SBI Magnum Tax Gain Scheme	Baroda Pioneer ELSS 96 Fund	Canara Robeco Equity Tax Saver Fund
2005-06	*2.14*	*1.27*	*1.25*
2006-07	*1.89*	*1.30*	*1.15*
2007-08	*2.5*	*1.69*	*2.50*
2008-09	*2.5*	*2.50*	*2.50*
2009-10	*1.78*	*2.50*	*2.38*
2010-11	*1.81*	*2.50*	*2.33*
2011-12	*1.82*	*2.50*	*2.29*
2012-13	*2.21*	*3.22*	*2.65*
2013-14	*2.28*	*3.02*	*2.59*
2014-15	*2.26*	*2.88*	*2.63*
Average	**2.12**	**2.34**	**2.23**
SD	**0.28**	**0.69**	**0.56**
CV	**13.13**	**29.49**	**24.93**
Maximum	**2.50**	**3.22**	**2.65**
Minimum	**1.78**	**1.27**	**1.15**
CAGR	**0.55**	**8.53**	**7.72**

Source: www.valueresearchonline.com

The lowest expense ratio of ELS schemes during the study period is presented by Robeco Equity Diversified Fund. It spent only 1.15% of its returns earned on operational activities in a specific year (2006-07). The maximum average expense ratio position is held by Baroda Pioneer Growth Fund (3.22%) which indicates Baroda Pioneer is not able to control its operational expenses.

The mean of overall expense ratio for the period is 2.12% with variation of 13.13% of SBI's ELS scheme, 2.34% with variation of 29.49% of Baroda,s ELS scheme and 2.23% with variation of 24.93% of Canara's Scheme (table 6.30). Therefore, it can be concluded that on an average all three are almost similar, but SBI Magnum Tax Gain is better in expenses performer. SBI Magnum Tax Gain scheme is found the most misers towards the operational expenses which included items like fund manager's fee, audit fee etc. during the study period.

8. Statistical testing of difference between average NAVs of selected ELSS

The data for the ELSS was tested separately for growth and dividend option. To begin with the choice of the three schemes has been justified by trying to know whether there is significant difference between the average NAVs of their ELSS or not. For this ANOVA was applied to test the hypothesis:

Table – 12: ANOVA Results for Mean of NAVs of ELS Schemes

		Sum of Squares	df	Mean Square	F	Sig.
GROWTH Option	Between Groups	8859.944	2	4429.972	18.605	.0008
	Within Groups	6429.048	27	238.113		
	Total	15288.992	29			
Dividend Option	Between Groups	1189.644	2	594.822	20.065	.0004
	Within Groups	800.394	27	29.644		
	Total	1990.038	29			

Table-12 reveals the output of the One Way ANOVA analysis and check the significant difference between mean of NAVs of ELSS. In the case of growth option and dividend option significance level is 0.0008 and 0.0004, which are less than significance level 0.05. Therefore the null hypothesis is rejected. Hence null hypothesis which states that there is no significant difference between mean of NAVs of ELSS has also rejected. So, the interpretation will be that there is significant difference between the selected mutual fund average NAVs.

CONCLUSION

Equity Linked Savings Scheme (ELSS) is a hybrid scheme that provides highest possible returns, full safety of his money, and 100% tax deduction under income tax and no lock-in period. The parameters under which ELSS have recorded better figures are average annual NAV, percentage growth in NAV, total Return, beta, R – Square, standard deviation, expenses ratio and adjusted CAGR. On the basis of ELSS taken as the representative sample for the Indian mutual funds industry, it can be depict that mutual funds are growing fast with fundamental shift from single benefits schemes to multiple benefits schemes. Therefore, ELSS becoming the preferred choice of investment for the literate working class as that are capable of providing better returns with minimum risk, no lock-in-period and tax advantage. There is continues growth in total no. of ELSS schemes available in the market and their AUM has also shows increasing trend.

The performance of SBI Magnum Tax Gain fund is better in case of NAV, Sharpe's Ratio and operational expenses amongst selected fund houses. But, the BOB Pioneer ELSS 96 fund shows the lowest beta value (less risky), lowest R-square (less market sensitive) and lowest Standard Deviation (most consistent performer) in comparison to other. However, Canara Robeco ELSS gives more return than benchmark return and provides higher growth opportunity (CAGR) than other selected banks. Thus, Investors can park their funds in these ELS schemes as per the suited objectives.

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Modeling for Determinants of Mutual Fund Family Performance: Marked Remission to Indian Mutual Fund Industry

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ABSTRACT

Indian mutual fund industry is experiencing tremendous growth, which is the outcome of infrastructural expansion and advancement in India. This paper contributes to the mutual fund performance literature by bridging the gap of an empirical research based on determinants of mutual fund family as a predictor of mutual fundperformance in the context of Indian mutual fund industry.In preference to treating mutual fund as an entirely independent entity, it has been treated as a larger group, the mutual fund family. It has been witnessed that creating multiple mutual funds is somehow inefficient. So, to overcome the inadequacy associated with single stand alone funds, fund family concept has been launched. This paper encapsulates the central line of reasoning of mutual fund separation theorem and with this foundation it presents the influential factors which contour the fortune of a fund family and its associated funds in the Indian market in the form of an analytical graphical model which represents a set of variables and their interrelationships on the basis of structured questionnaire based on Inductive approach and Likert scale method of responses. Along with this, effect of demographic variables on investor's decision have also been analyzed.A sample size of 200 based on stratified sampling technique has been considered, which have been bifurcated as 100 mutual fund professionals and 100 mutual fund investors.PCA Method of Exploratory Factor analysis has been used for data analysis. Sampling frame considered for data collection are the mutual fund professionals along with mutual fund investors from Delhi/ NCR.

Results of the study reveals that compared to stand alone funds, a fund family has a greater flexibility in reallocating its human and other resources in response to market opportunities and its performance is mainly affected by factors like fund family returns, market coverage, economies and management structure of fund family.Along with this demographic variables also play a very crucial part in framing the psyche of an investor about any investment avenue, especially mutual funds. As mutual funds are in an embroyonic stage in India as compared to global market.

INTRODUCTION

Well recognized Portfolio Theory by Harry Markowitz bestowed conduit for mutual fund separation theorem.It is one of the pearls of Mathematical Finance. This theorem states that an investor's optimal portfolio can be build by possessing certain mutual funds in suitable ratios.Benefits of following mutual fund theorem are that on the fulfillment of relevant preconditions it becomes easier for the investor to purchase a smaller number of mutual funds than to purchase larger number of individual assets.Along with this, collaboratively, on theortetical and practical aspect, mutual fund portfolios can be examined in a mean-variance scaffold, with the assumption that every investor is holding a minimum variance portfolio. This theorem works as a manual for mutual fund family managers and sponsors.With this postulation, fund families strive to offer those mutual funds to the market which serve these critical prerequisites to attract higher market pie of investors.

Key words

Mutual funds, Fund Family, Performance, Outsourcing, brand value, economies, management structure.

"When we consider the mutual fund industry over the past decade, one of the most notable developments is the enormous growth of funds that are operated by fund families". (Verbeek and Huij, 2007).

A mutual fund family is a group of funds managed by the same management company. Study done by Nanda et.al. (2004) revealed that more than 80% of the U.S. mutual funds belong to a family. Rationale for this has several reasons in backdrop in the same study, researchers mentioned that a family's brand value helps to comfort investors about the selection and monitoring of investment managers. Apart from these, economies of scale in promotion, servicing, and distribution along with centralized decision making play an important role in enhancing the value of fund family.

Conventional acumen also holds that two brains are better than one. In present scenario, similar perception holds true in context of Indian mutual funds industry. Over the preceding several years, many mutual fund companies have transformed their funds earlier run by a single manager to team status. Contribution of team managed equity funds in US augmented between 1994 and 2003 from 5% to about 46%. Considering the facts and figures related to year 2015-16, India has miserable condition if ratio among mutual fund investment and GDP are compared, it is mere 7% in India, where as 114 % in Australia, 91% in USA, 51% in UK.The mutual fund industry is superlatively suited to scrutinize the evaluations done by teams and comparing the impact of the same over retail investor's investment psychology, as it encompasses a real world setting.

Lot of empirical research papers have mentioned that the overabundance of accessible financial institutions reveal a wide variety of trading behaviours, many of them are practically tough to merge with existing theories. Gruber (1996) mentioned in his research that most models predict that investors will make only a small investment in passively managed funds but in realism thousands of passively managed funds exist in the market. As Sharpe(1992) and Brown and Goetzmann(1997) demonstrate that mutual funds exploit a huge assortment of trading tactics. This paper tries to bridge the existing theory and current mutual fund investor's opinion regarding the same. Discussion pertaining to mutual fund family mandatorily involves fund managers as they hold a very vital position in the organization. Majority papers on mutual funds like Allen and Gorton (1993), Dow and Gorton (1997), Ou-Yang (1997), Das and Sundaram (2000), Nanda, Narayanan and Warther (2000), have concluded that mutual fund managers are potentially "skillfully conversant". Cosidering the same findings as backdrop as mutual fund managers are employees of "mutual fund families" a priori emphasis is demanded by them. Consequently, this paper does not impart a competing theory to the above literature, except, a complementary one. In particular, this paper seeks to explore the determinants related to performance of mutual fund family. In equilibrium, most of the the mutual fund families proposes to trade portfolios which are useful to the subset of the population of securities. The outcome of this investigation is a theory that provides an explanation for why fund families exist and why investors prefer to invest in funds attached with some fund family.

Literal connotation of the word 'family' explains it as,"Two or more people who share similar aspirations and values, have long term stanchness towards one another". It makes this expression implicit that funds would be more similar inside the fund families as compared to outside fund families. There are several grounds for this believe as a matter of fact portfolio managers within families have access to common research analysis reports produced by either the internal or external research agencies, many families also have a prearranged investment style and top of it, a family's rapport with an investment brokerage firm also have affects on their stock holdings.

A glimpse on the growth of present Indian mutual industry will throw some light on the importance of mutual fund family. AUM of Indian mutual fund industry has increased from Rs.12.65 trillion in June 2015 to Rs. 14.90 trillion in June 2016.Which shows a growth of 18% in assets. Individual investors presently hold a lower share of industry's assets, i.e. 45.6% in June 2016 but on contrary, value of assets held by individual investors in mutual funds increased from Rs. 5.72 lakh Cr in June 2015 to Rs. 6.80 lakh Cr in June 2016, an absolute increase of 18.95%. Institutional investors have occupied greater pie in the market share with 54.4% of the assets. Out of 45.6% share of individual investors, 85% of funds have gone into Equity oriented schemes whereas liquid and money markets have been dominantly ruled by institutional investors with 92% share.

Rationale of the study

In this research work, mutual fund performance has been viewed from a distinctive outlook as compared to most of the existing literature. In preference to treating mutual fund as an entirely independent entity, it has been treated as a larger group, the mutual fund family. It has been witnessed that creating multiple mutual funds is somehow inefficient. So, to overcome the inadequacy associated with single stand alone funds, fund family concept has been launched. This concept helps the investors in opting for the type of asset class investor wants to enter in his portfolio. A large fund family offers various benefits to its investors like one stop shopping for their fund, consolidated fund investment statement, easy fund transfer within the fund family etc. But retail investor neither has exposure towards these benefits nor has awareness.Precisely, lack of clarity regarding factors affecting mutual fund family characteristics is an imperative basis of erroneous investment decisions made by the investors. This study examines from retail invetors perspective, whether these fund family characteristics influences the return a fund generates and fulfills the need of a more realistic and elaborated performance evaluation model along with analyzing the effect of demographic variables on investor's decision.

Concluding, India is in the initial stages, of a revolution in financial market that has already been seen by U.S., U.K. and other developed markets. The U.S. boasts of an asset base that is much higher than its bank deposits. In India, mutual fund assets are not even 10% of the bank deposits, but this scenario has started showing changes gradually. But, reality situation says that banking as financial intermediaries cannot be flouted but yes, it's certain that mutual funds are going to transform the manner in which banks do businesses.

OBJECTIVES OF THE STUDY

The various contemplations beneath the performance evaluation of mutual funds is a matter of concern to the fund managers as well as the investors whether retail or institutional, researchers alike. The present paper attempts to answer following questions relating to mutual fund performance:

1) To determine the effecting variables of mutual fund family as determinants of mutual fund performance.
2) To determine the impact of demographic variables on the investment decisions of mutual fund investors.
3) Topropose amodel for performance evaluation of mutual funds based solitarily on fund family performance determinants.

Paper Organization

The rest of the paper proceeds as follows: Section II: Throws some light on the review of concerned literature. Section III: Notifies about the data set considered with the reasons of various selections, type of research conducted, various research tools applied etc. Section IV: Is concerned with the data analysis of primary data of mutual fund investors based on several research tools. Section V: Briefs about the results of evaluationsand model based on data analysis and finally, Section VI: Concludes the paper.

REVIEW OF LITERATURE

Analysis of mutual fund performance is not a novel theme for mutual fund investors and managers but which way to go is a big dilemma for majority of present investors and potential investors in today's scenario. As variety of calculative mechanisms, models exist in the concerned area and most importantly, every fund manager and every AMC has a different opinion or strategy regarding the performance evaluation measures to be considered. Due to uncommon variables being considered, the evaluation process becomes incomparable at times. Presently, the literature has identified the requirement of more understanding about the fund families, impact of their decisions, management structures etc.

Most mutual funds are members of fund families. Compared to stand alone funds, a family has greater flexibility in reallocating its human and other resources in response to market opportunities. Despite the prevalence of the family organization, little research has been done on the consequences or importance of family membership. The literature has, for the most part, treated funds as though they were stand alone entities. The concerned industry's leading firms manage funds in the form of fund family and are in charge of two-thirds of the industry's mutual fund assets. Although, certainly these fund groups don't pursue similar management practices, they don't have identical management tenure or investment performances. Morningstar researchers revealed in a study that fund families differ in all the above mentioned attributes along with the fees charged by them. The same research entails various effecting factors like corporate culture, management structure, portfolio incentives etc. In addition to all the above mentioned advantages, results of research done by Martin and Clifton (2004) indicates that curbing mutual fund investments to one family has a detrimental effect on investor's risk.

In this section of literature review, we explore the effect of fund size on performance of an active mutual fund. For this matter, a superior, comprehensible outlook towards economies of scale in this industry is desirous from investors as well as practitioner's perspective. As research done by Becker and Vaughn (2001) discussed the plausible effects of diseconomies of scale from the perspective of practitioners. As they need to know when to close funds, amount of compensation to be paid to managers. But here comes a fiddly state of affairs in focus as managers usually start growing size of funds at the expense of gaining higher returns. Till today, even though fund size has a considerable impact on fund performance, there is little literature accessible. Also there are conflicting views with regard to the fund size. Some favor large fund size pointing towards its benefits like more research resources, lower expense ratio (Friedman and Wiles (1998), Hong, Lim and Stein (2000), Chen, Hong and Stein (2002)). Others consider its flipside as large asset base erodes fund performance (Lowenstein (1997), Grinblatt and Titman (1989), Perold and Solomon (1991)). Research of Joseph et.al. (2004) showed that effect of fund size can be more prominently shown on small cap funds. Along with it, study also emphasized that liquidity is an important reason behind performance erosion due to fund size. A new-fangled term with respect to mutual fund return is "spillover effects" between funds in a family-e.g.,a situation when a good performance by one fund augments cash inflow to other funds in the family as well and it has been strongly supported by Khorana and Servaes (1999).It has also been observed that many times fund families actively publicize the performance of their best performing funds to endorse perceptiveness and resultantly greater cash inflows. Ippolito (1992), Gruber (1996), Goetzmann and Peles (1997), Chevalier and Ellison (1997), and Sirri and Tufano (1998) revealed that mutual fund investors reward good performers more as compare to penalizing poor performers. As a resultant, some fund families, especially with lower ability, try to generate more and more star funds to dole out their share even to low performers. Ivkovic (2001) documents a positive spillover effect amongst fund family members. Zhao(2002) also supported the fact that spillover effects have an imperative effect on fund family's decision to close a fund to novel investors.

Past performance related to a fund has a persisting effects. Spritz (1970), Smith (1978), Kane et.al. (1991), and Patel et.al. (1994) reported a positive association amongst past performance of the fund family and its current money flows. On the same track, Langer (1983) suggests that when investment preferences are a result of individual choices, there is more attachment to the preferences of past which play a decisive role in making today's investment decisions. This phenomenon is in harmony with Cognitive Dissonance theory of Festinger (1957). While investigating, De Bondt and Thaler (1985) found that investor behavior is the basis of investor reaction where investors over emphasize on the fund's present or past performance and on its basis forms an opinion about its future performance. Ippolito (1992) also gave the same findings in context of past performance as a determinant of fund family's performance.

In an article by Silverblatt (2013),Jack Bogle, founder of 'The Vanguard Group', revealed that 7% of the mutual funds died every year between 2001 and 2012. But irony of market shows that even though funds are dying at a hasty pace but they are being born at an even quicker clip. In the same context Massa (2003) modeled a process that leads to market segmentation and fund proliferation and which is based on spillover effect. The concept of brand proliferation in the mutual fund industry has gone unnoticed in the financial literature. Khorana and Servaes (1999) pragmatically analyzed the determinants of mutual fund performance and novel contribution of this paper was developing a model on the basis of fund proliferation and category proliferation.According to Lyons H. (2015) approximately 50 percent of American households are direct stakeholders in the U.S. securities markets due to mutual funds proliferation.

For investing in mutual funds predecessor of mutual fund family is the fund manager, who will be the face of AMC for the investor and they are like the rock stars of the financial world. The greatest mutual fund managers produce long term, market beating returns and a deserved capital appreciation to their investors. Here a brief mention of Benjamin Graham, Sir John Templeton etc is inevitable as they have been the greatest fund managers ever in every sense. Khorana (1996) scrutinized a sample of 339 US mutual funds which encountered manager turnover and found that the replacement of a competent fund manager on an average leads to two years of noteworthy underperformance. Dangl et.al (2008), have developed a model for the probable rationale for the replacement of portfolio managers. Through this study it was revealed that lower past performance, and reduced manager tenure are the vital reasons. The same factors have also been revealed in their studies by Khorana (1996) and Chevalier and Ellison (1999). Findings of various studies on replacement of fund managers suggests that if good performing managers are replaced by low performing managers it leads to decline in returns and vice-versa. These results maintain that manager turnover is a crucial reason for the non existence of long term mutual fund performance persistence.

There are numerous costs borne by a fund house with relation to mutual fund. Out of these, some costs are fixed while some are variable. Mammoth of costs occur when a fund house wants to start up a new fund offer in which previously they have not dealt with. Here costs could include hiring new portfolio managers, obtaining new sources of research, developing new risk evaluation and monitoring processes etc., which makes average cost of fund investment very high. Nevertheless, if that task has been outsourced to an asset manager who already have processes and people in place servicing existing portfolios could result in economies of scale for the fund house, if hired as a sub-advisor. As some very well known asset managers like Tom Marsico, Mario Gabelli or Bill Miller, were not affordable by most of the fund houses to be hired as employees but if a sub-advisory arrangement has been created, it has always been beneficial. As in these cases, sub-advisor has been endowing the fund with his own brand value, management services, increased profitability of the fund etc. and all as a package higher what the mutual fund family could achieve on its own. Along with it, location of fund family is also a crucial basis of outsourcing as fund families find it economical to hire sub advisors than to pay hefty amounts to in-house portfolio managers to inveigle them to live in that locale. Outsourcing process has been advocated rational by various researchers like Grinblatt and Titman (1989), Golec (1992), Roll (1992), Das and Sundaram (1998a, b and 2002),Palomino and Prat (2003) and, Li and Tiwari (2009)

Several researches on fund management structure have specified that fund management selection is a strategic decision, usually made uniformly for all the funds by the top management of the fund family. In context of performance of teams versus individual funds, literature offers diverse substantiations. But the results of majority of studies reveal that teams act more rational and they perform better. (Bone et al (1999), Blinder & Morgan, (2000), Rockenbach and Matauschek, (2001), Cooper and Kagel (2004)). Studies by Chevallier & Ellison (1999b), Ding & Wermers (2005) concluded that effective and strong management structures are primarily employed for more extensive and complex tasks. While analyzing the consequences of fund management structure on mutual fund performance, astonishing revelations have come forward. Considering the significant position of management structure of a fund family, it has been researched that team management has a downbeat impact on fund performance. The benefits derived with these structures are overcompensated by additional costs and team specific in competencies or inefficiencies.Fund investors should contemplate fund management structure if it has an effect on managerial behavior and fund performance. (Chevalier& Ellison, 1999b). Various psychological experiments as done by Adams & Ferreira(2003) and Cooper & Kagel (2004) have revealed that choices made by individuals vary from choices made by teams in diverse dimensions, especially, about their riskiness, extremity and quality. Study done by Bar et al. (2005) have shown that investment style of team managed funds have less extreme style as compared to single managed funds. Team managed funds are usually large and they operate in segments.

Mutual funds as an investment avenue serves as a tool for risk mitigation, which implicitly depends upon the fund managers risk appetite. Regarding a fund family's management behavior it has been researched by several researchers and concluded that decisions made by individuals and teams differ in a noteworthy manner. Management teams takes less overall risk as judged against single managers. On the other hand, there are studies which favor the extremist risk taking behavior as a result of group decisions.(Myers and Lamm, (1976) Kogan and Wallch, (1965) Kahneman and Tversky, (1979)). Even though management teams of fund families take riskier decisions but Bone et al. (1999), Blinder and Morgan (2001), Rockenbach and Matauschek (2001), Cooper and Kagel (2004) have proven in their studies that these teams perform rational and better through team deliberation (Shaw 1932; Sharpe 1981), and access to wider knowledge resources and capabilities (Pelled et. al. 1999).

According to the findings of the research conducted by Sundar and V(1998), brand image of a fund family and returns of a fund are the principal influential factors while investing in mutual funds. On the same lines, Chakarabarti and Rungta (2000) gave due emphasis to the relevance of brand image of a fund family in determining its competitive position. Their study revealed that though brand image is not a quantifiable performance measure but it influences investor's perception. According to the study conducted by Gupta (1988), in most cases brand image of a product or fund family implicitly helps the investor to know its product or return features and ultimately their selection criteria.

Verbatim sense of the term 'Performance Persistence' is the unvarying returns or performance of a product or security and the extent to which past performances of the security plays a part in predictingits future performance.Sharpe (1966) study supported the performance persistence concept in mutual funds. Similar study was done by Carhart(1997), Chen et.al (2000) and Rao (2001) with an additional perspective of time duration, emphasizing on the short term period performance persistence. Additionally, researchers like Elton et.al (1996), and Drooms and Walker (2001) extended this time period up to three years but not beyond that. But studies like those of Jan and Hung (2004) emphasized that performance persistence should not be time bound. If it exists in short run, it should also exist in the long run. Research done by Grinblatt and Titman (1993) supported performance persistence and inveterate the existence of positive as well as negative persistence. Whereas Carhart (1997) found the evidences of only negative persistence in mutual funds for long term. On an exactly dissimilar note, studies of James and Douglas (1998) and Jan and Hung (2003) revealed that there is no relationship among funds' past and future performances.

Characteristics of a mutual fund scheme have a considerable impact on mutual fund investment decisions. There is a need for the mutual fund companies in India to have deeper indulgence and awareness of the various characteristic driving forces and should be given due importance at the phase of designing and development of schemes of investment in mutual funds. (Sindhu and Kumar, 2013)

CONCLUSION

Wrapping up this section, it can be concluded that there are abundant variables which shape the performance of mutual fund family. Considering the constraint of time proximity for this present study, Table 1 illustrates the major factors affecting the performance of mutual fund family, which have come out as the result of extensive literature review and can be taken into account for data analysis, for framing model for performance evaluation of mutual fund family. Factors like fund family size, management structure of the fund, fund family scheme characteristics etc. have been included.These 12 factors have been treated as predictors of effect on the performance of mutual fund family.

Table 1. Determinants of mutual fund family performance

1.	*Fund Family Size*
2.	*Management Structure of Fund*
3.	*Fund Family Scheme Characteristics.*
4.	*Brand value of a fund family name*
5.	*Outsourcing of portfolio management services*
6.	*Risk Strategies*
7.	*Fund Advisors tenure & qualifications*
8.	*Spillover effects*
9.	*Fund Proliferation*
10.	*Past Performance*
11.	*Performance Persistence*
12.	*Fund manager turnover*

DATA SET

Primary Data and Sample Size

Primary data has been collected from fund managers, assistant fund managers and mutual fund brokers of various fund houseslocated in Delhi/ NCR region and handling various mutual fund schemes. The Indian Mutual Fund Industry has 28 Fund Houses. In the present research the population size can not be very large, therefore efforts were made to get the data from the Universe.References on approval of suitable sample size for factor analysis differconsiderably (Fabrigar et.al., 1999). Some have recommended a minimum of sample size of 300, but in realism, in case of circumstances with small number of variables a sample size of even 100 is adequate. A sample of 100 mutual fund professional along with 100 mutual fund investors have been taken for data analysis.

Data Collection Method

The primary data was collected by a personally administered questionnaire to the fund managers, assistant fund managersand mutual fund brokers.The reason for selecting this data collection tool was to ensure that the correct information is collected from the respondents and if there are any doubts the same can be sorted out on the spot. Also it saves time and the response rate is too high. The questionnaire was only in English Language. The survey instrument comprised of three sections. The first section included a respondent instruction sheet, which gave a brief to all the respondents about the purpose of the study and what is expected from them through this survey. The second section had various statements regarding determinants of fund family performance based on the variables identified with the help of literature review. This section used afive-point Likert scale: 1 = not at all important; 5 = extremely important. The third and the final section collected an elaborated demographic data of the respondents. Data collection took 4 months time- ending June 25, 2016.

Research Tools

Descriptive (Frequency, Cross Tab) along with Principal component analysis has been used as it allows the researcher to determine the nature and number of latent variables underlying a set of items.

DATA ANALYSIS

While performing data analysis foremost attention needs to be given to **Correlation Matrix** to make certain that correlation coefficients are greater than .3 in magnitude. If correlation matrix table does not show major correlations greater than .3, it signifies that factor analysis is not an appropriate data analysis tool in the concerned case. But, in this study, major correlations are greater than .3 which tentatively suggests that factor analysis is an appropriate tool here.

Second most important check needs to be done about the adequacy of sample size. For this, Kaiser –Meyer-Olkin Measure of Sampling Adequacy (KMO) has been calculated and it shows the value of .757, which is quite higher than minimum acceptable value.6. Along with this Barlett's test of Sphericity has also been calculated. This test compares the observed correlation matrix to the identity matrix and its minimum acceptable value (p value) is less than.5. Our data shows test is significant (p=.000) (Insert Table 2)

As in finance, pre defined scales are not very common and are not easily available. So, a scale hasbeen framed on the basis of references from literature review. But, using a new scale needs reliability assurances for correct data analysis. Reliability refers to how free the scale is from random errors and is frequently measured using a statistic known as Cronbach's Alpha. Cronbach's alpha is a measure of internal consistency which means the degree to which items in scale measure the same underlying attribute. This test should range between 0 and 1 with higher values indicating higher levels of reliability. Nunnally (1978) advocates a minimum of .7. Nevertheless, alpha values increase with scale length so checking for unidimensionality via exploratory factor analysis is the basic here. In tablevalue of Cronbach's alpha is .843, which is well above Nunnally's threshold.

Table 2. Sample Adequacy and Reliability Statistics

Measure For Sample Adequacy	**Value**
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	*.757*
Bartlett's Test of Sphericity	*555.940*
Approx. Chi Square	*66*
Df	*.000*
Significance	
Reliability Statistics	**Value**
Cronbach's Alpha	*.843*
Cronbach's Alpha Based on Standardized Items	*.846*
N of Items	*12*

Next assessment relates to the number of factors to be extracted. The number of dimensions selected can be based on a variety of criteria and it is widely recommended a variety of approaches should be taken into account while making decision. (Fabrigar et. al., 1999). In this study, two decision criteria have been considered. The first and most accepted method for deciding on the retention of factors is Kaiser's Eigen value greater than 1 criterion (Fabrigar et al., 1999). This rule specifies all factors greater than one should be kept for interpretation. Along with this, Cumulative Variance Analysis with a threshold of minimum 60% as approved for social sciences, has been considered for decision making. (Hair et al, 2006). Considering both these thresholds 4 factors have been extracted as for these variables Eigen values are more than 1 and cumulative variance value is 72.762%. Next stage relates to the interpretation of factors. These variables with higher loadings are used to identify the nature of the underlying latent variable represented by each factor. Total factors have been clubbed into 4 factors and variables included in these factors have been shown in the table.

Along with this demographic profile of investors also reveals some interesting facts and figures about Indian investor's investment preferences and frame of mind.

Table 3. Results of Exploratory Factor Analysis

Factors	FL	EV	VE
F1- Fund Family Returns		*4.797*	*25.391*
• *Good performance of a fund enhances cash inflow to other funds in the family as well.*	*.740*		
• *Most of the schemes of mutual funds available in the market have almost same features.*	*.730*		
• *Spillover effects have a positive effect on fund family's' market share.*	*.695*		
• *Large families display more persistence in returns as compared to small family sizes.*	*.675*		
• *Popular fund family names attract higher cash inflows in mutual funds*	*.673*		
• *High fund manager turnover is an important reason for the absence of performance persistence by fund families.*	*.559*		
F2- Market Coverage		*1.629*	*18.897*
• *Fund Proliferation increases market coverage by fund families.*	*.892*		
• *Returns on a fund results from the propensity of fund families to focus on level of risk.*	*.809*		
F3- Economies		*1.289*	*17.824*
• *Replacement of fund managers does not necessarily results in lack of performance by fund families.*	*.793*		
• *Fund family size determines the pattern of returns a fund will provide.*	*.775*		
• *Firms opting for outsourcing portfolio management function are making mutual funds economical.*	*.770*		
F4- Management Structure		*1.017*	*10.650*
• *Management structure of a fund positively affects the performance of a mutual fund.*	*.887*		

Source: Author's Own Calculation

Notes: FL-Factor Loadings, EV-Eigen Value, VE-Variance Explained

Table 4. Summary of Demographic Profile of respondents

Respondent's Profile	Frequency	Percentage
Respondent's Age		
Less Than 30 years	*22*	*22*
30-40 years	*48*	*48*
41-50 years	*26*	*26*
51-60 years	*4*	*4*
Above 60 years	*0*	*0*
Respondent's Gender		
Male	*69*	*69*
Female	*31*	*31*
Respondent's Educational Qualification		
Under Graduate	*2*	*2*
Graduate	*26*	*26*
Post Graduate	*55*	*55*
Professional	*17*	*17*
Preferred Mode of Investment		
Family/ Friends	*9*	*9*
Financial Advisor/ Agent	*52*	*52*
Self	*39*	*39*
Prime Objective of Investment		
For Better Returns	*49*	*49*
For Children's Future	*11*	*11*
For Retirement	*16*	*16*
For Tax Saving	*23*	*23*
To Meet Emergencies/ Contingencies	*1*	*1*

Tables 4 shows that out of 100 respondents, the predominant age group of sample investors comes 30-40 years with 48% and followed by 40-50 years age category with 26%.Out of the available sample mutual fund investor's highest qualification is post graduate with 55% followed by graduates with 26%. Sample investor group is chiefly dominated by males with 69%. Mode of investment most favored by the sample investors is through financial advisors or agents with 52% and second most favored mode of investment is self with 39%.Prime objective of investing in mutual funds of majority investors is for better returns with 49% , chased by tax saving by 23%.

To summarize the relationship between two categorical variables cross tabulation has been used. On analyzing the association or impact of sample investor's age on his prime objective of investing, it has been reckoned that although age affects the risk appetite of investor but it has also been observed that investors between the age categories of 30-50 years invest primarily for better returns and the remaining two categories i.e. age group between 51-60 years and less than 30 years want to invest for tax evasion. These findings can be interpreted in the manner that in early earning age and around the age of retirement investor's look for tax benefits and in the middle earning age, they want to accumulate more and more funds by investing in funds offering higher returns.On the basis of Chi-Square test a strong association has been observed as the p-value is .000 and Pearson Chi Square test statistic of 100 observed frequencies is 40.212

Table 5. Effect of "Respondent's Age" on "Prime Objective of Investing"

Age Group	FBR	FCF	FR	FTS	TME/C	Total
Less than 30 years	6	4	2	9	1	22
30-40 years	26	1	11	10	0	48
41-50 years	17	6	3	0	0	26
51-60 years	0	0	0	4	0	4
Above 60 years	0	0	0	0	0	0
Total	49	11	16	23	1	100
Pearson Chi Square-40.212		df-12		P value-.000		

Note: FBR-For Better Returns, FCF-For Children's Future, FR-For Retirement, FTS-For Tax Saving, TME/C-To Meet Emergencies/ Contingencies

Similar analysis has been done on sample investor's age and mode of investment and it has been determined that in the age group of 30-50 years, most of the investor's prefer to do investing with the help of financial advisors or agents. Table 6 displays the results.This could be a result of trust of investors in competent fund managers and their improving reputation among investors. Whereas, Investors in the age group of 51-60 and less than 30 years prefer to do self investing. On the basis of Chi-Square test a strong association has been observed as the p-value is .000 and Pearson Chi Square test statistic of 100 observed frequencies is 63.248.

Table 6. Effect of "Respondent's Age" on "Selection of Mode of Investment"

Age Group	F/F	FA/A	S	Total
Less than 30 years	2	5	15	22
30-40 years	3	28	17	48
41-50 years	4	16	6	26
51-60 years	0	1	3	4
Above 60 years	0	0	0	0
Total	9	50	41	100
Pearson Chi Square-63.248		df-6		P value-.000

Note: F/F- Family and Friends, FA/A- Financial Advisor/ Agent, S-Self

While analyzing the association among sample investor's educational qualification and prime objective of their investing and preferred mode of investment, findings revealed that all undergraduate and majority of both graduates and post graduate investors main purpose of investing is to get higher returns whereas investors with professional qualification have an equal inclination towards better returns as well as investment options giving tax benefits.A strong association has been observed on the basis of Chi-Square test as the p-value is .000 and Pearson Chi Square test statistic of 100 observed frequencies is 49.57. Table 7 displays the results.

Table 7. Effect of "Respondent's Educational Qualification" on "Prime Objective of Investing"

Educational Qualification	FBR	FCF	FR	FTS	TME/C	Total
Under Graduate	2	0	0	0	0	2
Graduate	14	1	5	5	1	26
Post Graduate	26	7	11	11	0	55
Professional	7	3	0	7	0	17
Total	49	11	16	23	1	100
Pearson Chi Square-49.57		df-6		P value-.000		

Note: FBR-For Better Returns, FCF-For Children's Future, FR-For Retirement, FTS-For Tax Saving, TME/C-To Meet Emergencies/ Contingencies.

Outcomes of investor's educational qualification and preferred mode of investment shows that irrespective of literacy levels majority of investors prefer financial agents and advisors mode of investing due to their expertise, time saving etc. Same Chi-Square results have been observed.Table 8 displays the results.

Table 8. Effect of "Respondent's Educational Qualification" on "Selection of Mode of Investment"

Educational Qualification	F/F	FA/A	S	Total
Under Graduate	0	1	1	2
Graduate	4	15	7	26
Post Graduate	4	26	25	55
Professional	1	6	10	17
Total	9	48	43	100
Pearson Chi Square-49.57		df-6		P value-.000

Note: F/F- Family and Friends, FA/A- Financial Advisor/ Agent, S-Self.

Whether prime objective of investor's investment and their preferred mode of investment are somehow affected by the gender of investor has also been found out. Results display that prime objective of female investors is tax benefits while male investors main objective is to get higher returns. These results are in sync with various previous studies which show that females are risk averse and male investors prefer higher returns in spite of high risk. A strong association has been observed on the basis of Chi-Square test as the p-value is .000 and Pearson Chi Square test statistic of 100 observed frequencies is 32.849. Table 9 displays the results.

Table 9. Effect of "Respondent's Gender" on "Prime Objective of Investing"

Gender	FBR	FCF	FR	FTS	TME/C	Total
Male	41	4	10	13	1	69
Female	8	7	6	10	0	31
Total	49	11	16	23	1	100
Pearson Chi Square- 32.849	*df-4*		*P value-.000*			

Note: FBR-For Better Returns, FCF-For Children's Future, FR-For Retirement, FTS-For Tax Saving, TME/C-To Meet Emergencies/ Contingencies.

Another finding regarding gender of investors shows that irrespective of the gender most preferred mode of investment is through financial advisors and agents and strong association has also been shown by Chi-Square test as p-value is .000 and Pearson Chi Square test statistic of 100 observed frequencies is 26.218. Table 10 displays results.

Table 10. Effect of "Respondent's Gender" on "Selection of Mode of Investment"

Gender	F/F	FA/A	S	Total
Male	1	37	31	69
Female	8	16	7	31
Total	9	53	38	100
Pearson Chi Square- 26.218	*df-2*		*P value-.000*	

Note: F/F- Family and Friends, FA/A- Financial Advisor/ Agent, S-Self

FINDINGS

The findings of this study make important contributions to the academic literature in terms of implications for investors and for fund management companies. 12 mutual fund family performance items were subjected to principal axis factoring to assess the dimensionality of the data. The Kaiser-Meyer-Olkin was .757 which is above the recommended threshold of .6(Kaiser, 1974) and Barlett's Test of Sphericity reached statistical significance indicating the correlations were sufficiently large for exploratory factor analysis. Four factors were extracted explaining 72.762% of the variance. This was decided based on Eigen values and cumulative variance. Factors were rotated using Varimax rotation. Items that load on the first dimension suggests it represents Fund Family Returns, second dimension suggests it represents Market Coverage, third dimension proposes Economies and last dimension represents Management Structure of the fund family. Finally, our findings have significance for the question posed by Coase (1937) regarding the determinants of the frontiers of the firm.Along with these, it has also been found that several demographic variables like age of the investor, his educational qualification and gender have a considerable impact on their preference of mode of investing and prime objective of investing. Following factors have been found out as the predictors of fund family performance.Table 11 displays the results.

Table 11. Table showing Fund Family Factors affecting Mutual Fund Performance

Fund Family Returns	Market Coverage	Economies	Management Structure
Spillover Effects	*Fund Proliferation*	*Frequent replacement of Fund managers.*	*Management Structure*
Fund Family Scheme Features	*Risk Propensity*	*Pattern of returns*	
Fund Family Size		*Outsourcing*	
Fund Family Brand Name			
Fund Manager Turnover Ratio			

A proposed model comprising of all these variables have been presented in figure 1. A pragmatic prophecy of the model is that lately created fund families should endow investments with such trading strategies which are very different from the existing funds. Along with this, investors should also be able to reap benefits of firm's research with the creation of latest funds.

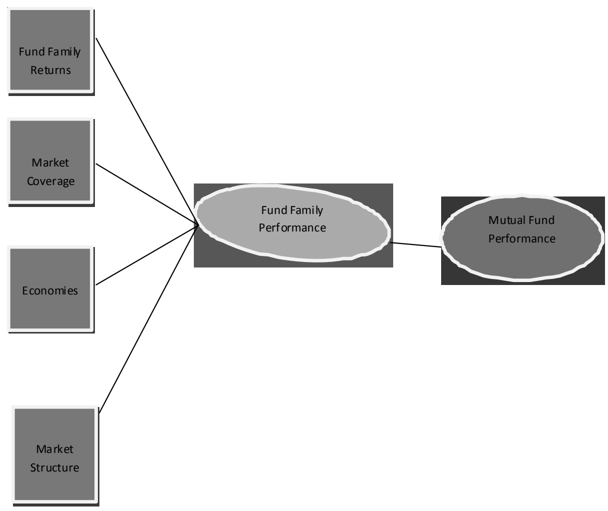

Fig 1: Proposed Mutual Fund Family Performance Determinants Mode

CONCLUSION

Purely based on statistical significance, the more elaborated multifactor conditional models are clearly superior to the unconditional models. Overall, conditional models add strong economic relevance because of the ability to detect patterns in fund betas. (Otten and Bams, 2004). Findings of this research play an important role in the form of contributions to the academic literature in terms of inferences for investors and for fund management companies. From an investor's perspective, it is crucial for them to know whether to choose an Indian fund family for investment or an off shore fund. Along with this which attributes of chosen category of fund family should be considered while making the ultimate investment decision. Top three issues for the mutual fund sector in the present scenario comprises of considering the changing demographic trends and its impact on growth. Regulatory issues are a constant state in the industry and finally mutual fund families have been observed to follow innovative channel strategy in their quest to grow. But flows are so concentrated to a hand full of players it's becoming more difficult for others to grow at the rates they are expecting. New approaches in everything from product strategy to service models and distribution channels will likely be required. Additionally, repositioning as financial advisors, efficient online investment management, selling high margin products to new acquired clients ia advisable to expand the base. Demographic variables play a pivotal role in shaping the future of a mutual fund in the market. So, while launching a mutual fund due care should be taken about all the affecting demographiv variables like age of the investor, gender, his educational qualification. Future scope of this research could be multifaceted like this research could be carried on with a large sample size considering several cities of India. In technical terms, the research methodology followed in this paper could be taken to advanced level by applying Confirmatory Factor Analysis and Structured Equation Modeling followed by Regression.

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Impact of Gender Diversity on Corporate Reputation of Indian Companies

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ABSTRACT

Attaining and maintaining a good name in the market is imperative to survive competition. Literature documents gender diversity as an antecedent of corporate reputation. The study attempts to examine the influence of women directors on reputation of Indian companies. Data related to Indian companies constituting BSE 100 index is analysed at two different points of time i.e. 2002-2003 and 2011-2012 to examine the pattern of female directors on Indian corporate boards. The findings reveal a remarkable increase in the number of women directors from 2002-2003 to 2011-2012. Presence of women on board cast a positive but insignificant impact on corporate reputation. The implication for Indian managers is to adhere to the provisions of new companies' act, 2013 promptly to build better reputation among global audience.

INTRODUCTION

Resources are crucial for organisations. Stiff competition and global involvement has highlighted the significance of tacit resources that provide competitive advantage over rivals (Barney, 2000). Although being aloof from company's books, they carry impeccable importance in building up organisational effectiveness and competitiveness. Corporate reputation has been identified as one such covert resource that brings advantage to firms in terms of greater employee satisfaction, greater customer satisfaction, lower negotiating and transactional cost (Rogerson, 1983; Schwaiger, 2004; Eberl and Schwaiger, 2005; Podolny, 1993) that ultimately improves financial performance (Barney, 2000).

Gender diversity can also be viewed as an important resource (Brammer et al., 2009). Literature offers extensive research probing the issues involved in managing diversity within organisations (Dass and Parker, 1999; Mollica and DeWitt, 1994) and its impact on firm performance (Filatotchev and Toms, 2003). Board diversity is of prime importance as the board composition determines the quality of decisions which affect its profitability. Gender diversity on boards acts as a signal of social responsiveness, which is viewed favourably by corporate audience (Brammer et al., 2009).

Recent years have witnessed a global move in favour of incorporation of women directors on board. While legislative moves mandating women directors on boards have been initiated in nations like Norway, Sweden and Malaysia, women in countries like India are still struggling to break their barriers. Low number of women on Indian boards clearly depicts the plight of females and the extent of social barriers they face. At this juncture, Indian legislators have made a remarkable move in mandating women directors on the board of every listed company, through enactment of new companies act, 2013. It is momentous to examine the pattern of female recruitment on Indian corporate boards just prior to the advent of new companies' act, 2013, to notice

Key words

Mutual funds, Fund Family, Performance, Outsourcing, brand value, economies, management structure.

willingness of male dominated boards to permit entry to females in the boardroom without any enforcement for it.

Literature documents that social initiative like recruitment of women and minorities builds a favourable impression on stakeholders. Presence of female directors not only ensures board independence (Brammer et al., 2009) but also act as a clue of good governance which is a crucial driver of reputation (Donaldson and Preston, 1995; Luoma and Goodstein, 1999; Ljubojevic and Ljubojevic, 2008). The link between gender diversity and corporate reputation has been well explored in developed nations but lacks evidence in context of emerging economies like India. The study attempts to analyse the impact of presence of female directors on corporate reputation in India.

Measurement of soft asset like corporate reputation impedes research in it. Reputation being perceptual is difficult to quantify (Fombrun, 1996). It seems unfit to capture it qualitatively. The study measures reputation on the basis of number of awards/certifications received for CSR activities (Kansal et al., 2014). 'Much like Hollywood "oscar" which are designed to attract public attention to specific movies, so CSR awards draw media attention to winning companies and create intangible benefits from CSR activities,' Gardberg and Fombrun, (2006). Receiving awards for CSR increases corporate reputation. Rao (1994) found that high visibility proceedings such as winning product quality certification, improves company's reputation, hence directly linking awards for CSR activities to corporate reputation. The study delineates the impact of women directors on corporate reputation using awards received for CSR activities as a proxy.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Reputation building process is an intricate one. Stakeholders interpret myriad signals to form opinion about firms. Along with the firm and market related attributes like CSR, firm size, profitability, market risk, firm age, financial leverage that influence the reputation formation process, governance attributes like non executive directors, board size, ownership pattern have also been widely acclaimed as crucial drivers of corporate reputation (Fombrun and Shanley, 1990; Brammer and Millington, 2005; Brammer and Pavelin, 2006; Brammer et al., 2009). However the strand of literature examining the role of gender diversity in framing perceptions about firms is growing.

Diversity within boards brings pool of knowledge, skills and enhances creativity, thereby enabling better decision making by the orgainsation (Selby, 2000; Ramirez, 2003). Agency theory emphasizes the value of good governance (Fama and Jensen, 1983) which can improve firm reputation (Ljubojevic and Ljubojevic, 2008). Despite the acknowledgement of some challenges in managing diverse boards (Erhardt et al., 2003), there is general agreement that board diversity breaks groupthink and foster board independence which builds favourable impression among corporate audience (Brammer et al., 2009).

Gender diversity is of particular interest as females on board seats act as counsellors for other female employees in the organisation (Catalyst, 1995). Moreover companies allowing entry of females in the boardroom depicts company's non-prejudice behaviour which is welcomed by stakeholders. The strand of literature empirically examining the influence of female directors in framing perceptions has yielded mixed results. While Pfeffer and Salancik (1978)

Smith et al., (2006); Bernadi et al., (2009); Bernadi et al., (2006); Brammer et al., (2009); Fernandez-Feijoo et al., (2012) establish a positive link between gender diversity and corporate reputation; on the flip side Lee and James (2007) and Gregory et al., (2009) do not favour gender diversity on boards. Adding to the scant but growing research unveiling the liaison between gender diversity and corporate reputation in emerging markets like India, the current study attempts to provide some conclusive evidence to it.

Women directors bring resources to the firm which would otherwise be a missed opportunity (Brammer et al., 2009). It is argued that gender diversity acts as a crucial resource capable of providing competitiveness and improve organisational effectiveness (Burke, 1997). Signaling theory also posit that women led boards signal social responsiveness and non discriminating culture adopted by firms which gives a clue to the unapprised stakeholders about the quality of the firm. Thus literature offers theoretical justification for gender diversity to build favourable perceptions among corporate audience, thereby giving way to formulation of following hypothesis:

H_1: there is a positive impact of gender diversity on corporate reputation.

RESEARCH METHODOLOGY

The sample of the study comprises of Indian companies that constitute BSE100 index. The sources of data include annual reports of Indian companies and ACE Equity database. Due to unavailability of data, the final sample for the study got reduced to 90 companies. The technique of multiple regression is applied to examine the impact of presence of women directors on reputation of Indian companies. Variables under study are categorized into three sub-headings:

Dependent Variable: Corporate reputation is taken as dependent variable, which is measured through number of awards/certifications received for CSR initiatives undertaken by Indian companies. Content analysis of annual reports for each company resulted in reputational score ranging from 0-11, where 0 denotes no award received by the company and 11 denotes that the company has been recognised for all 11 CSR categories. The information related to awards received by a body corporate is gathered from 'Awards and Recognitions' section in the annual report or sometimes awards are mentioned in the 'director's report' or 'management discussion and analysis' section or it appears in 'highlights' section.

Independent Variables: The impact of female directors on corporate reputation is examined by introducing dummy variable which takes the value 1 if at least one female director is present on the board and 0 otherwise.

Control Variables: Some control variables have been introduced in the regression model so that the impact of independent variable is clearly noticed. Past studies suggest inclusion of financial performance, firm size, ownership pattern, firm leverage, market risk (Fombrun and Shanley, 1990; Brammer et al., 2009; Hall and Lee, 2014). Table 1 lists the variables used in the current study.

EMPIRICAL RESULTS

An effort has been made to examine the trend of female appointment on corporate boards in India. For this the actual number of women directors is scrutinised at two points in ten year time frame i.e. 2002-2003 and 2011-2012. Data related to the period just prior to the advent of companies act, 2013, reveals that the exposure given to female employees in companies has improved. It implies that Indian corporate managers are following the global move of gender egalitarianism. Table 2 clearly reveals a significant increase in the number of companies promoting gender diversity on boards. Number of companies that were male led in 2003 had reduced significantly from 65 (in 2003) to 43 (in 2012). There are 22 companies which have allowed female inclusion on their boards over ten year period giving away gender based stereotypes. However the present state of women directors can still be regarded as tokens as they fail to constitute a critical mass (as defined by Torchio et al., 2011), as no Indian company forming BSE100 index recruits three or more females on their board.

The study also tries to analyse the impact of presence of women in the boardroom on its reputation. A preliminary analysis is undertaken through independent sample t-test as shown in table 3. In 2002-2003, the reputation of male dominated companies is more, whereas in 2011-2012, companies employing women directors on their board portrayed better reputation. The main aim of this study is to explore the relevance of female presence on board in aggrandizing reputation of Indian companies. For this multivariate regression analysis is undertaken, the results of which are depicted in table 4. Model 1 analyses the impact of presence of female directors on corporate reputation in 2002-2003. Large firms are more visible, have greater access to resources and thus are expected to be viewed propitiously. In line with this argument, firm size casts a significant positive impact on reputation (p-value $0.00 < 0.01$). Good performance predisposes stakeholders to view firm's favourably (p-value $0.00 < 0.01$). Presence of females on board cast a negative but insignificant influence on corporate reputation. The reason for such obscure finding could be attributed to the very low number of female directors on board seats in India in 2002-2003. The model captures 12 percent variation in corporate reputation.

Model 2 captures the impact of presence of female directors on corporate reputation in 2011-2012. Firm size cast a significant positive influence on corporate reputation (p-value $0.00 < 0.01$). A high level of debt raised by firm imbues financial burden on them and is perceived negatively by corporate audience (p-value $0.00 < 0.01$). Presence of female directors in boardroom cast a positive but insignificant impact on corporate reputation. Hence it can be inferred that ten years back in 2002-2003 appointment of female directors on top management positions was not viewed favourably, but the trend seems to be changing and efforts made by companies to appoint women and minorities signals social responsiveness, which is perceived propitiously by stakeholders.

Table 1 Description of variables used

S. No.	Variable name	Measurement and symbol used in the study	Description
1.	*Financial performance*	*ROA*	*Return on assets = Net profits after tax / assets (extracted from ACE Equity).*
2.	*Corporate reputation*	*Corporate reputation*	*Awards received for CSR initiatives as proxy for corporate reputation.*
3.	*Financial leverage*	*Debt Equity Ratio (DER)*	*Debt / equity (extracted from ACE Equity).*
4.	*Firm Size*	*Total Assets (FS)*	*Total assets (extracted from ACE Equity).*
5.	*Ownership Pattern*	*Institutional Shareholding (ISH)*	*ISH= per cent of share holding in institutional hands (extracted from ACE Equity).*
6.	*Market Risk*	*Beta*	*Beta (extracted from ACE Equity).*
7.	*Female dummy*	*FD (1,0)*	*1 if at least one female director is present on the board and 0 otherwise (extracted from annual reports).*

Source: author's own compilation

Table 2 Number of women across Indian Corporate Board

Number of females	Number of Companies 2003	Number of Companies 2012	Percentage Change
0	65	43	(28)
1	20	32	60
2	5	15	200

Source: author's own calculations

Table 3 Reputation analysis based on gender

Variables	Female	Male	t-value (p-value)
Corporate reputation 2003	*3.84*	*3.98*	*-0.25 (0.79)*
Corporate reputation 2012	*7.23*	*6.16*	*1.58 (0.11)*

Source: author's own calculations

Table 4: Multivariate regression analysis taking corporate reputation as dependent variable

	Model 1		Model 2	
Variables	**Coefficient**	**t-value**	**Coefficient**	**t-value**
Constant	*-2.51*	*-1.35*	*-3.61*	*-1.39*
Log firm size	*0.72*	3.55^{***}	*1.12*	4.58^{***}
Financial leverage	*-0.07*	*-0.81*	*-0.56*	-2.59^{***}
Financial performance	*0.095*	2.29^{**}	*0.05*	*1.05*
Market risk	*0.24*	*0.40*	*-0.85*	*-0.99*
Ownership pattern	*-0.01*	*-0.59*	*-0.008*	*-0.39*
female dummy	*-0.49*	*-0.72*	*0.42*	*0.66*
Adjusted R^2	*0.1243*		*0.1989*	

Source: author's own calculations

CONCLUSION

The purpose of current research is to explore the relevance of women directors on the board in building favourable perception among stakeholders. The pattern of recruitment of women directors on corporate board clearly exhibits a move towards gender egalitarianism. Data reveals that the companies which are solely male dominated have recently realised the ingenuity of gender diversity and hence permit access to women in the boardroom. Gradually Indian companies are trodding the global move towards gender equality. The impact of presence of female directors on corporate reputation is insignificant attributed to the low number of women on the board seats. According to Joecks et al., (2013), women must constitute a critical mass to make their presence known. However with the implementation of provisions of new companies act, 2013, every listed Indian company would have to appoint women on the board, which will increase women participation in decision making process. It is expected that presence of female directors would have a significant influence on corporate reputation in India as is discerned in developed nations (Brammer et al., 2009).

The study suffers from certain limitations. First, sample size of the study is small as it analyzes the companies constituting BSE100 index only. A large sample might provide better results. Second, the study examined the relevance of women directors just prior to the enactment of companies' act, 2013. Future research may analyse data covering post enactment period. Third, different measure of corporate reputation may provide different results.

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Note:- 40% of the delegate fee will be reimbursed to those research scholars who will produce proof issued by the competent authority of the concern University/College/Institution (on the spot) that they are not receiving Scholarship/ Fellowship from any agency.		
Accompanying Person Fee (Only Spouse)	Rs. 2000	Rs. 2500

*No Conference kit will be provided to the accompanying person.

Note: As per the decision made in the EC meeting of ICA which was held on 12 July, 2015, all life members are requested to contribute Rs.1000 in addition to the delegate fee for the construction of ICA building. Those life members who have already paid the said amount need not pay again.

ON-THE-SPOT REGISTRATION IS NOT ALLOWED
Accommodation will be provided only to those outstation delegates who are Life Members of the ICA.

Website of 70th ICA Conference (for reference)
Web: www.70aicc2017.iisuniv.ac.in

Website will be launched after 15th March, 2017

Statement about ownership and other Particulars of the Journal-
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I, H.K. Singh, hereby declare that the particulars given are true to the best of my knowledge and belief.

(Sd/-)
Prof. H.K. Singh
(Signature of the Publisher)

INDIAN COMMERCE ASSOCIATION

Prof. Manubhai M. Shah Memorial Award for Excellence in Commerce & Business Management

Last Application Date : 30th June 2017

Indian Commerce Association (ICA), the premier professional association of India, is pleased to announce *Prof.Manubhai M. Shah Memorial Award for Excellence in Commerce & Business Management (MMSMA).* The Award shall comprise a cash prize of Rs.2,00,000/- (Rupees two lacs) [together with a certificate and trophy] for outstanding research, fundamental or applied, of creative nature in the field of Commerce & Business Management.

Through the general body meeting of ICA held at Pondicherry at the time of 64th All India Commerce Conference, it has been resolved that award shall be instituted for an amount of Rs. 2,00,000 (Rs. Two lacs) to be awarded each year with effect from year 2012.

All heads of institutes and departments of commerce and management are requested to forward the names of eligible candidates along with their publications for consideration of the case by the review and screening committee. ICA looks forward to wide participation and entries to make this award truly distinct and unique for perpetuating the high standards of academic and professional benchmarks in the field of Business and management education which was so dear to the heart of Late Professor Manubhai M. Shah in whose memory this award has been instituted.

Brief on Indian Commerce Association

Indian Commerce Association, is one of the premier professional association of India, a congregation of commerce, management and economics professionals. The association was set up way back in 1947 and has evolved as a committed body making significant contributions in the field and overall economic set up. Having an enviable professional might the association has to its credit many celebrated achievements and notable contributions which have made a mark on the landscape of commerce education and profession. Continuing its societal and academic enrichment spree, ICA has initiated the process of institution of an award in the memory of one of its past luminary Late Professor Manubhai M. Shah on the pattern of S.S.Bhatnagar Award so as to recognize the contribution of Prof. M. M. Shah.

Prof. Manubhai M. Shah
M. Com. (Bombay)
M. Sc. (Econ. & Bus. Admn.) (L.S.E., London)
Diploma of Distinction (Cambridge)
(Feb. 28, 1926 – Dec. 14, 2003)

Important Information

1. A candidate once nominated would be considered for a total period of three (3) years, if age-wise eligible.

2. The Award of the cash prize may be withheld by ICA in any year, if, in the opinion of the Jury, no sufficiently meritorious candidate(s) is/are found suitable in that year.

3. In the event, when the Jury selects more than one person or Team(s) to receive the Award, the cash prize will be shared equally by each member of the joint team recommended for the Award.

4. The Recipient(s) will be responsible for all individual expenses including applicable taxes, if any.

5. The Award shall be presented at the time of the Annual Conference of the ICA.

6. In all matters of Award of "Prof. Manubhai M. Shah Memorial Award", the decision of the ICA shall be final.

Judging Module

The award shall be adjudged by a six member jury comprising of people of eminence and distinction being accomplished educationists, industrial stalwarts, professionals and bureaucrats to make an unbiased and comprehensive judgment of the eligible candidate

Procedure of Participation

1. Nomination / Application has to be filled online at website www.mmsma.coffeecup.com/forms/MMSMA/

2. Names of candidates may be proposed by (1).Vice Chancellors of Indian Universities (2).Directors of Private Institutions / Universities (3).Chairpersons of Institutions of National importance and (4).Directors of the Indian Institutes of Management (IIM).

3. University Faculties should forward the name(s) of persons for the award working in their faculty/institutions only and route nominations through their respective Vice Chancellors, while the Faculties in IIMs are required to send their nominations through their Directors.

5. Every application / nomination shall be accompanied with a processing fee of Rs.1000/- (Non Refundable) through demand draft drawn in favour of “M M Shah Memorial

Eligibility Criteria

1. Any citizen of India engaged in research in any field of Commerce & Business Management up to the age of Sixty (60) years as reckoned on 31st December of the year preceding the year of the award.

2. Overseas Citizens of India (OCI) &/or Persons of Indian Origin (PIO) working in India (or in collaboration with Indian citizen/s if residing outside India) are also eligible.

3. The person(s), in the opinion of ICA, should have made conspicuously important and outstanding contributions to human knowledge and progress in the discipline & profession of Commerce & Business Management.

4. The contributions made through work done in India during the Ten (10) years preceding the year of the grant of Award shall be considered.

5. The candidate must hold a Doctoral Degree from a recognized University established in India or abroad, considered equivalent thereto, by the Association of Indian Universities.

6. Each published research work of the nominee shall be evaluated in terms of quality of the publication as well as the journal(s) in which they have been published

7. Each published research work(s) would be evaluated in the terms of the following criteria:
   - Originality of idea
   - Research Methodology Rigour
   - Discussion and interpretation
   - Linguistic presentation
   - Socio/Economic positive impact

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INDIAN COMMERCE ASSOCIATION

OFFICE BEARERS AND EXECUTIVE COMMITTEE MEMBERS FOR 70th AICC

Regd. No. 4973/60 INDIAN COMMERCE ASSOCIATION Cost is less than ₹ 56/-

TOPICS FOR 70th ALL INDIA COMMERCE CONFERENCE

12-14 October 2017

Web : www.70aicc2017.iisuniv.ac.in

	Chairpersons	Co-Chairpersons
Seminar		
Remonitisation : Politics vis-à-vis Economics	**Prof. Debabrata Mitra** Dept. of Commerce University of North Bengal Raja Rammohunpur Darjeeling (West Bengal)	**Dr. Anilkumar G Garag** Director Global Business School, Twin City Campus, Bhairidevarakoppa Hubballi(Karnataka)
Sessions		
I **Financial Sector : Regulation vis-à-vis Liberalisation**	**Prof. Bhagaban Das** Head & Dean, P.G. Dept. of Business Management, Fakir Mohan University, Balasar (Odisha)	**Dr. Rajendrakumar V. Raval,** Associate Professor, Commerce, C. C. Sheth College of Commerce, Navgujaray Campus, Ahmedabad-380014 (Gujarat)
II **Cash to Cashless Economy : Challenges and Opportunities**	**Prof. M. Sulochna** (Retd.) Dept. of Commerce Osmania University Hyderabad, (Telangana)	**Prof. Pawan K. Poddar** Dean, Dept. of Commerce T.M.B. University Bhagalpur (Bihar)
III **Employment and Entrepreneurship : Changing Paradigms**	**Prof. V. K. Shrotryia** Dept. of Commerce Delhi School of Economics University of Delhi (Delhi)	**Dr. Krishna Gupta** Associate Professor Dept. of EAFM University of Rajasthan Jaipur (Rajasthan)
IV **GST : Implications for Indian Economy**	**Prof. Jaspal Singh** Head, Dept. of Commerce Guru Nanak Dev University Amritsar (Punjab)	**Dr. Amitava Samanta** Associate Professor Vinoba Bhave University Hazaribag (Jharkhand)

Manubhai M Shah Memorial Research Award Session (MMSMRA): EMPIRICAL RESEARCHES IN THE AREA OF MARKETING

Prof. Prashant Kumar Dept. of Commerce Banaras Hindu University Varanasi (U.P.)	**Prof. Kavaldeep Dixit** Dept. of Marketing International School of Informatics & Management, Mansarovar, Jaipur (Rajsthan)

Prof. Samiuddin Memorial ICA Research Scholar Award Session

Dr. M.S. Subhas Vice Chancellor Vijayanagara Sri Krishnadevaraya University, Bellary (Karnataka)	**Dr. Sanjay Rastogi** Associate Professor Indian Institute of foreignTrade, New Delhi, (Delhi)

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