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INTERNATIONAL JOURNAL | CHANDIGARH UNIVERSITY

VOL.5 Issue 2 July - December 2016

CHANDIGARH UNIVERSITY
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CU-GLOBAL MANAGEMENT REVIEW

A Bi-annual

INTERNATIONAL JOURNAL

ISSN 2349 - 1078

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THE EDITORIAL

Excellence is not being the Best; it is doing your best!

The emerging World is dominated by knowledge economy and talent pool. World is becoming a global village. In this ever shrinking global village the most daunting challenge is to keep oneself abreast with the changes in quality of knowledge and services all around. The sharing and processing of information by various innovative methods has made the transformation of the complete corporate framework possible.

We take this opportunity to present the Volume 5 Issue 2 of our blind peer reviewed multi-disciplinary Journal. Our vision for 'CU Global Management review' is to make it even bigger and better, more contemporary and more approachable. Committed towards achieving the vision, we are pleased to convey that this issue of the Journal, like other issues, has been able to sustain the pride of including Research works from almost all dimensions successfully. The contents of the Journal begin with the research paper on Financial Literacy and Risk tolerance of individual Investors while laying down a significant association between the gender of the respondent and Risk Tolerance by collecting data from 150 respondents in Jalandhar. The second paper talks about the role of National Stock Exchange in Indian Securities Market wherein the researcher has explained how NSE is contributing in the development of stock market of India. The third paper judges the awareness level of traders towards VAT along with the implications of GST policy making in India and is an innovative presentation on a Trader's attitudinal perspective of GST Over VAT in India. Next paper is another excellent piece of writing on Demographic Analysis of Life Insurance demand in India studying the impact of Education, urbanization and population on demand of Life Insurance products. The next research paper explicitly shares the threats of Cyber Scavenging in Financial Sector, the awareness of which is the need of today's digital world where the trend of online transactions has become popular after demonetization and Currency crunch. The sixth research paper is on 'CSR spending of Indian Central Public sector Enterprises' which lays out a marvelous comparison of DPE Guidelines between CSR and section 135 of Companies Act, 2013 for 51 CPSEs. The last paper of this issue talks about Selection of programming language for Software Development using Conjoint Analysis is the next fantastic research work carried out in Punjab's post graduate Colleges and Universities which shows that VB.Net is the most acceptable language for Software development.

I am sure the issue will generate immense interest among corporate practitioner, policy makers, academicians and students.

DO FINANCIAL LITERACY AFFECTS RISK TOLERANCE OF INDIVIDUAL INVESTORS?

- **Jyotishna Jairath,** Assistant Professor, DAV College, Jalandhar, Punjab, India.
- **Saloni Raheja,** Assistant Professor, Department of Commerce and Business Management, DAV University,Jalandhar, Punjab, India.

ABSTRACT

Risk tolerance is the risk bearing capacity of individuals. Every person is different from one another for the degree of their risk tolerance. Risk tolerance is affected by personal attributes like their gender, age, education level, family background & size, income level, occupation, marital status and all. The present study is focused on studying the relationship between demographic attributes of respondents and their risk tolerance. In present study the effect of financial literacy of the respondents on their risk tolerance is studied. A survey was conducted among 150 respondents from Jalandhar city and data was analyzed by applying Chi-Square and Regression Analysis through SPSS. The results approved the both alternative hypotheses. The study observed the association between gender of respondents and their risk tolerance to be statistically significant. The final conclusion of the present study is that financial literacy of the respondents significantly affects their risk tolerance. The study has limitation regarding research area that was restricted to Jalandhar City only.

Keywords : *Financial Education, Financial Literacy, Investment, Risk Tolerance,*

INTRODUCTION

In traditional finance theory, everyone is rational in maximizing wealth but many a times; our rationality is influenced by our emotions & irrational financial decisions. Behavioral finance is an area where behavioral and cognitive psychological theory are combined with conventional economics and finance so that the reasons of irrational financial decisions made by rational people could be find out. It can be described as a study of psychological & sociological factors affecting the financial decision making process of individuals, groups, corporate entities & other financial practitioners. How the investors judge, foresee, break down and audit the systems for choice making, which incorporates venture brain science, data assembling, characterizing and comprehension, exploration and investigation uncovers one's investment behaviour. The investment behaviour of the investors is depicted through the amount of money invested by them out of their total savings, frequency of their investment, financial instruments in which they invest and through their risk attitude.

Money related proficiency is the situated of aptitudes and information that permits a person to settle on educated and compelling choices with the majority of their budgetary assets. The capacity to see how

cash functions on the planet, how somebody figures out how to win on make it, how that individual oversees it, how he/she contribute it and how that individual gives it to help other people is known as financial literacy.

Whenever there are more than one possible alternative to any situation, an individual is exposed to risk. Risk means uncertainty of a return and the potential for financial loss. Financial risk tolerance is the measures the willingness of investors in accepting the variation while taking financial decisions. Risk tolerance is the comfort of investors with the inherent risk in a given type of investment.

LITERATURE REVIEW

Focusing upon the research objective of the study, literature concerning the research variables is reviewed as follows:

Harris et al (2006) examined the gender difference in risk assessment. They collected the data from 657 respondents and analyzed by using regression and t-tests. They found that men and women were different in their assessments of likelihood and negative outcomes. They concluded that women were less engaged in risky activities such as gambling, health and recreation but the gender did not differ in taking social risks.

Ajmi (2008) used the questionnaire to collect the data from 1500 respondents. He recommended the determinants of risk tolerance of individual investors in Bahrain. He observed that women had less risk tolerance than the men. His findings concluded that highly educated investors with sound wealth seek risk more than the less educated one.

Eckel (2008) reviewed the results which were given from experiments of risk aversion behavior of men and women. The data was analyzed by using correlation. He found that the married people were involved in less risk investments than the unmarried and also explained the difference in cumulative wealth of gender. Men preferred to hold more stock, risky investments, efficient investments and more of their wealth in risky assets. He concluded that single women were more risk averse than single men.

Anbar and Eker (2010) studied the rapport between demographic features and risk tolerance. They collected data from 1097 respondents in Uludag University, Turkey and analysed by using ANOVA, t-tests and logistic regression analysis. They inferred that the gender orientation, division, working, individual salary, family wage and aggregate net resources had a critical impact on risk resistance yet age, number of kids and conjugal status had no impact on risk tolerance.

Ahmad et al (2011) investigated how far different demographic factors i.e. gender, age, education, monthly income and marital status affect investors' financial risk tolerance. They collected data from 150 respondents from Rawalpindi/Islamabad through a structured questionnaire and analyzed the data with Multiple Regression analysis and t-test. They found a well-built rapport between various demographic factors and Risk Tolerance Score (RTS). Their results revealed that for significant difference in investors'

risk tolerance, education is the most significant factor. They concluded that married individuals and female investors were more risk reluctant as compare to singles and male investors in financial decision making.

Wong (2011) studied relation between demographic factors and risk tolerance in three countries. The tools used for data analysis were ANOVA and Regression. He found that with the increase in education and income, risk tolerance also increased and married people took less risk. The risk tolerance of Australian respondents was greatest in age and education, varied in marital status of U.S. respondents whereas U.K. respondents showed the volatility in gender and income.

Cavezzali et al (2012) examined how the financial literacy of people impacts their risk taking choices and investment behaviour. They collected data from 208 U. S. individuals through a structured questionnaire and analyzed the same by using Average, Standard Deviation and Regression Model. They found that financial literacy positively affects the risk taking decisions of individuals but less significant in explaining more sophisticated diversification strategies.

Lamba and Raheja (2014) considered the impact of demographic factors on the risk tolerance of investors. They examined the previous studies on risk tolerance and demographic factors individually and collectively and concluded that the various demographic factors like age, gender, education, income, affect the risk tolerance capacity of investors. They observed a positive relation between demographic factors and risk tolerance and males took more risk than females. The unmarried investor took more risk than the married investors. The educated people took more risk than the less educated one.

NEED OF THE STUDY AND RESEARCH OBJECTIVES

The literature available has not focused on the association between gender and risk tolerance or the influence of financial literacy on the risk tolerance of individuals. There are a limited number of papers available that has attempted to study the relationship between demographic attributes and the risk tolerance of individual but the influence of financial literacy on the risk tolerance of individuals has not been studies yet. This gap in literature is the inspiration behind this paper. This study will help in designing appropriate investment products that will be able to meet the risk criteria approach of investors having different risk tolerance.

OBJECTIVES OF THE STUDY

1. To study the impact of gender on the risk tolerance of the individual investors.
2. To study the influence of financial literacy on the risk tolerance of the individual investors.

The objective of the study is studied through following hypotheses:

H_{01}: There is no relationship between gender of individuals and the risk tolerance of individuals

H_{11}: There is a significant relationship between gender of individuals and the risk tolerance of individuals

H_{02}: Financial literacy does not have any significant influence on risk tolerance of the individuals

H_{21}: Financial literacy has a significant influence on risk tolerance of the individuals

RESEARCH DESIGN AND METHODOLOGY

Research Design

The present study follows Descriptive Research Design as it describes the state of affairs as it exists at present. An attempt has been made to understand the association between gender and risk tolerance of the individuals and also the effect of financial literacy on risk tolerance of the individuals.

Sample Size

The data is collected from the 300 individual investors from the Jalandhar district of Punjab.

Sampling Technique

The Convenience Sampling Technique was used for the data collection.

Source of Data

The present study is a primary data based study, so the data is collected from the individual investors from the urban areas of the Jalandhar district of Punjab. The data from the individual investors was collected by using a well structured questionnaire.

Data Analysis and Interpretation

The data was collected from 300 respondents from Jalandhar district of Punjab consisting of 210 males and 90 females. As the data was collected by using convenience sampling techniques so gender of respondent was not given weightage. Following table shows the description of data size:

Table 1 :Gender of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	210	70.0	70.0	70.0
	Female	90	30.0	30.0	100.0
	Total	300	100.0	100.0	

Chi-Square Analysis was applied at 95% significance level to test the association between gender and risk tolerance of individuals. The risk tolerance of respondents is measured by summing up the total weightage of the answers to multiple questions having different weightage. There were total of 14 questions with 3 answer options. The weightage was assigned as for highest risky answer option the weight equal to 3, medium risk option 2 and for lowest or risk free option the weight equal to 1.

The results of the Chi-Square are indicated in table 2 as below:

Table 2 : Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	124.575	22	.000
N of Valid Cases	300		

The results of Chi Square Analysis shows the Pearson Chi-Square value being 124.575 with p-value 0.000 that indicates the significant association between gender of respondent and their risk tolerance at 95% level of significance. Hence we accept the alternative hypothesis H_{11} that there is a significant relationship between gender of respondent and their risk tolerance.

Regression Analysis is used to test whether financial literacy has any influence on the risk tolerance of respondents. The financial literacy is taken as an independent variable whereas the risk tolerance is assumed to be dependent variable. The financial literacy of the respondent is measured as their financial literacy score. A total of 13 questions were asked from the respondents to measure their financial literacy. Financial literacy score was calculated by assigning one mark to every correct answer and zero mark to every wrong answer.

The table 3 below represents the "Model Summary" is an important table in Regression Analysis as it demonstrates how well our general model fits and how well our indicator financial literacy score, has the capacity to anticipate the risk tolerance of the respondents. The first and the primary measure in the table is R value, the coefficient of correlation is 0.876 at 95% level of significance which shows a very high degree of positive correlation between financial literacy and risk tolerance. The coefficient of determination, R Square is 0.853 which indicates that financial literacy can predict 95.3% of the risk tolerance of the respondents. The higher value of Adjusted R Square i.e. 0.852 indicates the goodness of the model.

Table 3 :Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.876[a]	.853	.852	1.21616

a. Predictors: (Constant), FL score

Table 4 : ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5960.019	1	5960.019	2971.834	.000[b]
	Residual	296.814	148	2.006		
	Total	6256.833	149			

a. Dependent Variable: RT score
b. Predictors: (Constant), FL score

The ANOVA Table shows the F-test outcome showing a measure of the absolute fit of the model to the beta. Here, the significance value of F-test is 0.000 as shown in last column of the table and highly significant at 95% level of significance, so the model does fit the data.

Table 5 : Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	10.877	1.190		9.142	.000	8.526	13.22
FLscore	5.434	.100	.876	54.515	.000	5.237	5.63

a. Dependent Variable: RTscore

In the table 5, the segment headed 'Unstandardized Coefficients', gives the estimation of the consistent, a, which is the capture or the anticipated estimation of X if Y is 0, as it were if financial literacy scores are 0 the risk tolerance score is 10.877. It likewise gives the b (subordinate variable – hazard resistance score) coefficient that is the estimation of Y will change by if X changes by 1 unit. The b quality is 5.434, so if financial literacy scores go up by 1, the risk tolerance scores are anticipated to go up by 5.43

The last segment in the table demonstrates the measurable essentialness of the relationship between the independent and the dependent variable. At 95% huge level, as p-worth is 0.000 so it shows that the relationship is factually critical and statistically significant. Hence, we accept the alternative hypothesis H_{21} which assumes that financial literacy significantly affects the risk tolerance of the respondents.

CONCLUSION

The present study is an endeavour to fill the research gap in the available literature regarding the rapport between financial literacy and risk tolerance and of course the effect of former on later. In

the present study 150 individual investors were approached personally to get their responses on a structured questionnaire to achieve the research objectives. The first objective of the present study was to study the association between gender of the respondent and their risk tolerance. The statistical package for social science (SPSS) was adopted to analyze the data. Results of Chi-Square Analysis rejected the first null hypothesis H_{01} and supported the existence of significant association between gender of respondents and their tolerance. The Regression Analysis was applied to test the hypothesis H_{02} for the second objective i.e. to study whether financial literacy affects the risk tolerance of the respondents. The results were amazing as a very high degree of correlation i.e. 0.876 and a very high degree of variance i.e. 0.853 was observed. The results suggested the rejection of second null hypothesis too. Hence, the study concludes that there is a significant association between gender of the respondent and their risk tolerance and also that the financial literacy of the respondents significantly affects the risk tolerance of the respondents.

LIMITATIONS AND FUTURE PROSPECTS

The present study has its own limitations as regards to sample area, that was Jalandhar city itself only and the sampling techniques as we used the convenience sampling technique. Further studies can be conducted by enlarging the sample size and widening the sample area. Moreover in present, we tested the association of a single demographic attribute that is gender with the risk tolerance of the respondents, in future studies, some more attributes can be added. The financial literacy score and risk tolerance score were calculated on the basis of asking 13 and 14 questions respectively, which can further be increased.

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ROLE OF NATIONAL STOCK EXCHANGE IN INDIAN SECURITIES MARKET

■ **Khyati Kochhar,** Assistant Professor, FMS WISDOM, Banasthali University, Rajasthan

ABSTRACT

Stock Exchange is a hub of primary and secondary market playing a crucial role in the economy. Stock exchange provides a place to the buyers and sellers of the shares and securities. For this purpose National stock exchange was established by the leading institutions in mid 1990s with the main aim to provide a modern and fully automated screen based trading system with national reach. National Stock Exchange has set up facility that serves as a model for securities industry in terms of system and procedures. Hence, in this paper researcher has explained the role of National stock exchange in Indian securities market i.e. how NSE is contributing in the development of stock market of India. To analyze this, researcher has examined the market share of Cash market, equity market and derivative market of NSE and interpretate the results by analyzing the trend pattern of different segments under NSE.

INTRODUCTION

An Overview of the Indian Securities Market

Securities markets provide a channel for allocation of savings to those who have a productive need for them. The Indian securities market has two interdependent segments i.e. Primary market and Secondary market

- ***Primary Market***

Primary market is a market which provides an opportunity to the issuers of securities (both Government and corporations) to raise funds to meet their requirements of investment. Securities, either in the form of equity or debt, can be issued in domestic or international markets at face value, discount or premium.

The primary market issuance can be done either through public issues or private placement. Under Companies Act, 1956, an issue is referred as public if it results in allotment of securities to 50 investors or more. However, when the issuer makes an issue of securities to a select group of persons not exceeding 49 and which is neither the rights issue nor a public issue, it is called a private placement.

- ***Secondary Market***

Secondary market refers to a market where securities are traded after being offered to the public in the primary market or listed on the Stock Exchange. It includes equity, derivatives and the debt markets. It is operated through two mediums- the Over-the-Counter (OTC) market and the Exchange-Traded market. OTC markets are informal markets where trades are negotiated.

EVOLUTION OF INDIAN STOCK MARKET

What is Stock Market?

Stock Market is a market where the trading of company stock, both listed securities and unlisted takes place. It is different from stock exchange because it includes all the national stock exchanges of the country. For example, we use the term, "the stock market was up today" or "the stock market bubble."

What is Stock Exchange?

Stock exchange is an organized sector for the trading of stocks, bonds and other securities. It provides a mechanism through which companies can raise capital for expansion purposes by selling and issuing securities (stocks and bonds). According to **Avadhani (2002)**, Stock Exchange means anybody or individuals whether incorporated or not, constituted for the purpose of assisting, regulating or controlling the business of buying, selling or dealing in securities; it is an association of member brokers for the purpose of self-regulation and protecting the interests of its members. Stock exchanges are the most perfect type of market for securities whether of government, semi-government bodies or other public bodies as well as for shares and debentures issued by the joint-stock companies.

Origin of Indian Stock Market

Indian stock market is one of the oldest stock market in Asia. It was commenced back in 18th century when the East India Company used to transact loan securities. In the years of 1830s in Bombay trading on corporate stocks and shares in Bank and Cotton presses took place. Though the trading was broad but the brokers were hardly half dozen during 1840 and 1850. An informal group of 22 stockbrokers began trading under a banyan tree opposite the Town Hall of Bombay from the mid-1850s, each of them investing a princely amount of Rupee 1. This informal group of stockbrokers organized themselves as the Native Share and Stockbrokers Association which was legally organized in 1875 as Bombay stock exchange (BSE).

Bombay stock exchange was recognized by Government of India in 1956 as the first stock exchange in the country under the Securities Contracts (Regulation) Act. The year 1992 was the

most decisive period in the history of BSE. In the aftermath of a major scandal with market manipulation involving a BSE member named Harshad Mehta, BSE responded to calls for reform with obstinate. The foot-dragging by the BSE helped radicalize the position of the government, which encouraged the creation of the National Stock Exchange (NSE), which created an electronic marketplace.

National Stock Exchange started trading on 4th November, 1994. Within less than a year, NSE's turnover outshined the BSE. BSE rapidly automated, but it never caught up with the speed of NSE spot market turnover.

ESTABLISHMENT OF NATIONAL STOCK EXCHANGE

The National Stock Exchange of India (NSE) was recognized as a stock exchange in April 1993. NSE was set up with the objectives of (a) establishing a nationwide trading facility for all types of securities, (b) ensuring equal access to all investors across the country through an appropriate communication network, (c) providing a fair, efficient, and transparent securities market using an electronic trading system, (d) enabling shorter settlement cycles and book entry settlements, and (e) meeting international benchmarks and standards. Within a short span of time, these objectives have been realised, and the exchange has played a leading role in transforming the Indian capital market to its present form.

NSE has set up infrastructure that serves as a role model for the securities industry in terms of trading systems as well as clearing and settlement practices and procedures. The standards set by NSE in terms of market practices, products, technology, and service standards have become industry benchmarks, and are being replicated by other market participants. NSE provides a screen-based automated trading system with a high degree of transparency and equal access to investors, irrespective of geographical location. The high level of information dissemination through its online system has helped in integrating retail investors on a national basis.

NSE's capital market segment offers a fully automated screen-based trading system, known as the National Exchange for Automated Trading (NEAT) system, which operates on a strict price/time priority. It enables members from across the country to trade simultaneously with ease and efficiency. NSE provides trading in four different segments which are as follows:

Wholesale Debt Market (WDM) Segment

This segment at NSE commenced its operations in June 1994. It provides the trading platform for wide range of debt securities which includes State and Central Government securities, T-Bills, PSU Bonds, Corporate debentures, Commercial Papers, Certificate of Deposits etc.

Capital Market (CM) Segment

This segment at NSE commenced its operations in November 1994. It offers a fully automated screen based trading system, known as the National Exchange for Automated Trading (NEAT) system. Various types of securities e.g. equity shares, warrants, debentures etc. are traded on this system.

Futures & Options (F&O) Segment

This segment provides trading in derivatives instruments like index futures, index options, stock options, and stock futures, and commenced its operations at NSE in June 2000.

Currency Derivatives Segment (CDS) Segment

This segment at NSE commenced its operations on August 29, 2008, with the launch of currency futures trading in US Dollar-Indian Rupee (USD-INR). Trading in other currency pairs like Euro-INR, Pound Sterling-INR and Japanese Yen-INR was further made available for trading in February 2010. 'Interest rate futures' was another product made available for trading on this segment with effect from August 31, 2009.

LITERATURE REVIEW

L.C.Gupta (1992) display the findings of his study that is the Existence of Wild Speculation in the Indian Stock Market "the over speculative character of the Indian stock market is reflected in extremely high concentration of the market activity in a handful of shares to the neglect of the remaining shares and absolutely high trading velocities of the speculative counters and also he advocated that short- term speculation if excessive could lead to artificial price, an artificial price is one which is not justified by prospective earnings (dividends)etc and he concluded that such artificial prices are bound to crash sometime or other as history has repeated and proved".

Amanulla & Kamaiah (1995) "organized a study to test the Indian Stock Market Efficiency by Using Ravallion Co Integration and Error Correction Market Integration Approaches the data used are the RBI monthly aggregate share indices relating five regional stock exchanges in India and according to the authors the co integration results exhibited a long run equilibrium relation between the price indices of five stock exchanges and error correction models indicated short run deviation between the five regional stock exchanges his study found that there is no evidence in favour of market efficiency of Bombay and Madras and Calcutta stock exchanges while contrary evidence is found in case of Delhi and Ahmadabad".

Mukherjee Debjiban (2007) "made a Comparative Analysis of Indian Stock Market with International Markets. His study covers New York Stock Exchange (NYSE), Hong Kong Stock

exchange (HSE), Tokyo Stock exchange (TSE), Russian Stock exchange (RSE), Korean Stock exchange (KSE) from various socio- political-economic backgrounds. Both the Bombay Stock exchange (BSE) and the National Stock Exchange of Indian Limited (NSE) have been used in this study as a part of Indian Stock Market. The main objective of this was to capture the trends, similarities and patterns in the activities and trends of the Indian Stock Market in comparison to its international counterparts. The time period has been divided into various eras to test the correlation between them to prove that the Indian markets have become more integrated with its global counterparts and its reaction are in tandem with that are seen globally. They have been compared on the basis of Market Capitalization, number of listed securities, listing agreements, circuit filters, and settlement. It can be quote that the markets do react to global cues and any happening in the global scenario be it macroeconomic or country specific (foreign trade channel) affect the various markets."

Juhi Ahuja (2012) presented a review on Indian Capital Market & Its Structure "in last decade or so it has been seen that there has been a paradigm shift in Indian capital market and the application of various reforms & developments in Indian capital market has made the market comparable with the international capital market and now it features a developed regulatory mechanism and a modern market infrastructure with growing market capitalization with market liquidity and mobilization of resources with the emergence of new concepts such as Private Corporate Debt market is also a good innovation replacing the banking mode of corporate finance however the market has witnessed its worst time with the recent global financial crisis that originated from the US subprime mortgage market and spread over to the entire world as a contagion".

Nathan Narendra (2015) article was about how to **"**Learn how to pick value stock and has created the long researches shorten to understand the company from different views. Mr. Nathan has carried out 11 steps to pick the best stocks for investment with all the 11 steps are very logical which gives the overall performance of the company and to understand the companies better and the 11 steps are eliminating steps which eliminate stocks which doesn't meet the criteria from an index thus leaving us with filtered stocks for investment and the stocks are not only selected on the basis of these 11 steps it also considers the recent information in the market about the company and a comparison of the 11 steps is repeated to predict the future performance of the company the process of fundamental analysis is compressed to these 11 steps which is the method used in this report for equity analysis".

OBJECTIVES OF THE STUDY

1. To examine how NSE is contributing for the development of Indian Securities Market
2. To analyze the trend of market share of different segments of NSE for the period of three years i.e. 2012-13 to 2014-15.

DATA ANALYSIS & INTERPRETATION

Contribution of NSE in Indian Securities Market

NSE provides a trading platform for all types of securities—equity, debt, and derivatives. Following its recognition as a stock exchange under the Securities Contracts (Regulation) Act, 1956 in April 1993, it commenced operations in the wholesale debt market (WDM) segment in June 1994, in the capital market (CM) segment in November 1994, and in the equity derivatives segment in June 2000. The exchange started providing trading in the retail debt of government securities in January 2003, and currency futures trading in August 2008. Currency options' trading was started in October 2010. Derivatives on global indices such as S&P 500, Dow Jones Industrial Average (DJIA), and FTSE 100 have been introduced for trading on the NSE. The future contracts for trading on the DJIA and futures and options contracts on S&P 500 were introduced on August 29, 2011, while the futures and options contracts on FTSE 100 were introduced on May 3, 2012.

NSE's equity derivatives segment provides the trading of a wide range of derivatives such as index futures, index options, stock options, stock futures, and futures on global indices such as S&P 500 and DJIA and S&P 500.

NSE's currency derivatives segment provides the trading of currency futures contracts on the USD-INR, which commenced on August 29, 2008. In February 2010, trading in additional pairs such as the GBP-INR, EUR-INR, and JPY-INR was allowed, while USD-INR currency options were allowed for trading on October 29, 2010. The interest rate futures trade on the currency derivatives segment of the NSE; they were allowed for trading on August 31, 2009.

NSE launched the cash-settled interest rate futures on 21 January, 2014. On the first day of trading, contracts worth over ` 3,000 crore were traded in the new product. The contracts are based on the most liquid 10-year bonds.

Interest Rate Futures (IRFs) allow bond-holders to hedge their interest rate risk by buying contracts for a future date by paying a price now. Cash settlement enables the investors to just trade in such contracts and settle the profit or loss in cash, without having the physical bond. This

makes the IRF an independent derivative product that can be traded, apart from being used for genuine hedging purposes, something that was not allowed earlier.

NSE has also launched its futures contracts on the India Volatility Index (VIX) called NVIX to help investors hedge the near-term volatility risks in their equity portfolio. This is the first product launched in India on a volatility index, through which investors can hedge the volatility risk. NSE has been disseminating the India VIX since 2009. On the first day of trading, NVIX witnessed trading volumes of ` 325 crore, and 227 members participated in trading.

NSE has also offered a rebate on transaction charges for members in order to encourage participation in the product. NVIX futures will help market participants to hedge volatility risk, balance portfolios, and express views on expected volatility. NVIX futures are traded in NSE's F&O segment. All market participants are currently permitted to participate in the F&O segment.

Trend of Market Share of Different Segments of NSE (2012-13 to 2014-15)

TABLE: 1 MARKET SEGMENT ON NSE FOR 2012-13

Segments	Market Capitalization	Trading Value	Market share in percentage
CM	62,390,350	27,082,791	83.2
Equity F&O	-	315,330,040	81.5
Currency F&O	-	52,744,647	60.6
Total	62,390,350	395,157,477	78.0

Source: NSE Website

Table: 2 Market Segment on NSE for 2013-2014

Segments	Market Capitalization	Trading Value	Market share in percentage
CM	72,777,200	28,084,878	84.1
Equity F&O	-	382,114,081	80.3
Currency F&O	-	40,125,135	57.5
Total	72,777,200	450,324,093	77.8

Source: NSE Website

Table: 3 Market Segment on NSE for 2014-2015

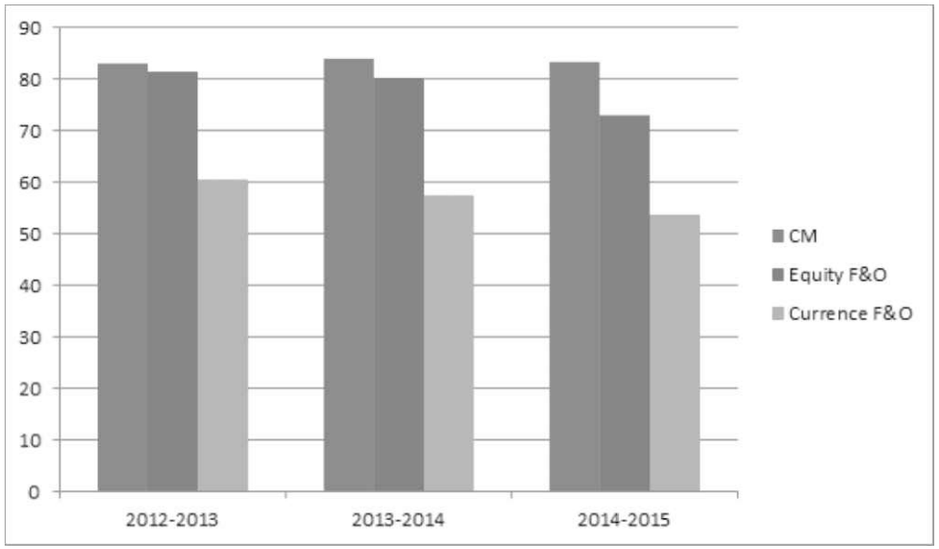
Segments	Market Capitalization	Trading Value	Market share in percentage
CM	99,306,220	43,296,550	83.5
Equity F&O	-	556,064,534	73.2
Currency F&O	-	30,239,077	53.7
Total	99,306,220	599,361,084	69.1

Source: NSE Website

From the table 1, 2 and 3 we can say that trend of market capitalisation of cash market segment from the year 2013-2015 has increased tremendously by 59.1% and even the trading value is increasing which shows that there is high growth in capital market. Even there is an increasing trend in the trading value of Equity F&O segment of NSE which shows the interest of investors is increasing in trading of equities. But on the same time there is a fall in the trading value of Currency F&O by 42.6%. The figure 1 below shows the market share of different segments of

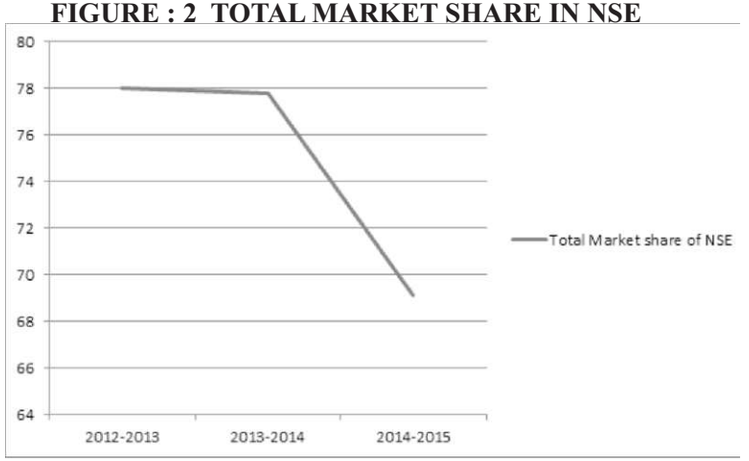
NSE. In the year 2012-2013, cash market segment and Equity F&O segment was very close in term of market share i.e. 83.2% and 81.5% respectively. But in the same year the share of Currency F&O segment was little less i.e. 60.6%. Similarly, the trend of all three segments in the consecutive years was same. Market share of cash market is highest whereas that of currency F&O is lowest.

FIGURE 1: MARKET SHARE OF SEGMENTS OF NSE



In the figure 2 given below shows that the total market share of NSE has decreased in the year 2014-2015. There was consistent share in the year 2012-13 and 2013-14 i.e. 78% and 77.8% respectively but market share declined in the 2014-15.

FIGURE : 2 TOTAL MARKET SHARE IN NSE



CONCLUSION

NSE has played the role of a catalytic agent in reforming the market in terms of microstructure and market practices. Right from its inception, the exchange has adopted the purest form of a demutualised setup, whereby the ownership, management, and trading rights are in the hands of three different sets of people. This has completely eliminated conflicts of interest and has helped NSE to aggressively pursue policies and practices within a framework that focuses on public interest. It has helped in shifting the trading platform from the trading hall in the premises of the exchange to the computer terminals at the premises of the trading members located across the country, and subsequently, to the personal computers in the homes of investors. Settlement risks have been eliminated with NSE's innovative endeavours in the area of clearing and settlement, namely, the reduction of the settlement cycle, the professionalization of the trading members, the implementation of a fine-tuned risk management system, the dematerialisation and electronic transfer of securities, and the establishment of a clearing corporation. Consequently, the market currently uses state-of-the- art technology to provide an efficient and transparent trading, clearing, and settlement mechanism. Capital Market Segment of NSE has been continuously growing during the period. The share of turnover of NSE is the largest as compared to other stock exchanges.

The market has witnessed fundamental institutional changes, resulting in drastic reduction in transaction costs and significant improvements in efficiency, transparency and safety which led the National Stock Exchange to do a remarkable task for the economic development of a country and to promote professionalism in the capital market for providing better securities trading facilities to investors nationwide. Once again, the NSE is the market leader, with 77.8% of total turnover (volumes in cash market, equity derivatives, and currency derivatives) in 2013–2014. NSE proved itself to be the market leader, with 83.5% share in equity trading, and nearly 73.2 % share in the equity derivatives segment in 2014–2015.

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GST OVER VAT IN INDIA: A TRADER'S ATTITUDINAL PERSPECTIVE

- **Dr. Poonam Sharma,** Assistant Professor, P.G. Department of Commerce & Business Administration, Khalsa College, Amritsar, Punjab.
- **Dr. Jaspal Singh,** Professor, Department of Commerce, Guru Nanak Dev University, Amritsar Punjab.

Abstract

Purpose: The purpose of this paper is to assess the awareness level of traders regarding Value Added Tax (VAT) in India besides examining the implications of the respondent's attitude for the policy-makers especially in context of Goods and services tax.

Design/methodology/approach: For assessing the attitude of respondents towards the VAT system, primary data has been collected from a sample of 214 respondents using well-structured and pre-tested questionnaire which was drafted on the basis of relevant literature.

Findings: The paper finds that in India the main concern of the respondents is for the trader friendly environment along with factors like impact on tax rates and prices, implementation issues and administration costs. Further, the complexity of tax procedure has emerged as an important issue. Computation of VAT liability has also been identified as a major factor by the respondents.

Research limitations/implications: Major limitation is that study is based on the attitude of respondents from Amritsar city of Punjab State in India and hence the findings may not be generalized for the country as a whole.

Practical implications: The present paper brings into light the fact that though the majority of the states in India have adopted Value Added Tax (VAT), but it cannot be regarded as an ideal tax in its present form due to multiplicity of rates besides co-existence of indirect taxes like central sales tax, central excise etc. Hence, traders in India are in a state of efflux due to the presence of layers of taxes. Hopefully, the Goods and Services Tax (GST) proposed to be implemented by government of India as a replacement for VAT and other taxes may provide solution to such problems. With the introduction of GST, all the cascading effects of CENVAT and service tax will be removed with a continuous chain of set-off from the producer's point to the retailers point than what was possible under the prevailing CENVAT and VAT regime..

Keywords *- VAT, Traders, Central sales tax, Complexity, Tax-rates, CGST, SGST*

GST OVER VAT IN INDIA: A TRADER'S ATTITUDINAL PERSPECTIVE

Introduction

The system of indirect taxation in India is urgently in need of reforms is hardly disputed. Expansion of the tax base, reduction in evasion, simplification of rules to bring about transparency and efficiency should obviously be the objectives of any tax reform policy. However, the achievement of these objectives is more or less independent of the mode of tax collection or the base on which tax obligations are calculated. This is so for two reasons. First, the factors which have resulted in unending legal disputes, inefficient enforcement, large-scale evasion, etc, are not due simply to the mode of taxation. This being the case, the view that a switch over to the value added taxation (VAT) is the panacea for all aforesaid problems is clearly untenable. Secondly, expansion of tax base by bringing services within the purview of taxation, simplification of rules, efforts at bringing about greater harmonization of tax rates across states and other similar reforms need not be and are not tied to a switch over to VAT (Sundaram, Pandit and Mukherji, 1995).

It is generally perceived that the introduction of VAT would bring in the elements of simplification of tax rates besides other advantages like transparency, fair and equitable basis, increased revenue and wider scope. Gurumurthi (1993) discussed the issue of introduction of VAT with a view to suggesting a possible approach to moving towards VAT in a large federal economy such as India. It was stated that apart from the advantages of eliminating cascading effect associated with sales tax regime, VAT also holds out great potentials of raising additional resources by bringing within its purview the services sector like medical, computer, consultancy and automobile services and even a sector like housing.

Therefore, a country like India which experiences the phenomenon of a large fiscal deficit might stand to gain by opting for VAT in the not-too distant a future. Bagchi (1994) observed that revenue neutrality could not be achieved with the reforms that have taken place so far until real progress is made in introducing a comprehensive tax on domestic consumption for which the only efficient instruments are a retail sales tax or tax on value added basis. If taxation of retail sales which offers efficient way of taxing domestic consumption is ruled out for administrative reasons, then the only alternative is the destination-based value added tax. The aim should be to move towards a destination-based value added tax at the state level on the pattern obtained from the European Union, replacing the existing sales taxes. Here, as elsewhere, the urge for reform has to come from below - from the people and the economic agents who arc affected the most. In the absence of general awareness of the urgency and a consensus on what is desirable, prospects for radical reform of domestic trade taxes and introduction of a truly harmonized value added tax seem distant. Murty (1995) in his study covering the commodity tax reforms in India stated that comprehensive VAT with consumption base covering the full chain of business activities from manufacturing to retailing is identical to a tax on retail sales. Given a choice between a VAT and a tax on retail sales, a developing country has to opt for VAT, because retail sales departments are small, unstable and informal in those countries. A comprehensive VAT with the consumption base, the tax credit method,

and the destination principle to determine VAT on international and inter-state trade flows can form an ideal commodity tax structure for India. In a federal country like India, it may be ideal to have state and central VATs substituting the current state and central taxes on goods and services respectively.

Sundaram, Pandit and Mukherji (1995) examined the central issue of revenue neutrality and relative prices under alternative tax systems. It was stated that in considering a switch over to value added taxation or any of its variants, what is of fundamental importance is the effect on resource allocation in the economy and resource transfer to the government. This implies that what needs to be considered is the revenue that is generated under alternative systems and the structure of absolute and relative prices associated with each. A key argument widely advanced in favour of a switchover to VAT is the need to free inputs from taxation so that input choices are made efficiently without being distorted by input-taxation. Analysis reveled that, under an invoice-based VAT with non- uniform tax rates across sectors, inputs are, in general, not free from taxes (positive or negative). Further, rebates would also pose a problem for anyone who has had to deal with government bureaucracy.

Pricewaterhousecoopers' Survey (2006) on VAT implementation covering more than 100 companies with all India operations revealed that VAT was largely price-neutral on an overall basis. As many as 57 per cent of the respondents did not perceive any change in prices due to VAT. FICCI Survey (2006) on problems of corporate and traders with regard to the procedural and administrative hassles in VAT regime revealed several key areas of concern like non-availability of 'Form C', refund of input tax credit in excess of output tax, maintenance of books of accounts and reconciliation thereof etc.

Another survey by The Associated Chambers of Commerce and Industry of India (2007) revealed that the major reason behind the increase in transaction costs during the VAT regime may be attributed to money incurred to get the VAT refund and increased paper work, record keeping and employment of separate staff for the purpose.

The above given studies reveal that though enough literature is available on taxpayer's attitude around the globe, but, to the best knowledge of researcher, there is a dearth of same as regards indirect taxation in India. Thus, the present study is an attempt to:

- Examine the implications of the respondent's attitude as regards Value Added Tax in India.
- To study the structure of proposed Goods and Services Tax in India and to make suggestions to the policy-makers for improving goods and services tax system in India.

RESEARCH DESIGN

Sample and Questionnaire

For assessing the attitude of respondents towards the VAT system, primary data has been collected using well-structured and pre-tested questionnaire which was drafted on the basis of relevant literature. A pool of 19 statements (Table I) was developed on a five-point Likert scale ranging from 'strongly agree' (5) to 'strongly disagree' (1). Items were finalised after consulting relevant literature (Ebrill et al. 2001; Ahuja,

2004; ICRA, 2005, Kumar, 2005; The FICCI survey, 2006; Khatik, 2006; Pricewaterhousecoopers' Survey, 2006; ASSOCHAM, 2007).

The questionnaires were distributed to a sample of 250 respondents (Traders from the Trading Firms as well as Manufacturing Firms) in Amritsar city of Punjab in India. As no published list of taxpayers was available, therefore, the sample has been collected on the basis of convenience-cum-judgement sampling. In all, 227 responses were received out of which 214 responses (94.27 per cent) were found to be valid for the purpose of the present study.

Statistical Techniques

Factor analysis has been applied for identifying the factors influencing the attitude of respondents as regards VAT system in India. Before applying the factor analysis, *Reliability* of the scale was checked with the help of *Cronbach's alpha* to assess the internal consistency of the entire scale. Besides the exploratory factor analysis, mean and standard deviation for the 19 variables have also been computed and analyzed. SPSS (11.5) was used for the analysis.

DATA ANALYSIS

Scale Construction, Reliability and Validation

Scale Construction

As already explained, a set of 19 statements was formulated to measure the attitude of respondents by consulting the relevant literature. The respondents were asked to indicate their level of agreement with each statement on a five point likert scale ranging from 'Strongly Agree' to 'Strongly Disagree'.

Reliability and Validity Analysis

By using reliability analysis, one can determine the extent to which items in the questionnaire are related to each other besides getting an overall index of the repeatability or internal consistency of the scale as a whole. The most widely used measure for diagnosing the reliability of the entire scale is the Cronbach's alpha. The generally agreed upon lower limit for Cronbach's alpha is 0.70, although it may decrease to 0.60 in exploratory research (Hair et al., 2005, p. 118). The overall Cronbach alpha for the 19-item scale has been estimated as 0.7464, which could be regarded as an adequate keeping in view the exploratory nature of the research. Validity is the extent to which a scale or set of measures accurately represents the concept of interest (Hair et al. 2005). Face validity is the mere appearance that a measure is valid (Kaplan and Sacuzzo, 1993).

The instrument for the present study ensures face and content validity due to its being based on relevant conceptual and empirical literature.

To sum up, the 19-item scale has reflected strong evidence of reliability, face and content validity.

Table I

19-item Attitude Scale
(Descriptive Statistics)

Label	Statements	Mean Score	Standard
S 1	The government did enough to make the traders aware about VAT.	2.9673	1.24616
S 2	Registration for VAT is tough.	3.3972	.96716
S 3	VAT is trader friendly.	3.1355	1.13640
S 4	The transition from sales tax to VAT has been smooth.	3.2523	1.08851
S 5	The proposed GST will lead to uniformity of tax rates.	2.9019	1.19258
S 6	VAT rates are higher than PST rates.	2.9439	1.11188
S 7	VAT has lead to increase in prices.	3.3879	1.06768
S 8	VAT has increased profit margins.	2.6402	1.05103
S 9	Due to VAT, working capital requirements have increased.	3.9626	.80986
S 10	Administrative costs for business have increased due to VAT.	4.1963	.73080
S 11	Accounting requirements have gone simple on account of VAT.	2.7336	1.15026
S 12	The sales department is fully prepared with respect to technology and effective implementation.	2.6028	1.13261
S 13	As against VAT, GST will curb sales tax evasion better.	2.9393	1.11374
S 14	Penalties under VAT are reasonable.	2.3271	1.20075
S 15	Format of the VAT form is simple.	3.1215	1.25754
S 16	Filing of VAT return is time consuming.	3.8598	1.03415
S 17	Filing requires unnecessary details.	4.0047	.82506
S 18	Filing quarterly return is better than annual return.	3.2336	1.20702
S 19	Form makes computation of VAT liability easy.	3.3832	.99901

As a five-point likert scale was used for measuring the attitudes of taxpayers, the maximum score to be received is 95 (i.e. if all 19 statements in the scale receive a score of five). As per Table I, the mean score of the respondents is 61, i.e., 34 per cent below the maximum. This score, in general terms, reveals a positive attitude of the respondents as regards issues of VAT in India.

Exploratory Factor Analysis

The 19-item scale was subject to Exploratory Factor Analysis to summarize the data into fewer and more understandable factors. In Principal Component Analysis, the total variance in the data is considered. It is recommended when the primary concern is to determine the minimum number of factors that will account for maximum variance in the data for use in subsequent multivariate analysis. The factors are called principal components (Malhotra, 2005, p.564). The rotation is called Orthogonal Rotation, if the axes are maintained at right angles. The most commonly used method for rotation is the Varimax procedure. This is an orthogonal method of rotation that minimizes the number of variables with high loadings on a factor, thereby enhancing the interpretability of the factors (Malhotra, 2005, p.568).

The appropriateness of factor analysis has been determined by computing the Correlation matrix, Kaiser-Meyer-Oklin (KMO) Measure of Sampling Adequacy and Bartlett test of Sphericity. The results for these measures are as follows:

- Correlation Matrix: A correlation matrix is a lower triangle matrix showing the simple correlations, r, between all possible pairs of variables included in the analysis. The correlation matrix (Table II) revealed substantial correlation among the variables.

- Kaiser-Meyer-Olkin Measure of Sampling Adequacy: Another measure to quantify the degree of inter-correlations among the variables and the appropriateness of factor analysis is the measure of sampling adequacy. This index ranges from 0 to 1, reaching 1 when each variable is perfectly predicted without error by other variables. The measure can be interpreted with the following guidelines: 0.80 or above, meritorious; 0.70 or above, middling; 0.60 or above, mediocre; 0.50 or above, miserable; and below 0.50, unacceptable (Hair et al., 2005, p.99). The value of KMO measure of sampling adequacy is 0.742 (Table III), which also shows that the factor analysis is an appropriate technique for analyzing the data.

TABLE II: CORRELATION MATRIX OF THE RESPONDENTS SCALE

	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S 18	S 19
S1	1																		
S2	.517(**)	1																	
S3	.544(**)	.553(**)	1																
S4	.390(**)	.390(**)	.561(**)	1															
S5	.134	.095	.121	.037	1														
S6	-.076	-.141(*)	-.239(**)	-.202(**)	.230(**)	1													
S7	-.220(**)	-.118	-.163(*)	-.178(**)	.310(**)	.430(**)	1												
S8	.310(**)	.317(**)	.548(**)	.289(**)	.324(**)	-.021	.004	1											
S9	.036	.103	.011	.123	-.223(**)	-.008	-.108	-.176(**)	1										
S10	-.096	.069	.007	.067	-.193(**)	.002	.155(*)	-.293(**)	.473(**)	1									
S11	.272(**)	.412(**)	.545(**)	.425(**)	-.026	-.199(**)	-.298(**)	.472(**)	-.061	-.105	1								
S12	.303(**)	.432(**)	.389(**)	.291(**)	.159(*)	-.122	-.190(**)	.199(**)	-.073	-.104	.563(**)	1							
S13	.249(**)	.284(**)	.307(**)	.082	.310(**)	-.029	-.059	.274(**)	-.190(**)	-.251(**)	.200(**)	.461(**)	1						
S14	.139(*)	.130	.067	.034	.501(**)	.401(**)	.227(**)	.276(**)	-.298(**)	-.298(**)	.060	.269(**)	.475(**)	1					
S15	.494(**)	.501(**)	.576(**)	.588(**)	-.051	-.096	-.221(**)	.328(**)	.147(*)	-.006	.522(**)	.426(**)	.159(*)	.020	1				
S16	.088	.323(**)	.144(*)	.098	-.099	.083	.071	-.051	.313(**)	.447(**)	.114	.040	-.020	.030	.183(**)	1			
S17	.078	.168(*)	.014	.014	-.219(**)	-.076	-.066	-.058	.211(**)	.131	.130	.097	-.122	-.111	.036	.479(**)	1		
S 18	-.039	.097	.110	.009	.411(**)	.199(**)	.079	.300(**)	-.140(*)	-.254(**)	.130	.109	.360(**)	.378(**)	.025	-.271(**)	-.341(**)	1	
S 19	.138(*)	.294(**)	.264(**)	.101	.154(*)	-.002	.155(*)	.271(**)	-.238(**)	-.078	.253(**)	.168(*)	.245(**)	.165(*)	.161(*)	-.039	.004	.323(**)	1

*Correlation is significant at 0.05 level
** Correlation is significant at 0.01level

- **Bartlett Test of Sphericity**: The Bartlett test of sphericity provides the statistical probability that the correlation matrix has significant correlations among at least some of the variables. Table 6 shows that the value of Chi-Square = 1597.900 df =171 is significant ($p < 0.001$) which further shows the appropriateness of data for factor analysis.

The item scale was subject to factor analysis using ***Principle Component method*** with ***Varimax rotation.*** The principle component analysis was conducted using the SPSS 11.5 statistical package. The commonly used procedure of Varimax orthogonal rotation for factors whose ***eigen values*** were greater than 1.0 was employed in the analysis. The rationale for the latent root criterion/eigen value is that any individual factor should account for the variance of at least a single variable if it is to be retained for interpretation. Each variable contributes a value of 1 to the total eigen-value. Thus, only the factors having latent roots or eigen-values greater than 1 are considered significant; while all factors with latent roots less than 1 are considered insignificant.

Items were retained that had loadings of 0.45 or greater and loaded clearly on only one factor. A five factor solution was extracted, accounting for 63.13 per cent of the total variance. The rotated factor matrix, eigen values and per cent of variance along with communalities (h^2) are presented in Table III.

Naming the Factors

F1: Trader friendly

F2: Impact of tax rates on prices

F3: Implementation issues and administration costs

F4: Complexity of VAT return forms

F5: VAT liability computation

TABLE III : ROTATED FACTOR MATRIX

	F1	F2	F3	F4	F5	h^2
S1	.664					.492
S2	.696					.617
S3	.830					.741
S4	.762					.610
S5		.660				.578
S6		.716				.569
S7		.645				.694
S8	.517					.551
S9					-.531	.604
S10			-.652			.640
S11	.627					.620
S12			.573			.609
S13			.655			.592
S14		.682				.758
S15	.808					.661
S16				.796		.744
S17				.810		.709
S 18						.519
S 19					.788	.687
Eigen Value	**4.643**	**3.160**	**1.883**	**1.222**	**1.086**	**11.995**
Cumulative Var. (per cent)	**21.699**	**33.808**	**44.763**	**55.146**	**63.130**	

Overall Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) value = 0.742

Bartlett's test of Sphericity: Approx. Chi-Square=1597.900 df=171 Sig. = 0. 000

F 1: Trader friendly

This factor is the most important factor as it accounts for 21.699 per cent of the total variance. Table IV gives the composition of this factor along with the factor labels and loadings. In total, seven variables have loaded on this factor.

TABLE IV: TRADER FRIENDLY

Labels	Variables	Loadings
S3	VAT is trader friendly.	0.830
S15	Format of the VAT form is simple.	0.808
S4	The transition from sales tax to VAT has been smooth.	0.762
S2	Registration for VAT is tough.	0.696
S1	The government did enough to make the traders aware about VAT.	0.664
S11	Accounting requirements have gone simple on account of VAT.	0.627
S8	VAT has increased profit margins.	0.517

It is clear from table IV that the variable S 3 'VAT is trader friendly' has got the highest loading of 0.830 followed by the other variables i.e. S 15 (0.808), S 4 (0.762), S 2 (0.696), S 1 (0.664), S 11 (0.627), and S 8 (0.517). The successful implementation of any tax depends on the easy understanding by the taxpayers besides effective use of administrative machinery.

F2: Impact of tax rates on prices

The second most important factor is the 'Impact of tax rates on prices' and it accounts for 12.108 per cent of variance. In total, four variables have been loaded on this factor. Table V gives a description of these variables along with factor loadings.

TABLE V: IMPACT OF TAX RATES ON PRICES

Labels	Variables	Loadings
S6	VAT rates are higher than PST rates.	0.716
S14	Penalties under VAT are reasonable.	0.682
S5	The proposed GST will lead to uniformity of tax rates.	0.660
S7	VAT has lead to increase in prices.	0.645

It is clear from table V that the variable S 6 'VAT rates are higher than PST rates', has got the highest loading of 0.716 followed by the other variables i.e. S 14 (0.682), S 5 (0.660), and S 7 (0.645). In India, though VAT has been implemented in different states, yet due to lack of uniformity in tax-rates along with existence of other indirect taxes like CST, central excise tax; taxpayers are over-burdened with cascading effect.

F3: Implementation issues and administration costs

The third factor that has emerged from the analysis is the 'Implementation issues and administration costs' and it accounts for 10.955 per cent of the total variance. It is clear from table VI that three variables have loaded on this factor namely; S 13 (0.655), S12 (0.573), and S 10 (-0.652) respectively in that order.

TABLE VI: WORKING CAPITAL AND ADMINISTRATION COSTS

Labels	Variables	Loadings
S 13	As against VAT, GST will help curb sales tax evasion better	0.655
S12	The sales department is fully prepared with respect to technology and effective implementation.	0.573
S10	Administrative costs for business have increased due to VAT	-0.652

As per this factor, though GST implementation could help in curbing sales tax evasion but for ensuring it, technology savvy staff would be pre-requisite. Moreover, negative loading of S 10 indicates that VAT also has an impact (i.e. adverse impact) on the administrative costs of business in India.

F4: Complexity of VAT Return Forms

The fourth factor that has emerged from the analysis is the 'Complexity of VAT return forms' and it accounts for 10.383 per cent of the total variance. Table VII gives the composition of this factor along with loadings.

TABLE VII: COMPLEXITY OF VAT RETURN FORMS

Labels	Variables	Loadings
S17	Filing requires unnecessary details.	0.810
S16	Filing of VAT return is time consuming.	0.796

The two variables that got loaded on this factor are S 17 'Filing requires unnecessary details' (0.810) and S 16 'Filing of VAT return is time consuming' (0.796). The existence of multi-layer taxes along with cumbersome filing procedure defeats the very purpose of introducing any new initiative to increase the revenue of the exchequer.

5: VAT liability computation

This is the last factor and it accounts for 7.006 per cent of the total variance. Only two variables i.e. S19 (0.788) and S 9 (-0.531) got loaded on this factor. Table VIII gives the composition of this factor along with loading.

TABLE VIII: VAT LIABILITY COMPUTATION

Labels	Variables	Loadings
S19	Form makes computation of VAT liability easy.	0.788
S9	Due to VAT, working capital requirements have increased.	-0.531

The computation of VAT liability depends not only on the pattern of form but also on the billing systems that at present is subject to extreme variations in different states. Negative loading of S9 indicates a negative relationship between S19 and S9 variables i.e. working capital requirements move in opposite direction to an attempt to make computation of VAT liability easy (it increases with every type of VAT Form). So, there is a need to ensure transparency in the billing procedures followed by traders and manufacturers in India across states.

Goods and Services Tax – The Unified Taxation of Goods and Services

As stated in The Tribune dated August 4, 2016 Rajya Sabha unanimously passed the Constitution (122nd Amendment) Bill,2014, with 203 votes in favour. Bill as passed by RS will first go to Lok Sabha again, since it underwent amendments after being first passed by LS on May 6, 2015. Being a constitutional amendment that involves the states, at least 50 per cent have to ratify it. The necessary IT infrastructure also has to be set up. The GST bill gives concurrent taxation powers to both centres and states. The centre will levy a central GST, while states will levy a state GST.

"Goods and Services Tax" would be a comprehensive indirect tax on manufacture, sale and consumption of goods and services throughout India and would be levied and collected at each stage of sale or purchase of goods or services based on the input tax credit method. This method allows GST-registered businesses to claim tax credit to the value of GST they pay on purchase of goods or services as part of their normal commercial activity. If GST is implemented there is likely to be short-term lift to price pressures, especially as service taxes are raised from the current 15% to 17-18%. Consumers will have to pay more for services such as mobile bills, financial services and eating out that account for 57 per cent of the GDP. Further, it will shift trade from the unorganized to the organized segment and improve efficiency.

Tax-Rate under the proposed GST

The tax-rate under the proposed GST would fall, but the number of assesses would increase by 5-6 times. Although rates would come down, tax collection would go up due to increased buoyancy. The government is working on a special IT platform for smooth implementation of the proposed Goods and Services Tax (GST). The IT special purpose vehicle (SPV) christened as GST N (Network) will be owned by three stakeholders—the centre, the states and the technology partner NSDL.

Structure of GST

The following points briefly highlight the structure of GST in India:

- The power to make laws in respect of supplies in the course of inter-State trade or commerce will be vested only in the Union government. States will have the right to levy GST on intra-State transactions including on services.
- Centre will levy IGST on inter-State supply of goods and services. Import of goods will be subject to basic customs duty and IGST.
- GST defined as any tax on supply of goods and services other than on alcohol for human consumption.
- Central taxes like, Central Excise duty, Additional Excise duty, Service tax, Additional Custom duty and Special Additional duty and State level taxes like, VAT or sales tax, Central Sales tax, Entertainment tax, Entry tax, Purchase tax, Luxury tax and Octroi will subsume in GST.
- Petroleum and petroleum products i.e. crude, high speed diesel, motor spirit, aviation turbine fuel and natural gas shall be subject to the GST on a date to be notified by the GST Council.

- 1% origin based additional tax to be levied on inter-State supply of goods will be non-creditable in GST chain. The revenue from this tax is to be assigned to the Origin State. This tax is proposed to be levied for initial two years or such period as recommended by the GST Council.
- Provision for removing imposition of entry tax / Octroi across India.
- Entertainment tax, imposed by States on movie, theatre, etc will be subsumed in GST, but taxes on entertainment at panchayat, municipality or district level to continue.
- GST may be levied on the sale of newspapers and advertisements and this would give the government's access to substantial incremental revenues.
- Stamp duties, typically imposed on legal agreements by the state, will continue to be levied by the States.
- Administration of GST will be the responsibility of the GST Council, which will be the apex policy making body for GST. Members of GST Council comprised of the Central and State ministers in charge of the finance portfolio.

Justification of GST

- In the present state-level VAT scheme, CENVAT load on the goods has not yet been removed and the cascading effect of that part of tax burden has remained unrelieved. Further, several taxes in the states, such as Luxury tax, Entertainment tax, etc. have still not been subsumed in the VAT. There has also not been any integration of VAT on goods with tax on services at the State level with removal of cascading effect of service tax. Thus, GST is not simply VAT plus service tax but a major improvement over the previous system of VAT and disjointed services tax.
- With the introduction of GST, all the cascading effects of CENVAT and service tax will be removed with a continuous chain of set-off from the producer's point to the retailers point than what was possible under the prevailing CENVAT and VAT regime. The uniformity in tax rates and procedures across country will go a long way in reducing the compliance cost. This would help in better tax compliance and a lowering of tax burden on an average dealer in industry, trade and agriculture.
- The subsuming of major central and state taxes in GST, complete and comprehensive set off of input goods and services and phasing out of Central Sales Tax (CST) would reduce the cost of locally manufactured goods and services. This will help in improving the competitiveness of Indian goods and services in the international market and give boost to Indian exports.

- GST would also benefit the consumers as they would have to bear a lower burden of taxes on goods due to the removal of cascading effects of CENVAT, service tax, CST etc.·
- India is a federal country where both the Centre and States have been assigned the powers to levy and collect taxes throughout appropriate legislation. Both the levels of Government have distinct responsibilities to perform according to the division of powers prescribed in the Constitution for which they need to raise resources. A dual GST, therefore, is as per the Constitutional requirement of fiscal federalism.

Structural Defects that Needs Attention by the Policy-Makers vis-a-vis Survey Results

In the light of above given discussion, GST structure in its present form has certain shortcomings that needs to be addressed before they are implemented. These are:

- GST involves a highly complicated system for inter-state credit of input tax and finally with no certainty that states will always abide by the fixed rates of tax. The third factor that has emerged from the analysis of the present study i.e. "Implementation issues and administration costs" also supports this issue. According to this factor, technology savvy staff would be a pre-requisite for ensuring effective implementation of any new tax system in India.
- An extremely important point is that on the common base of tax, there will be two collectors, one the centre and other the states. In no other model of GST in any other country such a situation exists. In Canada (whose indirect tax structure is most comparable to India) the tax base is common (i.e. combination of central taxes and state sales tax). But if once taxed, the other authority does not charge on the same tax base.
- GST on imports will result in increased cost. Sectors like construction, railways etc. which do not pay duty will get no credit but will have to bear the extra burden of tax. In the present study, 'Impact of tax rates on prices' is one of the factors that highlight the problem of cascading effect.
- GST would also increase complexity as there will be millions of transactions relating to payment of tax to the State, transfer of tax from the selling State to the Centre, again transfer from Centre to the buying State by book adjustment through computer system involving auditing procedures also. The findings of the present study also support this issue. VAT liability computation has emerged as one of the factors which indicate that the computation of VAT liability depends not only on the pattern of form but also on the billing systems that at present is subject to extreme variations in different states.

Conclusion and Suggestions

The present paper brings into light the fact that though majority of the states have adopted VAT, but it cannot be regarded as an ideal tax in its present form due to the existence of multiple rates besides other indirect taxes like central sales tax, central excise tax etc. So, at present, traders in India are facing cascading effect of taxes due to the presence of layers of taxes. Overall, it could be stated that in India the main concern of the respondents is for the trader friendly environment besides factors like impact on tax rates and prices, implementation issues and administration costs, complexity of VAT return and VAT liability computation. These results reflect the vote and support of respondents for a simple and transparent tax structure. The following suggestions could be considered in this regard:

- Limits of turnover for composite scheme should be increased so that small and medium traders are not overburdened with tax liability.
- Tax-evasion acts as a major barrier for the successful implementation of any tax law. Enforcement activities must be used in an effective manner to curb evasion of taxes in different states.
- Regular training programs must be organised for the concerned officers as well as traders so as to enhance and update their knowledge about the different aspects of law relating to taxation of goods and services.
- As prevalent under VAT regime, the states charge different rates on goods and services in accordance to their economic standing. Therefore, under GST, the formulae of share between the originating state and the recipient state in case of stock transfer should consider such factors.
- Transparency should also be ensured with regard to refund of taxes.
- There should be a common appellate body for all GST disputes across India.
- Electronic connectivity (of all taxpayers) should also be ensured as this would bring in more efficiency.

Research limitations and Scope for future research

Major limitation is that study is based on the attitude of respondents from Amritsar city of Punjab State in India and hence the findings may not be generalized for the country as a whole. The future research can thus overcome this limitation by enhancing the sample size and area.

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Demographic Analysis of life Insurance demand in India

- DR. SILENDER SINGH, Assistant Professor, Department of Commerce, Chaudhary Devi Lal University, Sirsa, Haryana.
- AMANPREET KAUR, Research Scholar, Department of Commerce, Chaudhary Devi Lal University, Sirsa, Haryana.

Abstract:

Indian life insurance sector witnessed tremendous growth towards the end of first decade of this millennium supporting strongly economic growth via its capital and financial markets with new rays of hope. But after 2010 it showed volatile trends in spite of promising and opportune demographic trends. Besides, Indian life insurance consumption levels lagged far behind the levels of developed nation's league. This paper is an attempt to make re-assessment of demographic factors shaping demand of life insurance sector in India, using the annual aggregate data series from 1995-2014. The study examines the impact of education, urbanization and population as independent variables through OLS regression technique, on life insurance demand. The outcomes of the study may facilitate; insurers, in devising suitable marketing strategies to expand their business; regulator and the government, in taking policy decisions to realize its dream project of "Insurance Inclusion". A closer introspection of demographic profile of Indian economy,loaded with huge potentialmay possibly uplift life insurance consumption, and ultimately sponsor economic development of the country.

Key Words: Life insurance demand, Demographic factors, OLS regression, India.

1. Introduction:

Social and demographic profile of a country has profound implications in shaping up its insurance fortune. Variations in the structural and demographic configurations of the society spearhead in streamlining financial security systems. Indian conventional family cohesiveness for economic security has decayed due to diffusion of joint family system. Furthermore, there is reduction in the number of children per family, agricultural sector is shrinking, share of service sector in economy is expanding, urbanization and literacy levels are scaling, life expectancy of Indian populace is improving and above all, population index is intensifying. These demographic shuffles certainly have implications on the demand of long term financial planning and risk management instruments like life insurance.

In India, regulatory moves of globalization, deregulation of life insurance business and frequent life threats from terrorist attacks has brought life insurance products in vogue these days. Despite the glimpses of tremendous improvement in life insurance penetration and density levels during the first decade of this millennium, Indian life insurance market largely remains under penetrated with 80% of its population devoid of life insurance cover (consumerforumindia, 2011). Even prevalent market is primarily reliant on push, tax incentives and enforced buying for sales (Ernst & Young, 2012).Furthermore, Eurozone crisis has detracted the growth voyage of the industry, and is struggling with de-growth to the tune of 6.32% in terms of First Premium Income in the year 2012-13 (Majumdar, July, 2013). Confronted challenge of decaying penetration and density levels (IRDA Annual report 2013-14) along with exploring vast untapped potential in the industry can be combatted, if handled properly and strategically and can make a marked difference in current scenario.

The demographic "sweet spot" of Indian life insurance sector projects a lucrative picture of the industry with 1.24 billion second largest population of the world among whom 65 per cent are in the productive age group of 15-64(Bansal, Jalan, &Sabhlok, 2014). Gigantic reservoir of uninsured or underinsured population, in consort with Just 35 million people having life insurance cover as against 570 million of insurable population is lying dormant. This statistic is expected to swell around 750 million in 2020, is furthermore enticing (Business Standard, 2013, September 20). Heedless of these promising demographics, Indian life insurance industry is confronting choppy growth trends with dampening demand configurations. The situation indicates towards the need of closer introspection, understanding and analysis of demographic profile of determinants impacting life insurance demand. This may provide a useful insight to insurers in devising suitable life insurance marketing mix and thus elevating life insurance demand in the country to instigate its societal and economic growth.

2. Literature Review:

Since long time back researchers recognized the importance of the area concerning factors affecting life insurance demand owing to its contribution in financial development of an economy. So, several country peculiar and cross-country investigations have been conducted from time to time evaluating various social, demographic and economic aspects shaping life insurance consumption.

Mantise and Farmer (1968) revealed that marital status, births, personal disposable income, population size, employment level and relative price index influence life insurance purchase decisions.

Anderson and Nevin (1975) examined life insurance buying behavior among young and newly wedded couples for the period of 1968-1971. Investigations conducted on twenty independent variables revealed that net worth, wife's insurance portfolio before marriage and insurance agent are most influential variables determining purchase of life insurance products.

Burnett and Palmer (1984) scrutinized the influence of certain demographic and psychographic factors on life insurance demand. Among demographic factors education, number of children and income were observed the most significant variables.

Lewis (1989) the study added a new dimension to the array of factors affecting life insurance demand. Empirical findings of the study revealed that the expected utility and risk aversion of the policy's beneficiaries i.e. spouse or offspring's has implications in deriving life insurance consumption.

Truett and Truett (1990) attempted to compare life insurance growth pattern in Mexico and United States during the period 1964 to 1984. Among the demographic variables under analysis age of insured, population size and education level found to have significant bearing on life insurance consumption decisions in both the countries.

Browne and Kim (1993) explored the impact of economic and social components on life insurance demand in the study based on 45 countries, using regression analysis in 1980and 1987. The observations revealed a significant impact of income, social security expenditure by government whereas dependency ratio, education and life expectancy turned out insignificant.

Outreville (1996) on the basis of cross-sectional analysis of 45 developing countries, this study evaluated various social and economic explanatory factors for the period of 1986 among social factors life expectancy at birth was found positive but insignificant. Similarly dependency ratio also turned out non-significant. The study also explored the impact of agricultural and health status of the country on life insurance consumption.

Beck and Webb (2002) conducted a research over 68 countries using panel data for the period of 1961-2000 while incorporating various economic, demographic and institutional factors. In demographic suite the variables education, life expectancy, young dependency ratio, and size of social security system did not indicate any robust influence on the life insurance consumption.

Hwang and Greenford (2005) assessed impact of life insurance demand determinants in China, Hong Kong and Taiwan. Investigations revealed a positive impact of income, education and economic development and negative impact of social structure and one child policy on life insurance consumption whereas; social security expenditure and price remained insignificant.

Li et al. (2007) the study analyzed cross section data of 30 OCED countries during 1993-2000. Conclusions of the study revealed a positive relationship of income, number of dependents, education level, financial development and degree of competition with life insurance demand. On the other hand, life expectancy, expenditure on social security system, inflation and real interest rates accounted for decrease in life insurance consumption across OECD countries.

Sen (2007) investigated economic, social and demographic determinants of life insurance demand of 12 selected Asian economies along with cross checking the validity of these determinants in Indian case for the period 1965-2004. The study explored that most of the determinants regulating the demand for insurance in the cross country analysis fail to justify the Indian scenario. The demographic variables like dependency ratio, life expectancy at birth, urbanization and crude death rate remained significant in cross country analysis whereas only urbanization had some significant relation to the demand proxies in India.

Nesterova (2008) applied scanner on Ukraine and 14 countries of the region, both CEE (Central and Eastern Europe) and CIS (Commonwealth of Independent States) to filter out life insurance demand for the period 1996-2006. Penal results on several economic, demographic and institutional variables revealed education, old dependency ratio and life expectancy positively and significantly impact life insurance consumption. On the other hand urbanization, young dependency ratio could not reflex any significant impact amid demographic factors.

Celik and Kayali (2009) the study examined the determinants of demand for life insurance in cross section analysis of 31 European countries for the period of 2000-2006. The investigations revealed a positive impact of income and population and negative impact of inflation and education level on life insurance consumption.

Mitra and Ghosh (2010) conducted a study on economic and demographic variables to evaluate the Post economic reform era (1991-2008) and its impact on demand of life insurance in Indian conditions. Amongst demographic range of variables urbanization and life expectancy revealed insignificant impact on life insurance demand and education showed a significant impact but with an inverse relation.

Kjosevski (2012) investigated life insurance demand elements of 14 countries in Central and South Eastern Europe (CSEE) for a period of 1998-2010. During the scrutiny of various economic, demographic, social and institutional factors, the study highlighted the positive influence of education and a negative linkage of young dependency ratio on life insurance consumption.

3. Research objective:

The key objective of this study is to screen out the demographic determinants of life insurance demand that can best fit to Indian conditions through their re-examination in present context.

4.Research Methodology:

The study is conducted on a sample size of annual aggregate time series data of 20 years from 1995 to 2014.

4a. Data Sources: The research is developed on descriptive research design reviewing documentary data from secondary sources. The data pertaining to life insurance penetration and density are obtained from various secondary sources like issues of Sigma, a publication from Swiss Re., Sigma explorer, annual reports of IRDA, IRDA Hand Book of Insurance Statistics 2013-14. Demographic data are obtained from World development indicators 2015 released by the World Bank.

4b. Selection of Variables:Definitions and Measurements:

Dependent Variables: To measure the demand for life insurance, life insurance density and life insurance penetration is being used as dependent variables. These variables are internationally recognized by IMF and World Bank to determine the global insurance consumption.

Life Insurance Penetration (LIP): Life insurance penetration is described as the ratio of total life insurance premium volume to GDP. Penetration is the product of price and quantity of insurance policies. It measures the contribution of life insurance sector in the total economy in terms of GDP.

Life Insurance Density (LID): Life insurance density is measured as ratio of gross premium volume to total population in a country. In other words it is per capita life insurance premium of inhabitants of a country.

Although, for calculating both life insurance penetration and life insurance density gross premiums are used, still dissimilarity exists among the two as the penetration reflects life insurance consumption relative to the size of the economy, whilst the density compares life insurance consumption amongst countries without adjusting for income. These dependent variables has been extensively used by numerous researchers like Truett and Truett (1990), Browne and Kim (1993), Outerville (1996), Beck and Web (2003), Hwang and Greenford (2005),Sen (2007), Mitra and Ghosh (2010) to represent the consumption of life insurance in their researches.

Independent Variables: On the basis of literature reviewthe following demographic factors have been selected as explanatory variables impacting life insurance demand in India for the purpose of this study.

Population: Total population data is used for the purpose of this study. It is based on the world development indicators definition of population, which counts all residents regardless of legal status or citizenship -except for refugees not permanently settled in the country of asylum, which are generally considered part of the population of their country of origin.

Urbanization: The ratio of population residing in urban area to total population has been used in this study to measure the impact of urbanization on life insurance demand.

Education: Gross secondary enrollment ratio has been used to proxy for education in the study. It is described by World development indicators as total enrollment in secondary education regardless of age, expressed as percentage of total population.

4c. Model Specification:

On the basis of selected demographic variables for determining life insurance demand the following estimation equation has been developed.

QLID =*fn*[Ubn, Edn, Pop]

Where,

QLID - Quantity of Life Insurance demanded in the market;

Ubn - Urbanization;

Edn - Education;

Pop - Population;

4d. Research hypotheses

$H0_1$: There is no significant relation between Population and life insurance demand.

$H0_2$: There is no significant relation between Education and life insurance demand.

$H0_3$: There is no significant relation between Urbanization and life insurance demand.

4e. Initial Estimation Equations of Life insurance Demand

The present analysis consists of two different regression models as initial estimation equations

represented by two dependent variables to characterize demand for life insurance.

Life Insurance Penetration (premium as a percentage of GDP)

Life Insurance Density (premium per capita USD)

QLID (Penetration) = a + b1* Ubn + b2* Edn + b3* Ln (Pop) + e_1

QLID (Density) = a+ b1* Ubn + b2* Edn + b3* Ln (Pop) + e_2

Where,

a = the intercept

(b1...b3) = slope coefficients

e_1 & e_2 = error term

Ln = natural log

4f. Transformation of Variables:

Variable of level value i.e. population is transformed by taking natural logarithm whereas variables of rate value i.e. education, urbanization, life insurance penetration and life insurance density are not transformed as they are already in the preferred form.

4g. Time Series Graph: In order to have a rough idea about the stationarity nature of variables time series graphs are plotted for each of the variables examined in this study, before pursuing a formal test of stationarity.

The dependent variables, i.e. life insurance penetration and life insurance density presented a volatile tendency during the period 1995-2014. On the other hand the explanatory variables education and its transform (Edn); urbanization and its transform (Ubn) and population tend to exhibit an upward trend throughout the period of investigation.

4h. Testing Unit Root: After graphic visualization, all the time series variables are subject to a statistical test to examine their univariate properties. Augmented Dickey-Fuller (ADF) Unit Root Test is used to detect whether data series are stationary or non-stationary.After conducting ADF unit root test, if variables are found non-stationary, a co-integration study using ADF is also been done to corroborate that the variables are co-integrated before running the regression.

The ADF unit root test results shows that the dependent and independent variables have unit root at their level values at 1%, 5% and 10% significance level i.e. the series are non-stationary. The results of the ADF unit root tests are given in the table below:

Table 1: Summary Results of ADF test:

Variables	H0	ADF Test Stats.	Prob.*	Critical Values			Result
				1%	5%	10%	
QLID (Penetration)	QLID (Penetration) has unit root	-1.24	0.8721	-4.53	-3.67	-3.28	H_0 Accepted
QLID (Density)	QLID (Density) has unit root	-2.87	0.1989	-4.73	-3.76	-3.33	H_0 Accepted
Education	Education has unit root	-2.20	0.4626	-4.53	-3.67	-3.28	H_0 Accepted
Urbanization	Urbanization has unit root	-3.07	0.1428	-4.57	-3.69	-3.29	H_0 Accepted
Population	Population has unit root	-2.29	0.4137	-4.67	-3.73	-3.31	H_0 Accepted
* MacKinnon (1996) one-sided p-values							

From the above table it is clear that the computed ADF test statistics for all the data series are greater than the critical value and hence the null hypothesis for all the data series is accepted, which means all the series have a unit root problem and the series are non-stationary.

Since the series under study is a non-stationary we can't run regression unless the variables of the series are co-integrated. Therefore a co-integration test is conducted using ADF test. Engel and Garner (1987) pointed out that the two or more non-stationary variables can be used in regression if they are co-integrated or linear combination of two or more non-stationary

variables is stationary. Hence after creating linear combination of non-stationary variables, e_1 and e_2 are calculated and stationarity of e_1 and e_2 has been checked by the ADF unit root test, the results are given below -

Table 2: SUMMERY RESULTS OF CO-INTEGRATION TEST

Variables	H0	ADF Test Stats.	Prob*	Critical Values			Result
				1%	5%	10%	
e_1 (Penetration)	e_1 (Penetration) has unit root	-3.38	0.0020	-2.69	-1.96	-1.61	**H_0 Rejected**
e_2 (Density)	e_2(Density) has unit root	-3.17	0.0033	-2.69	-1.96	-1.61	**H_0 Rejected**
* MacKinnon (1996) one-sided p-values							

From the table given above it is observed that the computed ADF test statistics for both e1 and e2 is smaller than the critical values hence H0 is rejected and it is concluded that e1 and e2 does not have unit root problem and the e1 and e2 are stationary and hence non-stationary variables are co-integrated and can be used in OLS regression.

4i. Correlation Test: Correlation test is applied between dependent variables life insurance penetration (% of GDP), life insurance density (premium per capita USD) and independent variables Education, Urbanization and Population. A highly significant positive correlation is found between both the dependent variables and the explanatory variables.

Table 3: SUMMERY RESULTS OF CORRELATIONS

	Life insurance Penetration (% of GDP)	Life insurance Density (premium per capita USD)
Urbanization	0.850 ***	0.936 ***
Education	0.839 ***	0.963 ***
Population	0.865 ***	0.919 ***

*** Level of significance at 1%

4j. Multiple Regressions with OLS Estimation: Multiple regressions is applied between dependent variables (life insurance density and life insurance penetration) and three independent variables viz. education, degree of urbanization and size of population using OLS (Ordinary Least Squares) technique to determine the demographic factors affecting the life insurance demand. Two separate regression models are constructed for the study since life insurance demand is level by two diverse dependent variables that is life insurance penetration and life insurance density

4ji. Model 1:

QLID (Penetration) = a + b1* Ubn + b2* Edn + b3* Ln(Pop) + e1

Dependent Variable: Quantity of Life Insurance Penetration

Independent Variables: Urbanization, Population and Education

Table 4: MODEL SUMMERY

R^2	Adj. R^2	DW- Statistics	F
0.902	0.814	1.51	23.334 (***)

*** Level of significance at 1%

It is observed from the table-4 (Model-1) that, independent variables- Ubn, Edn and Pop collectively explain 90.2% variation in dependent variable (life insurance penetration) along with the adjusted R2 at 81.4%. Hence both the R2 values show that a significant variation in dependent variable is explained by selected independent variables. So, finally the model is found statistically highly significant ($F = 23.334$, $p<0.001$). The DW- statistic is 1.51, which signifies there is no autocorrelation problem in the error terms.

Table 5: Coefficient Summary

Variable	b	SE	β	t	Result
Constant	-616.137	222.005	-	-2.775	*
Urbanization	-1.762	0.839	-2.643	-2.101	NS
Education	0.167	0.076	1.161	2.192	*
Population	73.089	26.804	2.401	2.727	*

Table 5 shows unstandardized and standardized beta coefficients of independent variables with their level of significance. The table shows two independent variables that significantly affecting quantity of life insurance demanded (penetration) are education ($t = 2.192$, $p<0.05$) and population (2.727, $p<0.05$). The coefficient suggests that with unit increase in education the life insurance penetration increases by 0.167 units and with unit increase in population life insurance penetration increases by 73.089 units. Urbanization turned out to be insignificantly affecting life insurance penetration with inverse relationship.

Estimation Equation:

The estimated results of demand function representing life insurance penetration as dependent variable obtained in Table 3 are as follows:

QLID (Penetration) = – 616.137 – 1.762 (Urbanization) + 0.167 (Education) + 73.089 (Population)

4jii. Model 2:

QLID (Density) = a + b1* Ubn + b2* Edn + b3* Ln(Pop) + e2

Dependent Variable: Quantity of Life Insurance Density

Independent Variables: Urbanization, Population and Education

Table 6: Model Summary

R^2	Adj. R^2	DW- Statistics	F
0.966	0.932	1.46	73.33 (***)

*** Level of significance at 1%

It is observed from the table-4 (Model-2) that, independent variables- Ubn, Edn and Pop collectively explain 96.6% variation in dependent variable (life insurance density) along with the adjusted R2 at 93.2%. Hence both the R2 values show that a significant variation in dependent variable is explained by selected independent variables. So, finally the model is found statistically highly significant ($F = 73.33$, $p<0.001$). The DW- statistic is 1.46, which signifies there is no autocorrelation problem in the error terms.

Table 7: Coefficient Summary

Variable	b	SE	β	t	Result
Constant	-2292.148	2083.978	-	-1.100	NS
Urbanization	-6.784	7.876	-0.654	-0.861	NS
Education	2.415	0.717	1.078	3.369	**
Population	263.406	251.611	0.556	0.311	NS

Table 7 shows unstandardized and standardized beta coefficients of independent variables with their level of significance. The table shows sole independent variable that significantly affects quantity of life insurance demanded (density) is education ($t = 3.369$, $p<0.01$). The coefficient suggests that with unit increase in education the life insurance density increases by 2.415 units. However, urbanization and population both turn out to be insignificantly affecting life insurance density.

Estimation Equation:

The estimated results of demand function representing life insurance density as dependent variable obtained in Table 5 are as follows:

QLID (Density) = –2292.15 – 6.784 (Urbanization) + 2.415 (Education) + 263.41 (Population)

5. ResearchFindings:

Statistical Investigations of the ongoing research verify a positive significant relation between life insurance consumption and education level in the country in both regression models. Increased level of education results in enhancing both life insurance penetration and density levels of life insurance. The findings are in line with Mantis and Farmer (1968), Burnett and Palmer (1984),Truett and Truett (1990), Browne and Kim (1993),Outreville(1990 and 1996), Ward and Zurbruegg (2002), Beck and Webb (2003), Hwang and Gao (2003); Hwang and Greenford (2005); Li et al. (2007), Nesterova (2008),Kjosevski (2012). However, the results are in contradiction with the findings of Anderson and Nevin (1975), Celik and Kayali(2009), Mitra and Ghosh(2010). All of them found negative alignment between education and life insurance demand. So, the estimated outcomes of the study support the alternate hypothesis that education

is significantly and positively linked to demand for life insurance in India. Therefore, the null hypothesis that there is no statistical significantrelationship between education and demand for life insurance can be rejected.

Although, population is positively related to life insurance consumption in the study of Mantis andFarmer (1968), Outreville (1996), Hwang and Greenford (2005), but in the present study variable population showed divergent results in both of the models. It indicates significant and positive variation in life insurance demand in model 1 representing Life Insurance Penetration whereas, it turned out insignificant in model 2 describingLife Insurance Density. So, Due to variance in results, findings remain inconclusive regardingpopulation todeterminatelife insurance demand.

Furthermore, the research findingsdivulge insignificantfunction of urbanization in elevating life insurance penetration and density levels leading to acceptance of null hypothesis of the study H03; that there is no significant relation between Urbanization and life insurance demand.Statistical outcomes are inconsistent withmost of the empirical papersSzablicki (2002), Hwang and Gao (2003), Esho et al. (2004),Hwang and Greenford (2005), Sen (2008), Chen, Lee and Lee (2011),Park and Lemaire (2011); they all find a positive impact of expanding urbanization on life insurance demand. But results are consistent with Beck & Webb (2003), whose findings could not discover a significant role of urbanization to excel life insurance penetration in its cross-country and Panel Analysis.Consequently, the null hypothesis of the studyH03; that there is no significant relation between Urbanization and life insurance demand is accepted.

7. Suggestions:

The major outcome of the study is positive association of education with life insurance demand. Improving education level creates a positive attitude among masses in appreciating the value of life protection products and leads to greater degree of risk aversion. Government can accelerate the impact of this factor by adding financial and insurance literacy in the curriculum at school level and thereby this may support in realizing the most cherished mission of Modi government 'Jan Dhan Se Jan Suraksha' (financial inclusion to insurance inclusion). Furthernegativeand insignificant affiliation between urbanization and life insurance consumption may be due to diversion of funds in alternate financial planning instruments by urbanites of the country. This raises an alarm to the industry players in devising suitable marketing policies and strategies in luring urban population to capture their demand potential. Above and beyond, there is need to focus on capturing unmet demand potential in rural and informal segments, which are largely virgin to life insurance.

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Cyber Scavenging: A Grave Threat to Financial Sector

■ **Dr Hitesh Keserwani,** Assistant Professor, Amity Business School, Amity University, Lucknow

Abstract

The financial sector is facing the highest number of organized cyber attacks and multi-channel threats. According to the latest Threat Metrix Cybercrime Report (2015) more than 15 billion transactions in the past 12 months revealed a 40% increase in cyber criminal activity targeting the financial sector. A record 21 million fraud attacks and 45 million bot attacks were detected in the last three months of 2015. The ease of online banking and transactions has brought a significant rise in malicious attacks and these cyber-attacks continue to hit financial institutions. Consequently, these institutions suffer a loss of brand image, customer faith and regulatory issues etc. A report by Arbor Networks reveals that 2013 witnessed a huge rise in cyber-attacks in the banking and financial service sector. In India the attack against financial institutions and government organizations are registered as 34% and 43% respectively in 2013. In 2014, cyber thefts and attacks increased by 15% and 19% respectively, the report revealed. Another survey conducted by The Depository Trust & Clearing Corporation (DTCC, 2014) states that twenty-four per-cent of respondents, which comprised of broker-dealers, banks, mutual funds, insurers and hedge funds, said cyber-threats were the biggest risk for the broader economy, while 23% said it was the largest risk to their firm. With a growing percentage of risks and loss to financial institutions, companies of all sizes need to re-examine, re-think and possibly re-architect their security posture. Therefore there is a great desire to stay ahead of the accelerating cyber-crime and need to proactively comply with evolving government regulation. The study critically examines the existing infrastructure and techniques used by these financial institutions and suggests them a robust framework to mitigate the evolving challenges and also a control mechanism to reduce the increasing percentage of cyber threat year after year.

Keywords: financial institution, economy, cyber threat, criminals, regulations.

Introduction

Internet banking enables customers to save time, take control of their personal finances and even help the environment by opting to receive electronic statements. For Internet banking users,

online banking services are the most important driver of financial institution selection, falling just behind rates/fees and customer service. These days, it's not good enough to simply offer online banking services, however. To maintain existing customers and attract new ones, financial institutions need to keep their offerings up to date with the latest features. Who are these customers? In a nutshell, they are younger, wealthier and more desirable than the average banking customer. Financial institutions must ensure the capabilities of their Internet Banking Solution that can proficiently deliver on these customer needs, especially as younger customers gain more and more financial responsibility. Online banking doesn't just appeal to the young consumers; it appeals to the more educated and affluent segments of the population as well. Non-online bankers value a personal relationship with their financial institution, and they place high importance on service offerings that can be expensive which further motivates the customer to turn into online banking platform.

The Indispensible Internet Banking

For financial institutions, Internet banking offers a myriad of direct benefits. Online bankers conduct transactions faster and more easily with 24/7 self-service applications. This not only makes the institution more valuable to customers and also reduces operational costs in terms of time and money. For instance, a face-to-face transaction with a teller costs financial institutions considerably more manual labor and paper, than an online transaction. Internet banking further reduces costs by decreasing lobby traffic, cost savings customer phone calls and the need to print and mail paper statements. With a fully integrated Internet Banking Solution, financial institutions can optimize internal systems and processes, provide a comprehensive view of financial activity for users and easily integrate additional capabilities. By reinforcing the online offerings with quality service and support, financial institutions can further improve customer relationships and benefit from an increase in overall profitability. While nearly every online banking solution offers some functionality to enhance convenience, control and cost savings, there are a number of key features customers seek that many older systems do not offer. Filling those gaps is critical to financial institutions looking to remain competitive.

Customers are looking for added functionality in multiple areas however several system enhancements are desirable to increase customer control over their finances via online banking. One major example is the ability to conduct inter-institution money transfers. Financial institutions have enhanced transfer functionality with cross-institution aggregation, enabling customers to consolidate their financial information and more efficiently manage funds.

Customers increasingly want to tailor their online banking experience for simplicity and control, and an important enabler is the ability to set up e-mail alerts. With the latest Internet

Banking Solutions, online customers can sign up for billing e-mail alerts that automatically inform them when a payment is due or has been made. Additionally, customers can set up alerts to notify them of activities like money transfers, deposits, balance falling below a predetermined level, changes to personal information or any unusual transaction.

To further meet demands for enhanced account management, financial institutions can give customers more control over their finances with a solution that integrates personal financial management (PFM) capabilities. Effective PFM delivers the features that customers find most valuable for managing their funds.

Internet Banking Solution: Customized for Customers

With the right Internet Banking Solution, financial institutions can alleviate the limitations and challenges they are experiencing with their current system. In effect, the institution can save significant time and money, while greatly reducing the risk of losing valuable customers due to an inadequate solution. For many small- and mid-sized financial institutions, an outsourced solution makes the most sense. Excellent, ready-made options are available to enable these institutions to offer the functionality their customers demand without expensive internal development and ongoing maintenance requirements. An outsourced solution not only reduces costs, but also increases flexibility and security.

The first criterion when researching an outsourced solution should be high availability of resources. An optimal solution will also include a call center for account holders to easily contact with questions or concerns. While most Internet banking providers expect financial institutions to take their own calls, some providers offer post-conversion, 24/7 customer support directly to the institution's customers. Financial institutions typically choose the duration that the provider operates this call center, which may be as brief as six months.

Features and functionality are the next most important decision criteria. Before selecting a provider, the financial institution should have a solid understanding of their "must have" functionality. Assessing vendors based on the breadth of their offerings is critical. It's not enough to simply check off the specific features that are being sought. Financial institutions need to understand a potential vendor's recent product enhancements, as well as their product roadmap. Financial institutions must be sure to select a partner that will move them forward as customer needs and technology evolves.

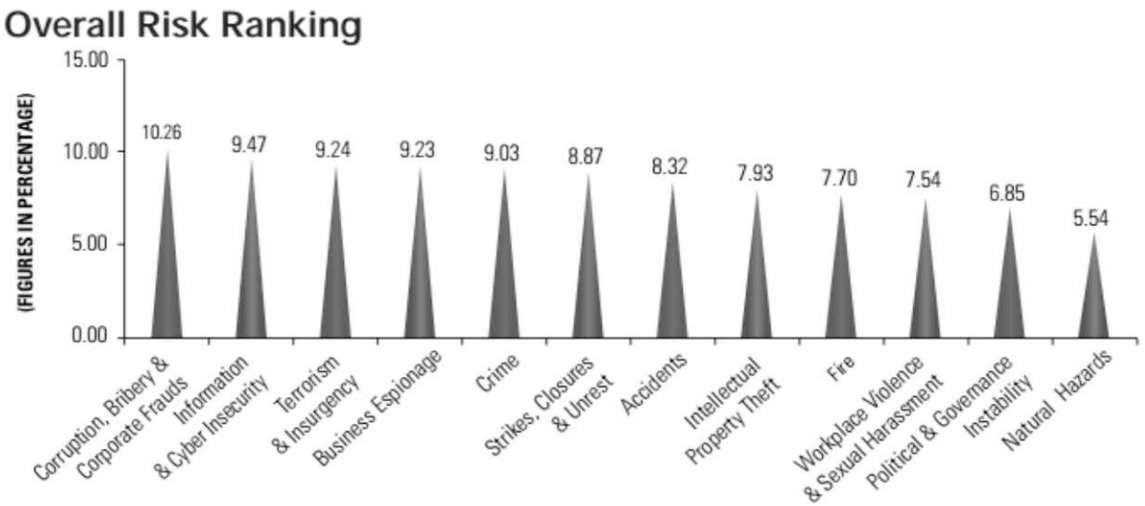
Technology: The biggest boon for Financial Sector

In financial domain, technology is no longer an enabler, but a business driver. In last decade phenomenal growth of IT, mobile penetration and communication network has facilitated

growth in extending financial services to masses. Technology has facilitated delivery of banking services to masses and changed the way of functioning of financial institutions. Technology made banking services affordable and accessible by optimizing the way these institutions operate today. Regulatory bodies, banks and other institutions/agencies have taken paradigm shift in areas of respective operations, service delivery and consumer satisfaction. Financial institutions gained efficiency, outreach, spread through technology in last two decades.

The benefits of technology such as scale, speed and low error rate are also reflecting in the performance, productivity and profitability of banks, which have improved tremendously in the past decade. Technology initiatives are taken by banks in the areas of financial inclusion, mobile banking, electronic payments, IT implementation and management, managing IT risk, internal effectiveness, CRM initiatives and business innovation.

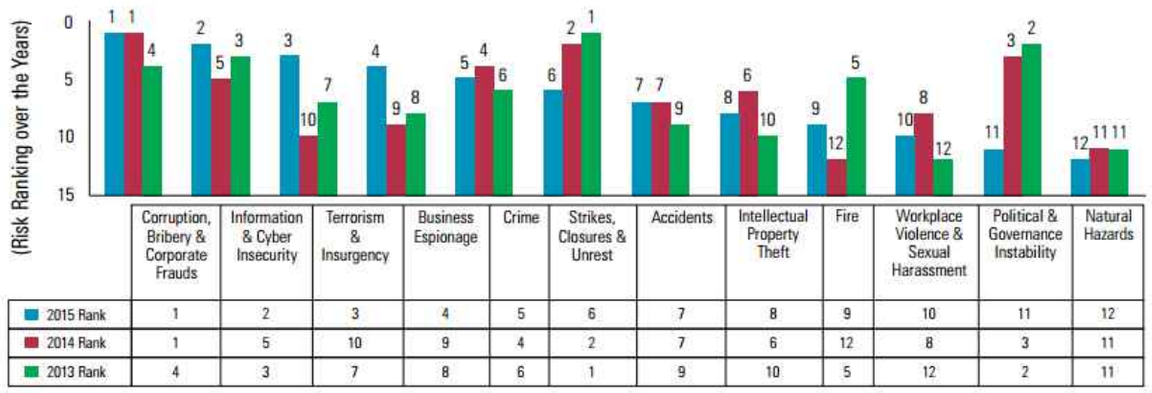
FIGURE1. OVERALL RANKING OF RISK IN INDIA



Source: India Risk Survey 2015

- The figure 1 India Risk Survey 2015 (IRS 2015) attempts to showcase the views and perceptions of key business leaders, public figures, as well as professionals across various sectors and geographies regarding operational, safety and strategic risks. Information security is a growing concern with increasing technological advancements and the tendency of corporate houses to create more and more intellectual property and competitive strategies any compromise with the network would be providing an opportunity for frauds and the corporate to stand at risk which in turn will incur unimaginable losses.

Figure2. Overall risk ranking – Yearly Trends



Source: India Risk Survey 2015

The figure 2 clearly states that information and cyber insecurity is on rise in India and stands in second position after third in 2013 and fifth in 2014 which is alarming and biggest hurdle in the development of the country because in this digital age, where online communication has become the norm, internet users, governments and organizations face increased risks of becoming the targets of cyber-attacks. As cyber criminals continue to develop and advance their techniques, they are also shifting their targets — focusing less on theft of financial information and more on business espionage and accessing business information. To fight fast-spreading cyber-crime, sector must collaborate globally to develop an effective model that will control the threat.

Increasing Cyber threat: A grave challenge for Financial Institutions

Financial-services organization provides specialized, private banking products and services to its customers. Its services cover property, investments, capital markets and asset management. Their customer base is its biggest asset, and offering strong protection to these customers is of paramount importance – both to retain and grow business, and to protect its reputation for high-quality service. Companies in financial domain have experienced increase in instances of cybercrime in past few years. Various levels of cyber-crime threats are at each level of IT systems. The emergence of such threats at different levels is due to an explosion of online

banking and shopping, coupled with the increasing willingness of consumers to disclose personal information over the internet. Hackers are now enabling a larger market of 'script-junkies' whose deficient skills would otherwise shut them out of the cyber-criminal enterprise.

According to the report (Symantec Cyber Crime Report, 2011) the survey conducted under the report highlights the issues of primary importance as no national government operates an effective compilation service to identify trends in cyber-crime with the exception of the Internet Crime Complaint Center (IC3). Most cyber-crime is on such a small scale that law enforcement organizations are not interested in dealing with individual cases, and, in many cases, individuals may not care enough about the amounts involved to take action. Therefore it tends to go unreported.

Indian Scenario

USD 4 billion is the total loss of cash in 12 months

USD 3.6 billion is the total loss of time for victims of cyber crime

On an average 15 days were spent by victims to satisfactorily resolve hassles of cyber-crime.

Threat

Among all cybercrime victims surveyed 80 percent were from emerging markets, compared to 64 percent in developed markets.

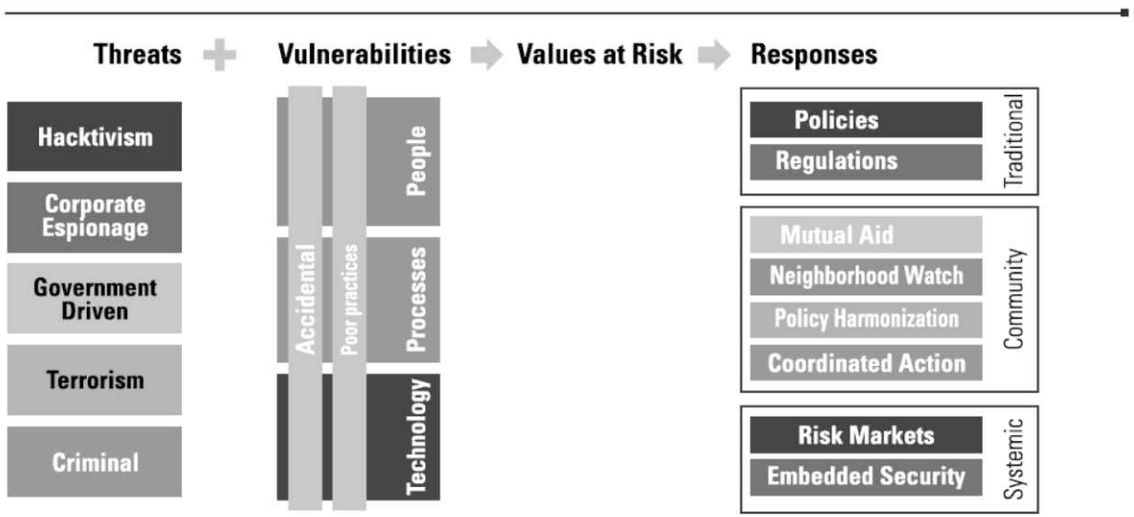
Only 21percent of victims reported cybercrime to the police

59 percent of victims who'd suffered both online and offline crime felt there were fewer ways to get help after the cybercrime

In India, 59 percent of mobile phone owners access internet via mobile device out of which 17 percent experienced mobile related cyber-crime.

According to the (World Economic Forum Report: Global Risks 2012) Vendors of online security products have an interest in talking up the threats of cybercrime, while victims of cybercrime often have an interest in remaining silent. It is therefore very difficult for firms and organizations to get a clear picture of the true levels of the risk and needs for investment. Correcting such information asymmetries should be at the centre of policies to improve global cyber security and to ensure an efficient market. Firms have an incentive to invest in cyber security measures that protect their own interests, rather than in those measures that contribute to the health of the overarching critical information infrastructure. Innovative multi stakeholder collaboration will be required to tip the balance towards investment in creating systemic resilience.

Figure 3: Framework of Cyber threats in Indian Financial Institutions



Source: World Economic Forum Report-Global Risks 2012 Seventh-edition

- The Figure 3 clearly states that Cyber-crime has spawned many entrepreneurs, though of dubious repute. They have given rise to new criminal hacking enterprises aimed not at committing fraud but at providing services to help others commit fraud. This operation enables people to commit crime vicariously, i.e. without any direct perpetration.

Another model is to create a subscription based identity theft service rather than stealing personal credentials themselves cyber criminals have hacked into PCs and then charged clients for a limited period of unfettered access. As is the case with most business services, customers willing to pay extra can obtain premium services such as a complete 'clean-up' of the stolen data, i.e. getting rid of low-value information and assistance with indexation and tagging of data, etc. New skills, technologies and investigative techniques, applied in a global context, are required to detect, prevent and respond to cyber-crime. This is not just about the realignment of existing effort. This 'new business' will be characterized by new forms of crime, a far broader scope and scale of offence and victimization, the need to respond in a much more timely way, and challenging technical and legal complexities. Innovative responses such as the creation of 'cyber-cops' ,'cyber-courts' and 'cyber-judges' may eventually be required to overcome the significant jurisdictional issues that law and order agencies are currently facing. Law enforcement with regard to investigating crimes and handling evidence, dealing with offenders, and assisting victims, poses complex new challenges. There is an unprecedented need for

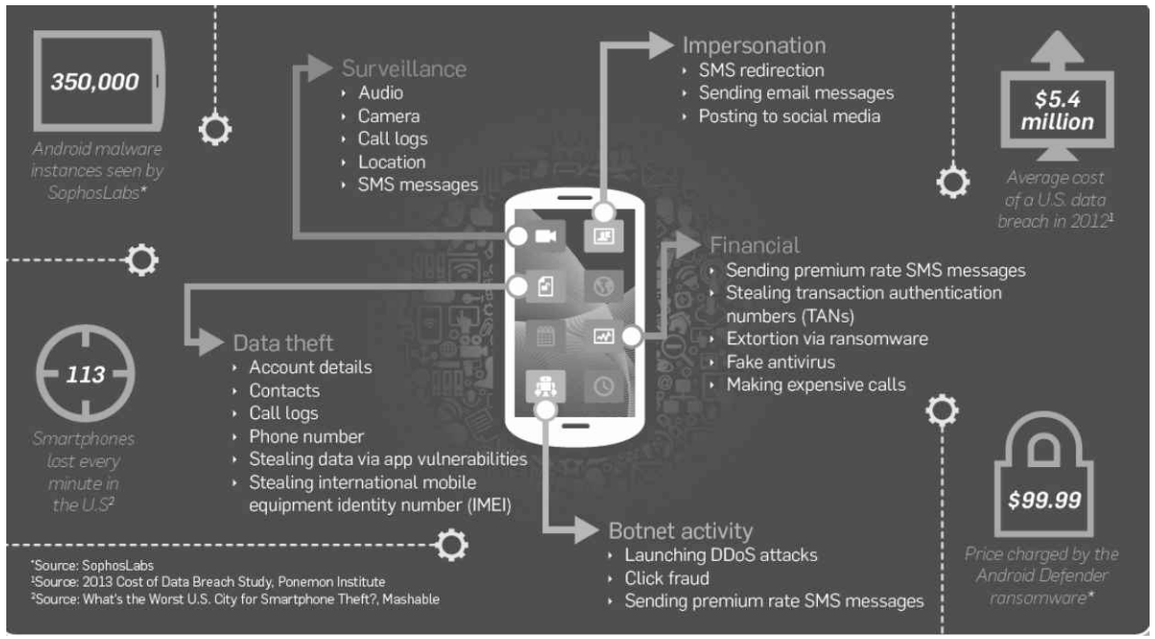
international commitment, coordination and cooperation since cyber-crime is truly a global phenomenon. It is also important to have a better understanding about the nature of the problem and to address the issue of significant under-reporting of this dangerous phenomenon. Prevention and partnerships will be essential to fight cyber-crime.

Cyber security is on top priority list of various financial organizations, regulators and governments. Cyber-attacks ranked fourth in top global risks in terms of likelihood in World Economic Forum Report: Global Risks 2012.

Smart phone usage: An additional Treat

With the increasing usage of mobile in financial services Your Android smartphone may become dangerous when compromised by malware, it can illegally watch and impersonate you, participate in dangerous botnet activities, capture your personal data, and even steal your money.

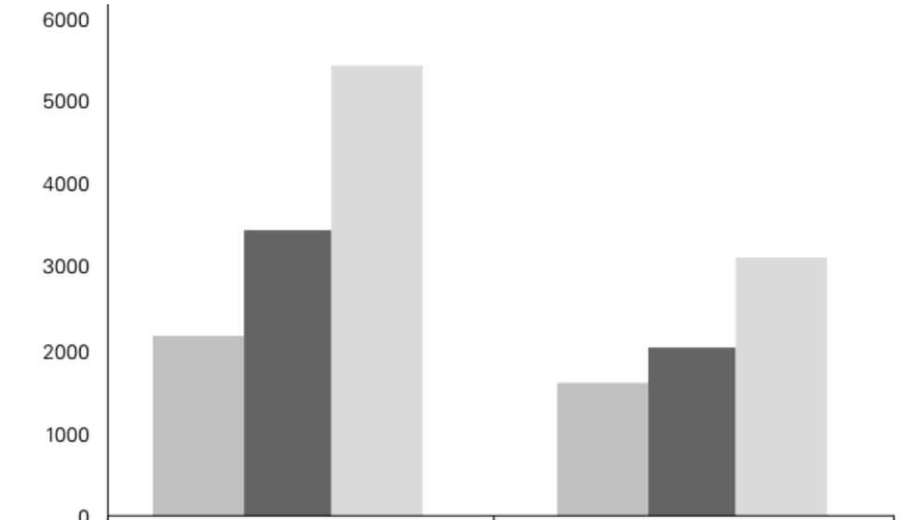
Figure 4: Smart phone usage and rising risk



Source: 2013 cost of Data Breach Study, Ponemon Institute

The Figure 4 states that Majority of the banks in India have migrated to online and mobile banking. Most of the transactions are conducted via payment cards, debit and credit cards, and electronic channels such as ATMs. Consequently, both private and public banks, as well as financial institutions in India are becoming increasingly vulnerable to sophisticated cyber-attacks. As per the Internet Security Threat Report 2014 by Symantec global survey of end-users, 38 per cent of mobile users had already experienced mobile cyber crime.

Figure 5: IT Crimes registered in India under IT Act (2008) and IPC



	Cases Registered	Persons Arrested
2011	2171	1592
2012	3405	2004
2013	5370	3074

Source: 2013 NCRB Report, India risk survey 2015.

As per the NCRB 2013 Report a total of 5,370 cases were registered under the IT Act and IPC during 2013 as compared to 3,405 cases during the previous year (2012), thus showing an increase of 57.7 per cent in 2013 over 2012. As per available data, India ranks 3rd after the USA and Japan when accounted for the risk of being affected by online banking malware, with majority of the instances being attributed to phishing and debit / credit card frauds.

According to Fifty-second report standing committee on Information technology (2013-14) the total number of websites defaced/hacked during the last five years:-

Table 1: Number of Indian and worldwide websites hacked

Numbers of Indian and world-wide websites defaced / hacked		2008	2009	2010	2011	2012	2013 (upto February)
World wide	Websites defaced/hacked	517459	544409	1419202	1612728	1274162	Data not yet available
	Government/ Strategic Organisations' websites defaced/hacked	9606	11929	16875	Data not available	Data not yet available	Data not yet available
India	Websites defaced/hacked	6310	12161	20701	21699	27605	3911*
	Government websites defaced/hacked	90	201	303	308	371	40*

* *Upto June 2013 the no. of total Websites defaced/hacked was 12693, of which Government websites are 78 and other 12615*

Source: Fifty-second report standing committee on Information technology (2013-14).

Cyber criminals are forming private, trusted, and organized groups to conduct cyber-crime. The adoption of specialized skill sets and professionalized business practices by these criminals is steadily increasing the complexity of cyber-crime by providing actors of all technical abilities with the necessary tools and resources to conduct cyber-crime. Not only are criminals advancing their abilities to attack a system remotely, but they are becoming adept at tricking victims into compromising their own systems. Once a system is compromised, cyber criminals will use their accesses to obtain PII, which includes online banking/brokerage account credentials and credit card numbers of individuals and businesses that can be used for financial gain. As cyber-crime groups increasingly recruit experienced actors and pool resources and knowledge, they advance their ability to be successful in crimes against more profitable targets and will learn the skills necessary to evade the security industry and law enforcement.

The potential economic consequences are severe. The sting of a cyber-crime is not felt equally across the board. A small company may not be able to survive even one significant cyber-attack. On the other hand, companies may not even realize that they have been victimized by cyber criminals until weeks, maybe even months later. Victim companies range in size and industry.

Often, business groups are unable to recoup their losses, and it may be impossible to estimate their damage. Many companies prefer not to disclose that their systems have been

compromised, so they absorb the loss, making it impossible to accurately calculate damages.

The Fifty-second report standing committee on Information technology (2013-14) discusses about financial loss to the country due to cyber-attack/fraud in last five years, according to Reserve Bank of India (RBI), the number of fraud cases as reported by Banks on account of ATM Debit Cards / Credit Cards / Internet have decreased from 15018 (in 2010) to 8322 (in 2012). However, the amount involved had increased from Rs. 40.48 crore in the year 2010 to Rs. 52.66 crore in the year 2012. Central Bureau of Investigation (CBI) has also registered cases pertaining to financial frauds under the provisions of Information Technology Act 2000 along with other Acts which are as follows:-

Table 2: Financial loss to the country from 2010 to 2012

Year	No. of Cases	Amount Involved in Crore (Rs. In crore)
2010	6	6.42
2011	10	12.43
2012	8	28.79

Source: KPMG India Fraud Survey 2012.

According to KPMG India Fraud Survey 2012 financial services as being the most vulnerable to fraud, whether it is known frauds such as bribery and corruption, or emerging frauds that are technology dependent such as internet banking and mobile banking frauds. Financial sector frauds are becoming complex, their incidence geographically wide spread – many a time perpetrators of internet based frauds and data theft are outside the jurisdictions where fraud is committed – and the quantum of fraud rising.

With greater technology integration in the financial services sector, there are greater challenges. New service delivery platforms like mobile and social media are becoming interfaces between financial institutions and customers, revolutionizing the way financial services are delivered. However, with these new platforms comes the challenge of providing a secure environment for customers to conduct transactions. Hostile software programs or malware attacks, risks of phishing, Vishing (voicemail), SMSishing (text messages), Whaling (targeted phishing on High Networth Individuals) and theft of confidential data are all real threats if a secure environment is not established. Additionally, money laundering and terrorist financing (ML/TF), and tax evasion are also issues plaguing the financial services sector.

Financial Regulations: Steps in mitigating evolving threat to Indian financial institution

- Recent FATF34 recommendations indicate that Indian firms would have to set up a comprehensive framework for compliance that includes identification of beneficial ownership and key influencers for an entity. This will also increase the levels of monitoring, diligence and remediation activities carried out by the sector.
- Other regulations like the Dodd-Frank Act which prohibits banking entities from any transaction or activity that may involve or result in a material conflict of interest for banking entities, or Foreign Account Tax Compliance Act (FATCA) that prevent offshore tax evasions by US citizens with extra-territorial jurisdiction, are being enforced, which will impact Indian financial institutions even as they grapple to understand these laws.
- From a regulatory perspective, Indian regulators such as RBI, IRDA and SEBI have been tightening scrutiny and increasing enforcement. In recent years 46 banks being fined for non-compliance to AML requirements and insurance companies were being fined by IRDA for violation of norms relating to payment of commissions to corporate agents and brokers. SEBI has also set up a Forensic Accounting Cell to investigate potential market manipulation issues. This detailed scrutiny is expected to continue and one can see higher number of sanctions and hefty fines for non-compliance.

International best practices: Suggestive measures for financial institutions to mitigate the increasing risks

- Conducting yearly risk assessments to identify potential fraud risk prone areas and developing specialized financial crime prevention skills to deter frauds. This should consider global compliance requirements also.
- Employees should be trained and equipped with relevant skills and knowledge about recent fraud modus operandi. They must also be informed of whistleblower channels available to them to report any instances of fraud, misconduct and non-compliance.
- Monitoring channels like social media to gather intelligence and act on early warning signs
- Building an effective Know Your Customer (KYC) framework to prevent any abuse of customer rights and fraudulent transactions.

Financial Fraud Management: Future Trends

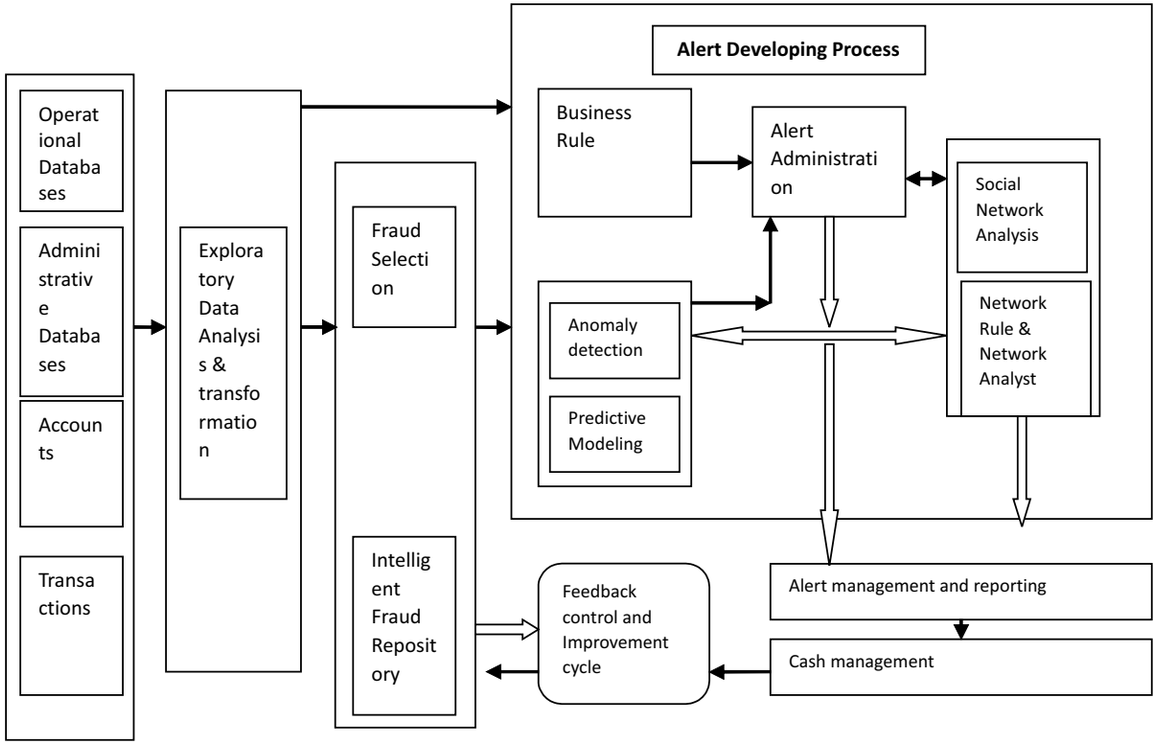
To more effectively prevent future losses, fraud management systems will have to become self-learning, and adaptable to a dynamic environment and evolving fraud techniques. Financial

institutions already can seamlessly test the effectiveness of fraud-detection rules and models – and update them when test reports indicate the need. Ideally though, the system would automatically capture the outcomes of investigations and reuse those outcomes in future scoring. Models would thereby adapt readily to new knowledge and continually be refined. Auto-generated network diagrams would enable strategists to see patterns and symptoms that lead to improved controls and new monitoring techniques.

This combination of adaptation and visibility would enable financial institutions to better understand emerging threats so they can take action to prevent substantial losses before they happen.

The prospects for the future also extend beyond the scope of any single enterprise. As more organizations adopt integrated, automated fraud management systems, the potential is there to create a broad consortium of financial institutions that can draw on their collective experiences to improve fraud detection across the industry.

Figure 6. Indian financial Institutions: A Proposed Framework to mitigate evolving online threats



The above framework would help the Indian financial institutions to mitigate the online risk with the help of analytical modeling tools and specialized databases. Data gathered from the operational databases are updated to OLAP (Online analytical Processing system) which further facilitate the financial institution to perform mining to their specialized databases and identify the hidden patterns of fraudulent acts that helps them to device a methodology in order to control the suspicious or fake transactions by alert system. Also with the integrated system and high end data analytics, predictive modeling will become much easier which would definitely be a great help in risk estimation and forecasting.

Conclusion

In the current technological environment, there are numerous threats to private sector networks, and the current Internet environment can make it extremely difficult to determine attribution.

Regulatory bodies and financial institutions are optimistic by strengthening relationships with both domestic and international counterparts; the RBI will continue to succeed in identifying and neutralizing cyber criminals, thereby protecting Indian businesses and critical infrastructure from grave harm.

To bolster the efforts in minimizing security risks, it is important that private institutions to continue to share information with government agencies with applicable laws and policies and also continue to engage in strategy discussions with other government agencies and the private sector to ensure that Indian ingenuity will lead to new solutions and better security. Another important aspect is to continue to build a skilled workforce to operate in this challenging environment.

It is therefore the effort should be made in the collaboration with RBI and Security agencies as a whole to determine a successful course forward for the nation that allows us to reap the positive economic and social benefits of the Internet while minimizing the risk posed by those who would use it for nefarious purposes.

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CSR Spending of Indian CPSEs: DPE Guidelines on CSR vs. Companies Act, 2013

- **DR. HARPREET KAUR** Assistant Professor, Department of Distance Education, Punjabi University, Patiala - Punjab
- **JATIN GOYAL,** Research Scholar, University School of Applied Management, Punjabi University, Patiala - Punjab (India)

Abstract:

Most of the companies in India have put Corporate Social Responsibility (CSR) high on their agenda in fulfilling their CSR vision and achieving the objectives of carrying out various activities towards the sustainable development of the society. The concept of CSR has gained much importance for Central Public Sector Enterprises (CPSEs) because the establishment of CPSEs was focused around the balanced social and economic development of the country. Earlier, the CPSEs were following guidelines and directives on CSR and sustainability issued by the Department of Public Enterprises (DPE), revised w.e.f. 1st April 2013. However, w.e.f. 1st April, 2014, these guidelines are now superseded by Section 135 of the Companies Act, 2013, which are now applicable to all the companies including CPSEs. In this setting, this study attempts to examine the difference in CSR spending of CPSEs under DPE guidelines and Section 135 of Companies Act, 2013 in three categories of CPSEs viz. Maharatna, Navratna & Miniratna. The study is based on the secondary data collected from the annual reports of 51 CPSEs from 2011-12 to 2013-14 and paired 't-test' is used to check whether there exists a significant difference in CSR spending of CPSEs under DPE guidelines and Section 135 of Companies Act, 2013.

Key Words: *Corporate Social Responsibility; Companies Act, 2013; Section 135; DPE Guidelines on CSR and Sustainability; CPSEs; Maharatna Companies; Navratna Companies; Miniratna Companies.*

INTRODUCTION

"Corporate Social Responsibility is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large."

- World Business Council for Sustainable Development

The Corporate Social Responsibility (CSR) is a process by which the managers of an organization think about and develop their relationships with stakeholders for the common good and show their loyalty towards the sustainable economic development. Besides, it's a company's commitment to its stakeholders to conduct business in an economically, environmentally and socially sustainable manner that is transparent and ethical. The concept of CSR has gained a great deal of importance throughout the corporate world in the last two decades and even the general public is now becoming aware of it. In fact, CSR is a way of conducting business through which socially responsible companies do not limit themselves to utilizing the scarce resources for generating and increasing their profit, rather they use CSR to integrate the environmental, economic and the other social objectives of the civilization with the company's vision and growth.

The India, the concept of CSR is not new. There is a strong tradition of Indian merchants to help and support the society through different philanthropic activities like setting up of temples for religious cause, providing food and money to poor and donating for a social cause etc. After industrial revolution, especially with the emergence of corporate sector, the social accountability and active involvement of companies in sustainable economic development has significantly increased. Globalization and neo-liberalization further boosted the CSR beyond statutory requirements.

In India, the beginning of CPSEs was started to show their humane face apart from their core business activities. The government has defined minimum standards for social responsive behavior of Central Public Sector Enterprises (CPSEs) since 2010, when the first guidelines on CSR were issued by Director of the Ministry of Heavy Industries and Public Enterprises. Government directives also helped CPSEs to grow with economic and social aspect of the country.

Earlier, the CPSEs were following guidelines and directives on CSR and sustainability issued by the Department of Public Enterprises (DPE), revised w.e.f. 1st April 2013. However, w.e.f. 1st April, 2014, these guidelines are now superseded by Section 135 of the Companies Act, 2013, which are now applicable to all the companies including CPSEs. In this setting, this study attempts to recognize the major differences between DPE guidelines on CSR and Section 135 of Companies Act, 2013 and to examine the difference in CSR spending of CPSEs under DPE guidelines and Section 135 of Companies Act, 2013 in three categories of CPSEs viz. Maharatna, Navratna & Miniratna.

REVIEW OF LITERATURE

Gahlot (2013) gauged the changes in CSR scenario after the introduction of Companies Act, 2013 and analyzed the industry's reaction to the mandate. The researcher concluded that Section 135 of Companies Act, 2013 would go a long way in strengthening the social initiatives taken up by the companies. He contended that India would succeed in discharging its social responsibility in an effective and efficient manner if the law is followed in its true spirit.

Suprava (2014) attempted to analyze the behavior and attitude of Maharatna companies towards the various aspects of CSR. The researcher was of the view that in order to make CSR more robust and useful in achieving its goal of sustainable development, the companies should go beyond 2% mandatory contribution for the betterment of the society and sustainability of the business.

Mukherjee & Bordoloi (2014) tried to study the CSR activities of two CPSEs viz. North Eastern Electric Power Corporation Limited and National Hydroelectric Power Corporation Limited in light of CSR guidelines issued to CPSEs by Department of Public Enterprises (DPE). The researchers had found that the CPSEs tend to implement the CSR regulations but they tend to spend only minimum regulated amount. It was comprehended that there is a need to have true commitment on the part of CPSEs for the achievement of their social objectives.

Wankhade (2014) examined the CSR spending and transparency score of Indian companies under Companies Act, 2013. The results indicated that the CSR spending of Indian Companies was not equal to 2% of the profits as per Section 135 of Companies Act, 2013. Further, it was also found that the difference in the CSR spending and transparency score of public sector companies and private sector companies was not significant.

Gupta & Arora (2014) described the existing practices of CSR in CPSEs of India and found that CPSEs were doing very good regarding CSR activity. However, they were involved more or less in same kind of CSR activities. The researchers were of the view that mandatory CSR spending under Section 135 of Companies Act, 2013 is a very good step towards the sustainable development and sound corporate governance.

Gupta & Patel (2014) discussed the background of CSR at world and India level and critically evaluated the provisions of Companies Act, 2013 regarding CSR. The researchers had found that the new mandate will not affect the companies which are already involved in CSR activities. However, it will awake the companies which are not doing CSR activity at all or are doing at the minimal level.

Soni, Mishra, Agrawal, & Mitra (2014) studied the CSR initiatives being taken up by Indian Maharatna companies in the field of environment management. It was found that CSR actions

have positive impact not only on development of community but also on their business. The researchers concluded that CSR is an important business issue of Indian companies irrespective of their size, sector and business goals.

OBJECTIVES OF THE STUDY:

The following objectives are sketched out for the purpose of this study:

1. To recognize the major differences between DPE guidelines on CSR and Section 135 of Companies Act, 2013.
2. To examine the difference in CSR spending of CPSEs under DPE guidelines and Section 135 of Companies Act, 2013.

RESEARCH METHODOLOGY

A. Data Sources and Type:

The study is based upon the secondary data which is obtained from the audited financial statements of the selected CPSEs accessible through their respective websites & other sources of internet.

B. Period of the Study:

As per Section 135 of Companies Act, 2013, the amount spent on CSR activities is based on the preceding 3 financial years' average profits. Since the first reporting period commences from financial year 2014-15, the period of the study is 3 years commencing from 2011-12 to 2013-14.

C. Sampling Units:

In India, the CPSEs are classified into three categories viz. Maharatna, Navratna & Miniratna (Category-I & II) companies based on the autonomy and delegated higher powers to the Board of Directors of CPSEs by the Central Government. As per the last available updated information (as on 26th October, 2014), 7 Maharatna companies, 17 Navratna companies & 72 Miniratna (Category I & II) companies were existent in the country. For analyzing the CSR spending of CPSEs, a sample of 51 companies have been collected from the population keeping in view the availability of data and regularity of profits. Companies which sustained regular losses are left out of the analysis. The final sample consists of 7 Maharatna companies, 15 Navratna companies & 29 Miniratna companies belonging to Category-I.

D. Statistical Tools Used:

The data is analyzed through averages and percentages & paired 't-test' is used to test the hypotheses of the study.

CLASSIFICATION OF CPSEs

The Survey of CPSEs brought out every year by the Department of Public Enterprises (DPE), classifies and ranks CPSEs under various heads. In India, the CPSEs are classified into three categories viz. Maharatna, Navratna & Miniratna (Category-I & II) based on the autonomy and delegated higher powers to the Board of Directors of CPSEs by the Central Government. The "Ratna" status entitles the Board of Directors of CPSEs to perform investments without seeking government permission up to a certain limit. The following are the various parameters on which the DPE grants the status of Maharatna, Navratna and Miniratna to CPSEs.

Maharatna	Navratna	Miniratna Category- I	Miniratna Category- II
1. In order to qualify as a Maharatna, a company during the last 3 years must have: a) Average annual net profit of over Rs. 2500 crore, or b) Average annual Net worth of Rs. 10,000 crore, or c) Average annual Turnover of Rs. 20,000 crore 2. The company should already have the Navratna Status. 3. The company is listed on Indian stock exchange with minimum prescribed public shareholding under SEBI regulations. 4. The company should have significant global presence.	1. In order to qualify as a Navratna, a company must have a composite score of 60 (out of 100) in the six selected performance parameters, namely: a) net profit to net worth b) manpower cost to total cost of production/ services c) profit before depreciation, interest and taxes to capital employed d) gross margin to turnover e) earning per share f) inter-sectoral performance. 2. The company should already have the Miniratna Category - I status. 3. The company has obtained 'excellent' or 'very good' Memorandum of Understanding (MoU) rating in 3 years out of last 5 years along with schedule 'A' listing. 4. The company must have four independent directors on its board.	The companies which have continuously made profits for the last three years or earned a net profit of Rs. 30 crore or more in one of the three years are eligible to be considered for the grant of Miniratna Category - I status.	The companies which have continuously made profits in the last three years and have positive net worth are eligible to be considered for the grant of Miniratna Category - II status.

RESULTS AND DISCUSSION

Corresponding to the first objective of the present study, eight major differences (as enumerated in Table. 1) between DPE guidelines on CSR and Section 135 of Companies Act, 2013 have been identified.

Table. 1 : Identification of the major differences between DPE guidelines on CSR and Section 135 of Companies Act, 2013.

Points of Difference	DPE Guidelines on CSR and Sustainability for CPSEs	CSR u/s 135 of Companies Act, 2013
Scope	These guidelines are applicable to Indian Central Public Sector Enterprises (CPSEs) only.	This section is applicable to all the companies registered in India and will also include the CPSEs.
Effective date of application	These guidelines came into effect from 1st April, 2013. But now superseded by Section 135 with effect from 1st April, 2014.	This section came into force on the effective date of notification in the official gazette i.e. 1st April, 2014 and are first applicable from the financial year 2014-15.
Conditions mandated to earmark specific funds for CSR	CPSEs must have earned profits in the immediately preceding financial year i.e. 2013-14 and onwards.	The companies must have net worth of Rs. 500 crore or more, or turnover of Rs. 1,000 crore or more, or a net profit of Rs. 5 crore or more during the relevant financial year i.e. 2014-15 and onwards.
Percentage of profits to spend on CSR	The budgetary allocation on CSR is based on the profitability of the company. More specifically, it is determined by Profit After Tax (PAT) of the CPSEs in the previous financial year as shown below: If PAT is less than Rs. 100 crores : 3% to 5% If PAT is Rs. 100 crores to Rs. 500 crores : 2% to 3% If PAT is Rs. 500 cores or more : 1% to 2%	The budgetary allocation on CSR is computed as 2% of the average net profits made by the company during every block of 3 financial years preceding the relevant financial year. For the purposes of this section "average net profits" shall be calculated in accordance with the provisions of Section 198 of Companies Act, 2013.
Activities to be undertaken in CSR policy.	The CSR activities undertaken by CPSEs in their CSR policy are approved by their respective Boards of Directors.	CSR Policy shall indicate the activities to be undertaken by the company as specified in Schedule VII of the Companies Act, 2013. (Refer to Annexure-II for the list of activities)
Time limit to use unspent amount of budgeted allocation for CSR	The unspent amount of the budget allocated for CSR and Sustainability activities for a year will have to be spent within the next two financial years, failing which, it would be transferred to a 'Sustainability Fund' to be created separately for CSR and sustainability activities.	The amount has to be spent within a year. If not spent, the reasons are to be disclosed by the Board.
Constitution of CSR committee	Each CPSE is required to have a Board level committee headed by either the Chairman and/or Managing Director, or an independent director to oversee the implementation of the CSR and sustainability policies of the company.	Constitution of CSR Committee is mandatory. Committee of the Board will consist three or more directors, out of which at least one director shall be an independent director.
Employee's benefit out of CSR budget	The use of facilities created out of CSR and sustainability budget by the company's employees (internal stakeholders) is confined to less than 25% of the total number of beneficiaries.	Only activities which are not exclusively for the benefit of employees of the company or their family members shall be considered as CSR activity.

STATEMENT & TESTING OF HYPOTHESES:

Corresponding to the second objective of the present study, the following hypotheses have been formulated & tested:

Statement and Testing of Hypothesis - I

H_0: There is no significant difference in the CSR spending of Maharatna companies under DPE guidelines and Section 135 of Companies Act, 2013.

H_1: There is a significant difference in the CSR spending of Maharatna companies under DPE guidelines and Section 135 of Companies Act, 2013.

Table: 2. CSR Spending of Maharatna companies under DPE Guidelines and Section 135 of Companies Act, 2013 in Financial Year 2014-15.

Rs. in Crore

Company Name	CSR Spending in F.Y. 2014-15		Difference
	As per DPE Guidelines	As per Section 135 of Companies Act, 2013	
Bharat Heavy Electricals Limited	34.67	165.16	130.50
Coal India Limited	150.09	229.05	78.97
GAIL (India) Limited	40.30	116.37	76.06
Indian Oil Corporation Limited	53.69	167.33	113.65
NTPC Limited	109.88	271.97	162.09
Oil & Natural Gas Corporation Limited	218.45	641.94	423.49
Steel Authority of India Limited	15.07	73.11	58.04
Total	**622.14**	**1664.94**	**1042.80**
Mean	**88.88**	**237.85**	**148.97**

Table: 3. Paired 't-test' on CSR Spending of Maharatna companies under DPE . Guidelines and Section 135 of Companies Act, 2013 in Financial Year 2014-15.

t-stat	t-critical (d.f. = 6, α = .05)
-3.122356558	± 2.446911851

The paired 't-test' calculated value is -3.122 and the lower limit of the acceptance region is -2.447 i.e. the calculated t-stat > t-critical at 5% level of significance, therefore we reject H0 & accept H1, implying that there is a significant difference in the CSR spending of Maharatna companies under DPE guidelines and Section 135 of Companies Act, 2013.

Statement and Testing of Hypothesis - II

H0: There is no significant difference in the CSR spending of Navratna companies under DPE guidelines and Section 135 of Companies Act, 2013.

H1: There is a significant difference in the CSR spending of Navratna companies under DPE guidelines and Section 135 of Companies Act, 2013.

Table: 4. CSR Spending of Navratna companies under DPE Guidelines and Section 135 of Companies Act, 2013 in Financial Year 2014-15.

Rs. in Crore

Company Name	CSR Spending in F.Y. 2014-15		Difference
	As per DPE Guidelines	As per Section 135 of Companies Act, 2013	
Bharat Electronics Limited	9.31	22.49	13.18
Bharat Petroleum Corporation Limited	40.61	79.13	38.52
Container Corporation of India Limited	9.85	24.52	14.67
Engineers India Limited	9.65	16.71	7.06
Hindustan Aeronautics Limited	26.93	69.35	42.43
Hindustan Petroleum Corporation Limited	17.92	35.03	17.11
National Aluminium Company Limited	6.92	20.61	13.70
National Buildings Construction Corporation Limited	5.39	6.29	0.90
NMDC Limited	63.76	199.93	136.17
Neyveli Lignite Corporation Limited	15.48	40.53	25.06
Oil India Limited	29.81	98.64	68.82
Power Finance Corporation Limited	54.17	117.46	63.29
Power Grid Corporation of India Limited	45.18	110.14	64.96
Rashtriya Ispat Nigam Limited	7.29	14.42	7.12
Rural Electrification Corporation Limited	46.83	103.25	56.42
Total	**389.10**	**958.50**	**569.40**
Mean	**25.94**	**63.90**	**37.96**

Table: 5. Paired 't-test' on CSR Spending of Navratna companies under DPE Guidelines and Section 135 of Companies Act, 2013 in Financial Year 2014-15.

t-stat	t-critical (d.f. = 14 α = .05)
-4.105379924	± 2.144786688

The paired 't-test' calculated value is -4.105 and the lower limit of the acceptance region is -2.145 i.e. the calculated t-stat > t-critical at 5% level of significance, therefore we reject H_0 & accept H_1, implying that there is a significant difference in the CSR spending of Navratna companies under DPE guidelines and Section 135 of Companies Act, 2013.

Statement and Testing of Hypothesis - III

H_0: There is no significant difference in the CSR spending of Miniratna (Category-I) companies under DPE guidelines and Section 135 of Companies Act, 2013.

H_1: There is a significant difference in the CSR spending of Miniratna (Category-I) companies under DPE guidelines and Section 135 of Companies Act, 2013.

Table: 6. CSR Spending of Miniratna (Category-I) companies under DPE Guidelines and Section 135 of Companies Act, 2013 in Financial Year 2014-15.

Rs. in Crore

Company Name	CSR Spending in F.Y. 2014-15		Difference
	As per DPE Guidelines	As per Section 135 of Companies Act, 2013	
Balmer Lawrie & Co. Limited	3.13	4.22	1.09
Bharat Coking Coal Limited	17.14	30.80	13.66
Bharat Dynamics Limited	6.91	8.51	1.60
Bridge & Roof Company (India) Limited	0.32	0.94	0.62
Central Warehousing Corporation	3.22	4.17	0.94
Central Coalfields Limited	16.72	47.86	31.15
Cochin Shipyard Limited	3.88	5.46	1.58
Dredging Corporation of India Limited	1.13	0.52	-0.61
Kamarajar Port Limited	6.38	5.01	-1.36
Garden Reach Shipbuilders & Engineers Limited	2.38	3.66	1.27
Hindustan Copper Limited	5.58	8.66	3.08

Housing & Urban Development Corporation Limited	8.86	20.02	11.16
India Tourism Development Corporation Limited	0.30	0.25	-0.05
IRCON International Limited	9.07	19.11	10.04
Mazagaon Dock Limited	7.96	12.79	4.83
Mahanadi Coalfields Limited	36.26	113.84	77.58
Manganese Ore (India) Limited	5.10	13.42	8.32
Mishra Dhatu Nigam Limited	2.40	2.23	-0.16
MMTC Limited	5.04	3.69	-1.35
MSTC Limited	3.14	3.26	0.12
NHPC Limited	14.82	57.03	42.21
Railtel Corporation of India Limited	2.76	2.85	0.09
Rail Vikas Nigam Limited	3.15	3.21	0.06
Rashtriya Chemicals & Fertilizers Limited	5.00	7.48	2.48
RITES Limited	5.40	6.72	1.32
SJVN Limited	11.15	25.88	14.73
State Trading Corporation of India Limited	2.20	1.42	-0.77
Telecommunications Consultants India Limited	0.44	0.39	-0.05
WAPCOS Limited	2.01	1.77	-0.24
Total	**191.84**	**415.19**	**223.35**
Mean	**6.62**	**14.32**	**7.70**

Table:7. Paired 't-test' on CSR Spending of Miniratna (Category-I) companies under DPE Guidelines and Section 135 of Companies Act, 2013 in Financial Year 2014-15.

t-stat	t-critical (d.f. = 28 α = .05)
-2.484441599	± 2.048407142

The paired 't-test' calculated value is -2.484 and the lower limit of the acceptance region is -2.048 i.e. the calculated t-stat > t-critical at 5% level of significance, therefore we reject H0 & accept H1, implying that there is a significant difference in the CSR spending of Miniratna (Category-I) companies under DPE guidelines and Section 135 of Companies Act, 2013.

FINDINGS

1. According to Section 135 of Companies Act, 2013, the companies having net worth of Rs. 500 crore or more, or turnover of Rs. 1,000 crore or more, or a net profit of Rs. 5 crore or more are required to spend minimum 2% of the average net profits earned during the three preceding years on CSR activities. It maintains that the CPSEs not covered by these limits are still required to follow the guidelines on CSR and sustainability issued by DPE. However, private companies not falling under above limits are exempted from this compulsion.
2. Companies spending on the lower side of regulated slab of DPE guidelines on CSR and sustainability are now required to spend more on CSR activities under Section 135 of Companies Act, 2013.
3. The mean difference between the amount to be spent on CSR activities by Maharatna, Navratna and Miniratna (Category-I) companies (if they continue to spend on the lower side of regulated slab of DPE guidelines) for the financial year 2014-15 under DPE guidelines and Section 135 of Companies Act, 2013 is Rs. 148.97 Crores, Rs. 37.96 Crores and Rs. 7.70 Crores respectively.
4. The paired 't-test' results stated that there is a significant difference in CSR spending in all of the three categories of CPSEs viz. Maharatna, Navratna & Miniratna under DPE guidelines and Section 135 of Companies Act, 2013.

SUGGESTIONS

1. The CPSEs are incorporated with an objective to build the industrial capacity and to drive social development of the nation's economy. Therefore, the concept of CSR should be largely visible in their vision and mission statement.
2. CPSEs are concerned with the socio-economic benefit of the society. There is no specific need to meet the commercial success criteria. Hence, providing a list of activities for CSR spending is not appropriate for these companies. CPSEs should be made independent to prioritize the activities according to society's needs and nature of their business.
3. Most of the Indian CPSEs are earning huge profits. Keeping this in view, ethical business practices should be made more important rather than considering 2% contribution towards CSR spending more valuable.
4. Schedule VII of Companies Act, 2013 covers donation towards Prime Minister's National Relief Fund as one of the activities taken up under CSR. However, this will undermine the true intention of CSR spending, because there is more likelihood that companies may opt for donation without any compulsion.
5. To achieve the planned objectives of CSR, auditing of CSR spending should be made compulsory apart from the normal audit of business transactions.

RESEARCH LIMITATION & SCOPE FOR FURTHER RESEARCH

Section 135 of Companies Act, 2013 provides that the profits for the purpose of calculating CSR liability should be in accordance with Section 198 of Companies Act. However, it was not practicable to adjust the profits according to Section 198 as per the available information. Hence, profits before tax have been considered for the purpose of calculating CSR liability. Further, the scope of present study was limited to compare the CSR spending under DPE guidelines on CSR and Section 135 of Companies Act, 2013 based on given statutory slabs. Researchers can also compare the CSR spending under these two guidelines based on actual spending of CPSEs before the new law and after its implementation.

CONCLUSION

In this paper an attempt is made to analyze the CSR spending of CPSEs under DPE guidelines on CSR and sustainability and Section 135 of Companies Act, 2013. The study revealed that CSR spending of CPSEs under Section 135 of Companies Act, 2013 is higher than the CSR spending under DPE guidelines in all of the three categories of CPSEs viz. Maharatna, Navratna & Miniratna (Category-I). Further, the paired 't-test' results showed that there is a significant difference in CSR spending of CPSEs under DPE guidelines and Section 135 of Companies Act, 2013. The difference in the amount of CSR spending of CPSEs under DPE guidelines and Section 135 of Companies Act, 2013 can be attributed to the time effect (one year only or three years average) and the type of profit (profit after tax or profit before tax). The introduction of Section 135 in Companies Act, 2013 has indicated the commitment of Ministry of Corporate Affairs (MCA) towards creating a company's sense of responsibility for the community and environment. It will create a system of proper accountability & transparency in the CSR spending of all the companies and can bring about a remarkable change in the society by making the organizations socially sensitive and responsible.

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Annexure-I

SCHEDULE VII

Activities which may be included by companies in their CSR policies:

i. eradicating extreme hunger and poverty;

ii. promotion of education;

iii. promoting gender equality and empowering women;

iv. reducing child mortality and improving maternal health;

v. combating human immunodeficiency virus, acquired immune deficiency syndrome, malaria and other diseases;

vi. ensuring environmental sustainability;

vii. employment enhancing vocational skills;

viii. social business projects;

ix. contribution to the Prime Minister's National Relief Fund or any other fund set up by the Central Government or the State Governments for socio-economic development and relief and funds for the welfare of the Scheduled Castes, the Scheduled Tribes, other backward classes, minorities and women; and

x. such other matters as may be prescribed.

SELECTION OF PROGRAMMING LANGUAGE FOR SOFTWARE DEVELOPMENT – CONJOINT APPROACH

- **Atul Shiva**, Assistant Professor in Commerce, Department of Commerce, Sri Aurobindo College of Commerce and Management, Ludhiana, Punjab, India
- **Vijay Chhabra**, Assistant Professor in Computer Sciences, Department of Computer Science, Sri Aurobindo College of Commerce and Management, Ludhiana, Punjab, India

Abstract

Purpose - Thepurpose of this research paper is to investigate the relationship between various attributes of programming languages for the development of software and selection of a best choice among them by the software developers.

Design/Methodology/Approach -For this purpose, five prominent programming languages were examined i.e. C, C++,Java, VB.NETand C#. The Conjoint Model was adopted and tested by multiple regression analysis for the formation of best choice in selected programming languages. Data was collected from students'pursuing post-graduate programs in various Colleges and Universities of Punjab State.

Findings -The main results of this empirical research suggest that VB.NET is the most acceptable programming language preferred for development of software by the participants followed by JAVA. In addition to this, participants prefer Platform Independence and Reliability factors much more than other factors.

Research limitations/implications -The paper provides comprehensive empirical evidence about the selection of a particular programming language by the participants and thus fills an important gap in Information Technology by using a statistical tool from academics, which can be used by corporate world while managing these programming languages. The major limitation is small sample size of 200 covering only one state of Punjab.

Originality/value–This paper is a modest attempt to develop and empirically test the validity and importance of computer programming languages through conjoint design.

Keywords: Computer Programs, Conjoint Analysis, Multiple Regression, Software Development, Software, Programming Language Preference.

JEL Codes: C880, M310& M390.

Introduction

Historically, the selection of the programming language for the development of software has been a process consisting of faculty evaluation, discussion and consensus. As the number of faculty, students and language option grows, this process is likely to become increasingly unwieldy (Parker and Chao, 2006). It has been argued that studying the history of the programming languages is essential as it helps developers avoid previously-committed mistakes in the development of the new languages (Wilson and Clark, 2000). It was also pointed out that an unfortunate trend in computer science is creating new language features without carefully studying previous work in this field (Grongo, 1999). Most of the books and article on the history of the programming languages tend to discuss languages in terms of generations where languages were classified by age (Cook, 1999). However the language adoption process has not been studied based upon the end user requirements, which are useful for the programming language developers. Understanding this process is a foundational step towards enabling language developers and advocates influencing its outcome and overall language use. Similarly, understanding will help developers in determining when and whether to bet on a new or experimental language or not (Meyerovich and Rabkin, 2013). Studies indicate that maintenance costs are at least 50% and sometimes more than 90% of the total cost associated with the software product (Koskinen, 2003, Seacord et al, 2003). If the Software developer wants to develop excellent software then he has to concentrate on user requirement, programming language, database management system, which places a pivotal role in the software development process (Joshi et al, 2012). The present paper introduces some guidelines for comparison and selection of appropriate programming language. It enables developers to base their decision in choosing the language on solid criteria that determines the suitability of the language to the application (Ghamdi and Urban, 1993). With the continuing increase in the variety, functionality and complexity in the engineering software along with its widespread use and increasing importance, more attention must be paid to programming language suitability, so that rational decisions regarding language selection may be made (Garcia et al, 2003). Thus, the plan of this study is to consider various preferences of end users and enable the programming language developers as to what current acceptance level of a language is and what best is required in order to remove the shortcomings at the language development stage. The selection criteria takes into account the programming feature of each language, the appropriateness of each of these features, the present and future industry acceptance of each language, the cost, reliability factors and the impact on the decision on the tactical and strategic direction of programming language developments by programmeror developers.

Review of Literature

Extensive work and research have been done in the field of comparative studies of the programming languages. Halang and Stoyenko (1990) conducted a comparative evaluation of seven high level real time programming languages and found that none of the languages actually used in industry is genuinely real-time. The study suggested some proposals to advance the inadequate state of affairs and ignited the discussion of this topic in real-time community. Garcia et al., (2003) reviewed C++, Java, LISP and Perl under the parameters of reusability, portability, reliability, readability, efficiency, availability of compilers and tools, familiarity and expressiveness. Aldrawiesh et al., (2009) presented review of the capabilities of the programming languages like Java, C++ and C# for developing web services and distributed systems based upon the criteria of simplicity and usage, concurrency, platform, maintainability, high integrity and reliability. Sleiman et al., (2010) reviewed ten programming languages with the aim of determining as to which programming language is more suitable for a particular language domain; Web Application Development and Object Oriented Based Abstraction. The Work provides evidence and analysis on why some languages are better than others or have greater advantages than others. However, Fajuyigbe et al., (2009) proposed an appropriate language for introducing Object Oriented Programming in tertiary institutions which helped the students to adopt a skill for using the most appropriate language. The study defined a set of criteria critical to the selection of most suitable programming language for introducing students to Object Oriented concepts and programming. The programming languages selected in this study were Java, C#, C++, C and Visual Basic. Joshi et al., (2012) discussed important factors for developers to select the programming languages as well as database management system. The study expressed that there is no thumb rule at all while selecting a particular programming language or DBMS. Jindal et al., (2013) studied about programming languages like C and C++ and C Objective and explained that one language effects and influences other language in one way or the other. Parker and Ottaway (2006) developed and documented an exhaustive set of selection criteria to the process of programming languages. The present study suggests comprehensive set of criteria while selecting a programming language like cost, life cycle of language, academic and industry dependence, ease of use, support for target application, object oriented support and others, which is helpful for teaching environment and proposes several approaches for the application of these criteria. Obi and Akwukuma (2013) made an assessment of programming language reliability utilizing soft-computing with reference to structured languages like C and C++ or Object oriented languages like Java, C# and Ruby. The paper determines reliability in terms of 'reliable', 'moderate reliable' and 'not reliable'. Based upon

these existing studies,this study conducted on major parameters of selectingprogramming languages. For thisfive prominent programming languages C, C++, Java, VB.NET and C# were examined. The major factors used for comparison are platform independence, security, development cost, reliability and ease of use.

Objectives of the Study

For studying the superiority of a particular social networking site, following objectives are considered in this study:

1. To analyze the impact of various factors affecting the choice of a particular programming language for software development by the IT companies.
2. To identify the best choice of a particular programming language among IT professionals (with reference to C, C++, Java, VB.NET and C#).

Hypothesis of the study

Ho1: There is no association between the dependent variable and the different explanatory variables.

Ho2: There is no absolute selection of a particular programming language by the IT professionals over other languages.

Research Methodology

For the purpose of estimating the research models for hypotheses test, firstly a sample of 200 students from Colleges and Universities offering advanced computer programming courses were selected, which covered the state of Punjab. To analyze and find out the best choice of a social networking site, Conjoint Analysis technique was used. Conjoint Analysis was first introduced into the marketing literature by Green and Rao (1971) and Johnson (1974). Green and Srinivasan (1978) indicated that conjoint analysis is an analytic method with de-compositional approach for evaluating the preference structure of the known assesses and overall assessment. Louviere and Islam (2008) described three methodologies of Conjoint Analysis:

- Traditional Conjoint Analysis, based on giving preference,
- Choice – based or Discrete Choice Conjoint Analysis, based on choice,
- Best/Worst (BW) Conjoint.

Out of these, Conjoint Analysis was used, where respondents were asked to rate or rank the product scenarios and the analysis reveals the relative importance, called utilities of each of the different levels of each attribute. Further,in the study the preference functions are measured by

ordinary least squares (OLS) regression method with dummy variables, since researches have shown that the efficiency of this technique is often similar to more complex techniques like Logit, Monanova, Linmap and others, but the results are easier to interpret (Oppewal, Vriens, 2000). The orthogonal arrays (Orthoplan) were generated by SPSS – 18.0. A total of 25 design cards were generated for the respondents to give preferences using 10 – point Likert Scale (1 = Least Preferred, 10 = Most Preferred). In our study, the number of stimuli was 25 which were higher than the minimum number of stimuli (total number of levels across all attribute – number of attributes + 1 = 20) that was evaluated by the respondents to ensure the reliability of the estimated parameters.

Research Design

The research study adopted content analysis in order to find the impact of various attributes like platform independence, security, development cost, reliability and ease of use to assess various programming languages like C, C++, JAVA, VB.NET and C# among the target audience. Table number 1 represents the orthogonal matrix in 25 cards as designed by SPSS 18.0 software. The non-probability sampling technique is used to collect the opinions from the respondents falling in the age group of 17 years to 25 years. The sample size is 200. The Conjoint Design framed on the above mentioned attributes are mentioned in Table number 1.

Table 1. Conjoint Design: Explanation of Attributes and Levels

	ATTRIBUTES				
Programming Languages	**Platform Independence**	**Security**	**Development Cost**	**Reliability**	**Ease of Use**
ALTERNATIVES					
C	Full Support	Fully Secured	Very High Cost	Highly Reliable	Highly Difficult to Use
C++	Partial Support	Partially Secured	High Cost	Moderately Reliable	Difficult to Use
JAVA	No Support	Moderately Secured	Low Cost	Low Reliable	Easy to Use
VB.NET	Additional Component Support	Unsecured	Nominal Cost	Unreliable	Very Easy to Use
C#					

Total Number of Attributes=6
Total Number of alternatives across all attributes=25
Minimum Required Stimuli=25-6+1=20
Source: ***Authors' findings***

Analysis of Conjoint Results and Hypothesis Testing

Table number 3 represents the results of regression analysis, where the Adjusted R – Square value shows 89.7% variation in the model which is highly significant at 1 % level of significance, thus Null HypothesisHo1is rejected which signifies that there is association between the dependent variable and different explanatory variables. The value of Durbin – Watson statistic is 2.338, which lies in the range (1.25 – 2.75) showing that auto – correlation is not present.

Table 2: Model Summary

*Model Significant at 1% Level of Significance

Model Summary

R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics					Durbin-Watson
				R^2 Change	F Change	df 1	df 2	Sig. F Change	
.989[a]	.979	**.897**	.50990	.979	11.996	19	5	**.006**	2.338

a. Predictors: (Constant), VeryEasyto Use, Unreliable, Nominal Cost, Unsecured, Additional ComponentSupportRequired, C SHARP, Moderately Secured, C++, Easy to Use, Low Reliability, Low Cost, NoSupport, PartiallySecured, VB.NET, DifficulttoUse, Moderately Reliable, High Cost, PartialSupport, JAVA

b. Dependent Variable: OverallRating

Source: ***Authors' findings***

Table 3: ANOVA

ANOVA

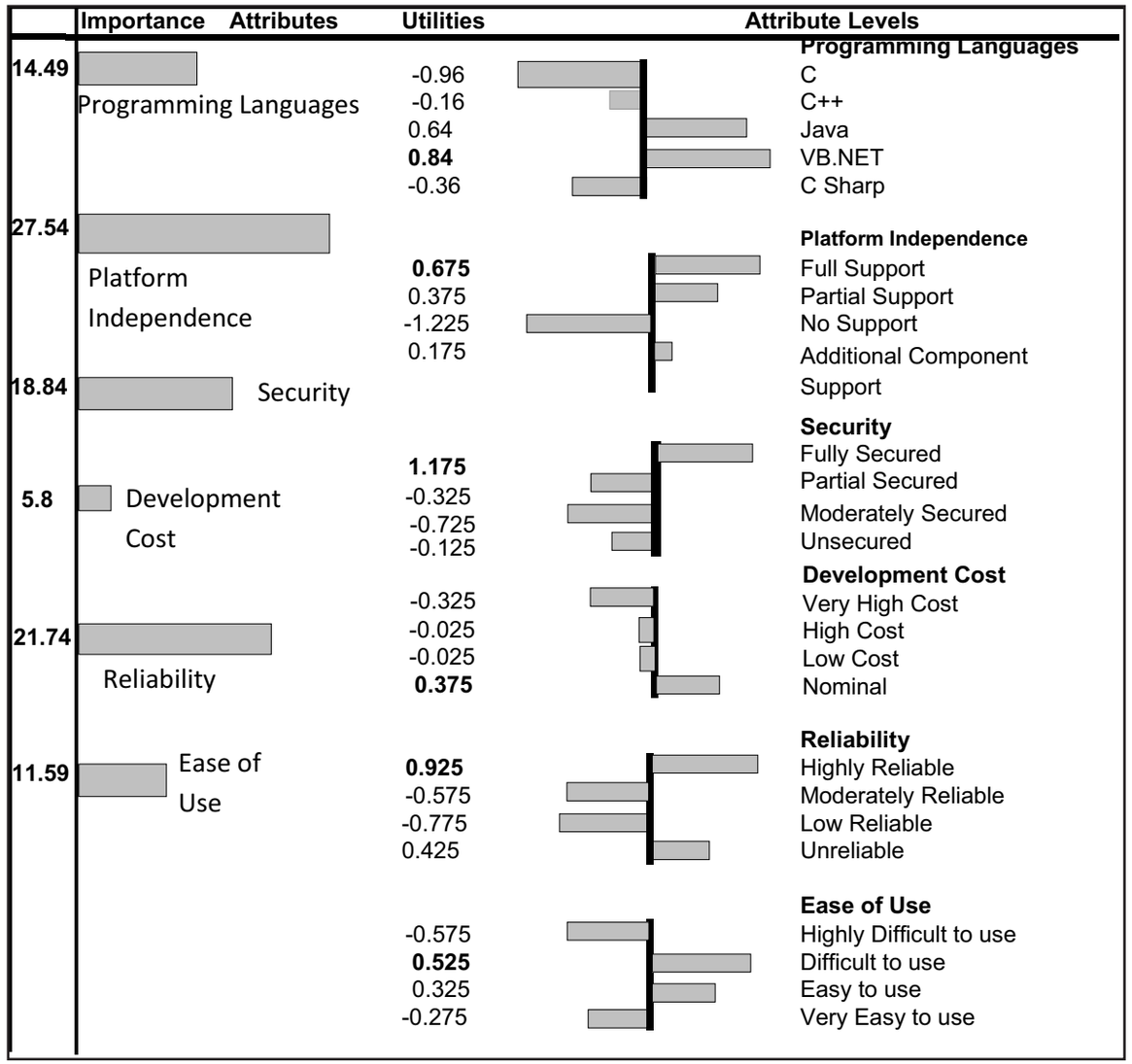
Model		Sum of Squares	Degree of Freedom	Mean Square	F	Sig.
1	Regression	59.260	19	3.119	11.996	**.006[a]**
	Residual	1.300	5	.260		
	Total	60.560	24			

b. Dependent Variable: Overall Rating

*Model significant at 1% Level of Significance.

Source: Authors' findings

Figure 1: Relative Importance and Utility Scores of Considered Attributes in the selection of a Programming Language



Source: Authors' findings

Figure 1 represents the mean preference structure of programming languages in terms of imporatance and utilities of various arttribute levels. All these help us to understand the rankings of attributes when it comes to the choice of a programming language for the development a particular software. In Figure 1, six salient attributes and their levels were identified for programming language choice process. Full Profile Conjoint Anlaysis was used for construction of preference structure. Analysing the preference strutcture or the importance accorded by the students to the six salient attributes, the students accorded the maximum utility/importance to

the attribute *'Platform Independence'* i.e Full Support with 27.54 percent importance. Here, the study concludes that the software developers highly require full support while developing any sort of software, thereby rejecting all other options of partial, no support and additional component required. However, software developers can agree to partial support with 0.375 utility in case full support option is not available. The second attribute adjudged best by software developers was '*Reliability Factors*' with an importance value of 21.74 percent in which the requirement is for highly reliable software with a utility value of 0.925. The reliabilty aspect is so important for the developers that for the other options they have given negative utilities.

Thereafter, at the third place in the worth hierarchy is the attribute of *'Securiy Aspects'*with importance of 18.84 percent. Here, it was observed that only highly reliabile software are generated and selected by the software developers with a utility values of 1.175. The mandate of repsondents was clear enough that in security no compromise could be made when they are put to use by the end users in the market. Then, at fourth place of the hierarchical framework, is the attribute *'Programming Languages'* with 14.49 percent importance. This is an important finding, as it shows that, our respondetns are more keen towards platform independence, secutiry and reliablity factors than type of language since there are many other langugaes which can be tested and used to produce a software for end users but the type is not the real important thing which is used while developing a software. VB.NET is the most preferred language by the respondents with 0.84 utilty followed by JAVA with 0.64 utility, while all other languages are not commonly preferred since they have been rated in negative utitlties in the study. The next preference is given to the *'Ease of Use'*attribute with an importance of 11.59% where the repsondents prefer that the final usage should not be highly difficlut but still it must require some training and experience to use the software so developed by the software professionls. The last attribute was the presence of *'Development Costs'* in the Conjoint Design with an importance of 5.8 percent only. The respondents have very less interest in the development cost since the software is designed after taking into consideration the demand, paying capacities and facilities required by the consumers. The software is customised according to the above mentioned parameters, therefore the cost factors are always considered last by the IT professionals.

In Table 4, the Best Choice of a Programming Language for the development of software (Final Result) is projected where the respondents have expressed their best choice using *"Fully Support Platform Independence – High Reliability – Fully Secured – VB.NET Language – Difficult to Use – Development Cost viabilities"*.

Table 4: Best Choice of Programming Language for Software Development (Final Result)

Best Choice	Full Support	Highly Reliable	Fully Secured	VB.NET	Difficult to Use	Nominal Cost
Utilities	0.675	0.925	1.175	0.84	0.525	0.375
Code	B1	E1	C1	A4	F2	D4

Source: Authors' findings

This best choice selection by the respondents by Conjoint Analysis clearly rejects the second Null Hypothesis Ho2 and leads to acceptance to alternative Hypothesis that there is one absolute selection of a particular programming language by the respondents over other languages based on various attributes and attribute levels.

Limitations of the Study

Our study is subject to some limitations too. First, a large part of our respondents were students and the sample size is 200. Taking into account the fact that the demographics of respondents and their requirements are constantly changing, further research should validate our findings with other population groups. In addition, the respondents in our sample were from a particular State i.e. Punjab, which limits the scope of our study. More studies covering zones like North India could further validate the findings of the present study. Finally, the results of every conjoint analysis are highly dependent on the choice of the attributes and their respective levels. Addressing this argument,the present study lays stress on decisions which were based on the extensive literature review combined with pre-study interviews and careful pretesting of the conjoint design.

Discussion and Concluding Remarks

Our study is an attempt to empirically investigate the factors behind the choice of a Programming Language for the development of software using a conjoint approach. The major findings of the study are that Platform Independence, Reliability and Security factors should be considered as the most important parameters for the development of software. The type of a programming language comes afterward with VB.NET and JAVA as preferred options followed by usage and development costs factors considered by the respondents. This research paper provides comprehensive empirical evidence about the selection of a particular programming language by the participants and thus fills an important gap in Information Technology research by using a statistical tool from Academics.The findings of the research study can be used by corporate world while managing these programming languages.

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Author Guidelines

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3. A brief **profile of the author (s)** should be supplied on separate sheets (and not to be shown anywhere else in the manuscript) including :

   3a. Full name

   3b. Designation and institution

   3c. E-mail address

3d. Full international contact details

3e. Brief professional biography.

4. Authors must supply a **structured abstract (maximum 250 words)** set out under the following sub headings:

4a. Purpose (mandatory)

4b. Design/methodology/approach (mandatory)

4c. Findings (mandatory)

4d. Research limitations/implications (if applicable)

4e. Practical implications (if applicable)

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7. All **figures** (charts, diagrams and line drawings), plates (photographic images) and tables should be of clear quality, in black and white and numbered consecutively with Arabic numerals.

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8a. **For books**: Surnames, Initials (year), Title of book, Publisher, Place of publication, pages. **E.g.Ghuman, K. and Aswathappa (2010), Management: concept& cases, Mc-Graw Hill Education, New Delhi, India, pp:22-23.**

8b. **For edited books:** Surnames, Initials of chapter author (year), "chapter title". Editor's surname, initials (ed), title of book, publisher, place of publication, pages. **E.g. Aggarwal, M. (2002), "CorporateGovernance in banks", in Vashisht, Tendon and Arya, (Ed.), Corporate Governance, Deep and Deep Publications Pvt Ltd, New Delhi, India, pp. 15-20.**

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8d. **For published conference proceedings:** Surname, Initials (year of publication), 'Title of paper", in surname, initials (ed.), title of published proceeding which may include place and date (s) held, publisher, place of publication, page numbers. **E.g. Jakkilinki,R., Georgievski, M. and Sharda, N. (2007)," Connecting Destinations with an Ontology-Based e-tourism planner", in Information and communication technologies in tourism 2007, Springer-Verlag, Vienna, pp. 12-32.**

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8f. **For working papers:** surnames, initials (year), "title of article". Working paper [number if available], institution Or organization, place of arganization, date. **E.g. Moizer,P. (2003), "How published academic research can inform policy decisions: the case of mandatory rotation of audit appointments", working papers, Leeds University Business School, University of Leeds, Leeds, 28 march.**

8g. **For encyclopedia entries (with no author or editor)**: title of encyclopedia (year) "title of entry", volume, edition, title of encyclopedia, publisher, place of publication, pages. **E.g. Encyclopedia Britannica (1926) "Psychology of Culture Contact", Vol.1, 13th Ed., Encyclopedia Britannica, London and New York, NY, pp.765-71. (For authorized entries please refer to book chapter guidelines above.)**

8h. **For newspaper articles (authored):** surname, initials (year), "article title", newspaper, date, pages. **E.g. Sanyal, S. (2010), "Government won't make CSR spending mandatory", The Economic Times, December 23, pp. 1.**

8i. **For newspaper articles (non-authored):** newspaper (year), "article title", date, pages. **E.g. Economic Times (2010), "Bankers want RBI to watch over Microfinance Sector",December 23, pp.1.**

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