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Editorial

OBC are the new commanders of 'Hindutwa Brigade' (UP State Assembly elections 2017)

A very powerful alliance of Non-Yaday OBC and Upper caste voters won the election for BJP in Utter Pradesh in recent state assembly elections. In these elections, BJP and his allies managed to get 312 seats out of 403 assembly seats. For the foreigners BJP's win in Uttar Pradesh might be stunning but those who have been following the India's socio –economic transformation process of Hindi Heartland for a decade or more could easily predict such kind of outcomes. . For quite a long time, BJP had been trying hard to make a voter alliance between upper caste and OBC voters. They experimented it in Bihar but it failed because Nitish Kumar joined hand with Lalu Prasad Yadav. Last year   during the during the state assembly elections in Bihar, Lalu's caste based reservation issue mitigated the BJP's plans.

In Uttar Pradesh, A large percentage of NON Yadav OBC voters were unhappy with the supremacy of Yadav and Muslim community in the state. BJP quite early read the unrest -prevailing in minds of non- Yadav -OBC voters and other non-Muslim voters. They welcomed non- Yadav OBC and Dalit leaders in the party. Appointment of Kesav Prashad Morya as the state BJP president was one such move. In order to nullify the caste based barriers, BJP emphasized upon 'Hindutwa' and 'Development'. BJP's move attracted the youths of all Hindu castes.

On the other hand Rahul Gandhi opposed every move of BJP without categorizing them on the basis of merits and demerits His softness towards the Kanahiya and his allies did not go well with the people of Uttar Pradesh. Clearly Congress, BSP and SP leaders underestimated the people sentiment on the matter of 'Nationalism'. During the Bihar state assembly elections 2016, '*Sudden Blast of Caste Based Reservation'* had undermined the BJP's plans in Bihar. Clearly in UP also SP and BSP were looking for any such magic.

Mayawati was a strong political power in the state. But her emphasis over Muslim voters did not work. Mayawati was optimistic that Dalit and Muslim votes together could make a winning percentage of 35-40%. But it was indeed nothing but over wishful thinking from her side that each and every Muslim and Dalit voter would vote for BSP. Muslim voters, failed to decide between Samajwadi Party and BSP, and their votes divided undisputedly. but it is wrong to say that BJP's Huge win in UP State elections is a result of winning social equations only. Actually in last 10-15 years a very powerful OBC segment is emerged on national level. It's very urban and consummate lover of Hindutwa. The Neo- OBC community is quite a rich and affluent community. This new OBC community is now holding the flag of 'Hindutwa 'not only in UP but also in other parts of Ganges plain and, Prime minster Naredra Modi a non-Upper Caste face of Hindutwa is their new Hero.

Sanjive Singh

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ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN FRAUD DETECTION AND PREVENTATION IN SOME SELECTED DEPOSIT MONEY BANKS IN NIGERIAN

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Abstract
The pervasiveness of fraud and forgeries in Nigerian banking industry is a course of concern for the industry. Millions if not billions of naira is lost due to fraudulent practices. As such it is the objectives of this research to examine the role of ICT in fraud detection and prevention for the period of 2011 to 2015. The study uses survey research where structured questionnaire were administered to three sampled banks which are selected using simple random sampling from a total of eighteen banks operating in Gombe metropolis. Descriptive statistics and Kruskal Walli's H.Test were seen as the best application to test the hypotheses. Consequently, it was found that fraud is a phenomenon and that Information and Communication Technology (ICT) as well as internal control mechanisms help in detecting and preventing the occurrence of fraud and other irregularities in the banks. The study gives the following recommendation; the banks should developed an appropriate and unique software to facilitate effective operation. There should be proper recruitment of competent staff and compensation system as well as constant or periodic check, and job rotation. Banks should also provide adequate ICT's infrastructures to curb fraudulent activities.

Key Words: Fraud, Detection and Prevention

Introduction

A high percentage of fraud and forgery cases in the banking industry have been observed to be perpetrated by or in conjunction with members of staff. Indeed, it is noted that most big banks fraud that succeeded have internal collaborators. Nigerian Deposit Insurance Cooperation (NDIC) statistics on bank's staff involvement in fraud and forgeries shows that corporation's staff such as Executive assistants, Managers, Accountants, Supervisor's, Officers, Clerks and Cashiers accounted for about 90.6% of the total bank fraud attributed to staff, Isiaka, (2004).

Fraud is an action, which involves the use of deceit and tricks to alter the truth so as to deprive a person of something which belongs to him or something in which the might be entitled. The intension of the fraudster is to dishonestly benefit himself on that act to the detriment of a legitimate beneficiary of such property of right (Nasir 2006, Adebayo 2005, Smith 1990, Encarta Premium 2005). One thing that characterizes fraud and makes it different from other forms of crimes is that the application of physical force, violence or threats may not be involved to carry it out (Smith 1999). The level of fraud is of great concern to all stakeholders, i.e. shareholders,

customers, staff, regulators, government, consultants etc. the banking industry is one pivotal industry in which any economy rotates and because new fraudulent schemes are continually surfacing just as quickly as one type of fraud is detected another is introduced hence, the number of reported cases of fraud has continued to increase over the past years.

Fraud permeates through every facet of the organization regardless of ownership. Fraudulent manipulation constituted the greatest threat to organizations. Fraud rate is alarming and frequent occurrence of fraud in any organization, apart from destroying the corporate image of the organization, can also destroy investors and public confidence in the organization and these will eventually lead to loss of resources and threaten the survival of the organization.

With the increase in application of information and Communication Technology (ICT) across diverse sector of Nigeria economy, an increasing number of organizations are turning their attention on the need to fully integrate and enjoy the benefits of the application of ICT. The increasing application of ICT allows companies to re-engineer critical business processes, improve the overall efficiency of people and productivity across functional areas. With the world being a global village now, this resulted in high competition by organization to meet up with the challenges of embracing Information and Communication Technology (ICT) for efficient management of their operation. Since the whole word is now ICT compliant, therefore, fraud control is not complete without looking at how ICT can be used to prevent and detect fraud.

In line with the above this study seeks to examine the role of information and communication technology in fraud detection and prevention in some selected Deposit Money Banks in Nigeria. The paper is structured into five sections, section one covers the introduction, section two discusses the literature section three explains the methodology employed while section four presents the analysis of the result and section five conclusion and recommendation.

Literature

Concept of information and communication technology

Information and communication technology is a general expression covering computer, telecommunication electronic and there is little or no doubt that ICT is having a profound influence on all aspect of life, including organizations and management information system (MIS). Much of the expenditure on computer and ICT incurred by organizations to date have been on relatively routine data processing application, particularly in the accounting area and in operational control system such as stock control. The rapid growth of technology and the dramatically falling cost of computer capability mean that more and more aspect of managerial planning and decision making can be assisted by information system developed in accordance with properly defined objectives and principles.

The concept and Nature of Fraud

According to the Audit commission (2000), fraud is the international distortion of financial statements or their records by a person or persons internally or externally to the organization which is carried out to conceal, misappropriation of assets or otherwise for gain. In the same vein, Nicholas, (2000) defines fraud as any act of criminal deceit or falsification by a person or group of persons with the intention of altering facts in order to obtain undue personal monetary advantage. Aren et'al (2006) defines fraud as an intentional misstatement of financial statements.

While the international Audit Guideline (AIG6) defines fraud as a particular type of irregularities involving the use of deceits to obtain an illegal or unjust advantages through manipulation, falsification or alteration of records or documents, misappropriation of assets, suppressing or omitting transactions from records or documents, recording transactions without substance, and misapplication of accounting policies if this is intentional and deceitful.

Whichever perspective fraud is looked at, it connotes an intentional distortion of financial

statements for whether or not accompanied by distortion of financial stetaments.it is noted that this kind of act could either be internal or external. But fraud may be grouped into three(3) broad categories i.e. on the basis of perpetrators, according to smith (1999), are internal fraud or employee fraud committed by members of staff, external fraud committed by those not connected with the banks and mixed fraud committed by outsiders in collision or connivance with bank's staff.Fraud in the banking industry is something which is denoted by any of these conditions, that is conditions which allowed perpetration of fraud in the banking sector are; firstly intention which is subjective and secondly, the opportunity which is objective.Banks in Nigeria endeavor to eliminate the intention in this by offering their employees with handsome salaries and attractive prerequisite with good prospective to rise. Banking industry is among the few industries in Nigeria paying the highest emolument to their staffs.

Information and Communication Technology & Fraud Delectation and Prevention

ICT is a combination of hardware; software and telecommunication systems that support the business operations improve productivity and help managers make decisions. To deal with the explosive growth in ICT, employers must compete to hire the best and the brightest people they can find. A key part of ICT involves systems analysis and design, which is the process of developing information systems that effectively use hardware, data, process, and people to support the company's business objective. System analysts working in the ICT department plan, analyst and implements information systems. Employment expert predict a shortage of qualified workers to fill ICT position which create a high demand for individuals with the right mix of skills, knowledge and experience to fill those positions. A system is a set related component that produces specific result. For example, specialize system manage the engine in your car, operate your microwave oven, etc, companies support their

business operations with information system that manage data and information (when information system is vital to the company's operates, it is called a mission critical system). Most banks have a centralized system, meaning that the data base and the application servers are centrally collated and can be accessed via the communication infrastructure from any of the branch offices for online transaction processing. This system has radically changed the operation processes of the banks in the sense that it engenders more interactions between the end-users and the computer, since translations are real time on line. This brings about efficient service delivery to the teeming customers. The customers are allowed to access the system to make inquiring or print about their transaction within the comfort of their office without visiting any of the company's offices.

The data processing department must be run by professional who have the expertise to designed and developed application software for the use of the company. They must also have the ability to maintain the system configurations for the efficient use by the organizations. The business must provide information to its customers, official bodies and investing communities. Customers required invoices and statements, orders must be sent to suppliers. These would be produced as part of the internal information system of the business, which is records for use in the business would be designed in such a way to produce simultaneously records required externally.

Information in prescribed forms must be provided for government agencies, for example, the corporate Affairs commission requires company accounts to be filed, returns must be made to the inland Revenue commission concerning corporate tax etc. Also the company must provide information to the investing community in such a form as to permit analysis to be made of the company's activities by the financial world. Information must of the available to shareholders and creditors of the company, the printed out copy is available to the company or information can be accessed on line through internet.

Methodology

The research work employs survey research design, the study uses simple random sampling to select three banks which are GTBank Nig. Plc, Fidelity Bank Nig. Plc and UBA, and it uses questionnaire as a tool of data collection. Fourty two (42) were distributed to management staff and staff of ICT and Audit departments of the three selected banks, the questionnaire consists of closed ended questions. The linkert scale ranking was also applied, valued of the scale are ranked from strongly Agreed to strongly disagree, very effective to very ineffective, also from very efficient to very inefficient. The study uses descriptive statistics to analyse the data. The study covers the period of 2011 to 2015.

Results and Discussions

This discusses the results of the data drawn therefrom the forty two questionnaires administered to the staff of UBA, GTB and Fidelity bank were analyzed therein, using tables and simple percentage calculated to ascertain the degree of responses made by the respondents, which form the basis for acceptance or rejection of the hypotheses postulated in the research.

Nature of Fraud in the Banking Industry
Table 1: Occurrence of Fraud

Variable	Frequency (f)	(%)
Always	12	30
Almost always	18	45
Sometimes	8	20
Rarely	1	2.5
Never	1	2.5
Total	40	100

Source: Questionnaire administered 2011.

It can be seen that 12 of the respondents representing 30% are of the opinion that fraud occurred always in the banks while 18 and 8 are standing that the occurrence of fraud is almost always and sometimes respectively. Rarely and never with one (1) respondent each representing 2.5%. This implies by the judgment of simple

percentage that fraud occurred almost always in the bank.

Table 2: Limitation in the performance of banks due to frequent occurrence of fraud

Variable	Frequency (f)	%
Strongly agree	33	82.5
Agree	3	7.5
Undecided	1	2.5
Disagree	2	5
Strongly disagree	1	2.5
Total	40	100

Source: Questionnaire administered 2011

Through the linkert scale of 40 respondents, 33 respondents representing 82.5% strongly agreed that fraud has cause great limitation in the performance of banking industries, 3 agreed, meanwhile only one (1) of the respondent representing 2.5% did not decide and 2 disagreed to the circumstances cause by fraud. However, one (1) of the respondent again strongly disagreed that fraud does not have any limitation in the performance of banks. From the above simple percentage, it is clear that the occurrence of fraud in the bank has a negative effect in their performance.

Table 3: Sources of information about bank's fraud

Variable	Frequency (f)	(%)
Employee handbook	25	67.6
Induction course	8	21.6
Notice	2	5.4
Others	2	5.4
Total	37	100

Source: Questionnaire administered 2011.

Looking at the above table, it can be seen that the total number of responses were 37, implying that 37 workforce in the bank are aware of fraudulent activities. Out of the 37 respondents, 25 representing 67.6% became aware through employee handbook of the bank, 8

of the respondents representing 21.6% became aware during induction course while 2 each representing 5.4% become informed about occurrence of fraudulent activities through the notice board and other sources said, through rumour.

Table 4: Nature/Form by which fraud occur in the bank

Variable	Frequency (f)	(%)
Internal/employee fraud	18	48.6
External/customer fraud	9	24.3
Mixed fraud	8	21.6
Others	2	5.5
Total	**37**	**100**

Source: Questionnaire administered 2011.

Internal/employee fraud in the banking industry is far reaching with 18 respondents representing 48.6% as compared to external/customer fraud and mixed nature of fraud with 9 and 8 respondents representing 24.3% and 21.6% respectively. The remaining respondents of 2, representing 5.5% said fraud occurred in the three ways, hence, they remain indifferent.

Table 5: Rate of the re-occurrence of fraud.

Variable	Frequency (f)	(%)
Top management	17	45.9
Customers care	6	16.2
Teller/cashier	10	27.0
System analyst	4	10.9
Others	-	-
Total	**37**	**100**

Source: Questionnaire administered 2011.

The table above shows the rate of reoccurrence and categories of persons involved in fraud and forgeries in the banks. The top management were rated higher by 17 respondents representing the simple percentage of 45.9% cashier/teller was second with 10 respondents representing 27.0%. However, the customer care and system analyst fall third and forth respectively with 6 and 4 respondents indicating lower percentage of 16.2% and 10.9%.

Internal Control Mechanisms in the Banking Industry

Table 6: Internal control mechanism minimizes the occurrence of fraud

Variable	Frequency (f)	%
Strongly agree	32	86.5
Agree	2	5.4
Undecided	1	2.7
Disagree	1	2.7
Others	1	2.7
Total	**37**	**100**

Source: Questionnaire administered 2011.

The above table revealed that 86.5% of the responses collected, representing the views of 38 response pointed out that internal control mechanisms is an effective method in preventing and detecting fraud, 2 other respondent agreed that it minimizes the occurrence of fraud while one (1) decided not and 2 respondents representing 2.7% each disagree and strongly disagreed with the opinion of others, thus the number of respondent who strongly agreed and agreed out weighted the other side of it, following the simple percentage drawn. It will be optimal to intensify efforts towards staff auditing and due application of ICT in the banking sector to minimizes fraudulent activities.

Table 7: How effective is internal control use in fraud prevention and detection.

Variable	Frequency (f)	(%)
Very effective	32	86.5
Effective	2	5.4
Undecided	1	2.7
Ineffective	2	2.7
Very effective	1	2.7
Total	**37**	**100**

Source: Questionnaire administered 2011.

Under the above table, it is witnessed that 32 respondents representing 86.5% are of the view that internal control mechanism is very effective in fraud prevention and detection. Therefore, the role of internal audit department should not be over emphasized, meanwhile 2 out of the 27 respondents said it is only effective and I each

aired their views that internal control mechanism is less effective and very ineffective, however, they represent a negligible percentage of 2.7% each. One of the respondents did not decide his mind.

Table 8: Ways of detecting frauds

Variable	Frequency (f)	(%)
Whistle blowing	10	27.0
Customer compliant	5	13.5
Reconciliation of account	18	48.6
Stock-taking	3	8.2
Changes in life styles culprits	1	2.7
Total	**37**	**100**

Source: Questionnaire administered 2011

There is strong indication that conciliation of account played a role in detecting fraud in the banks. This is evidenced by the higher rate of respondents under it, marking 48.6% of the total respondents. However, whistle blowing followed with 27% then customers compliant, stock-taking and changes in life styles of culprits with 13.5% and 27% respectively.

Information and Communication Technology

Table 9: Information and Communication Technology facilities that make fraudulent practices become prevalent in the banking industry

Variable	Frequency (f)	Percentage (%)
Pass word cracking	13	35.2
Scavenging	10	27.0
Piggy backing	7	18.9
Terminal spotting	7	18.9
Total	**37**	**100**

Source: Questionnaire administered 2011

the above table indicates that 35 respondents responded to this question, by further indication, 13 representing 35.2% of the total were of the view that password (ATM Fraud) cracking is the respondents standing at 27% assured that scavenging is the prevalence facilities for fraudulent practices. Meanwhile, 7 each terminal spotting is also an attributed factor of fraud in the banks. Through the range among these variables is not much, it still holds that password carried the highest percentage. The five collaboration model of Linkert scale was also used to draw answers from strongly agree to strong disagree symbolically represented SA-strongly agree, A-agree U-undecided, D-disagree and SD-strongly disagree. The work also used very effective and very ineffective represented by VE-very effective, E-effective, U-undecided, I-Ineffective, VI-Very ineffective. These are measured in the ordinal scale ranging from SA=5, A=4, U=3, D=2 and SD=1. The same ordinal scale is applicable to very effective to very ineffective

Table 10: Linkert scale table

VARIABLE	SA	A	U	D	SD
All staff using information and Communication Technology have password	23	10	01	02	01
Staff passwords are frequently changed by systems analysts	18	13	03	01	02
All members of staff in your organization have access to the central computer system in the organization	05	06	03	21	02
All the Information and Communication Technology system in the organization have attributed identification devices	13	15	02	06	01
All entries by computer operators are rechecked to detect errors	17	13	01	03	03
Information and Communication Technology facilities render efficient and effective service delivery to customer eliminating delays	20	06	04	04	03
Network failure have been the major obstacles in efficient service delivery	14	18	01	03	01
Effectiveness of ICT towards fraud prevention and detection in banks	31	02	02	01	01
How is ICT application and compliance in your bank	30	02	03	01	01

Source: Questionnaire administered 2011

Table 10 above shows the ranking scale giving an express impression of the respondents' responses to the questions, their attitude, scale and thus, ranked along the continua.

Testing of Hypotheses

The method used in analyzing data for the purpose of this research is the scientific method called Kruskal Wallis H. Test. The respondents' answer to questionnaires were arranged and presented in tables, followed by the analysis of the variables on the frequency table. To facilitate the objective of this project, one hypothesis is formulated and tested using the Kruskal Wallis H. Test given by the formula.

$H =$

Where H= Calculated value on the table

K = Number of sample responses

N = Total responses from the options table

R = Is the ranking scales

Testing of Hypothesis

Ho: ICT will not significantly ensure efficient and effective fraud prevention and detection in the banking sector. The following table provides us with the summary of responses obtained in respect of questions 17 and question 18 as presented in table 10.1 and 10.2

	Q17	Q18
Option 5	31	30
Option 4	2	2
Option 3	2	3
Option 2	1	1
Option 1	1	1

Using the Kruskal Walli's H. Test, the responses are ranked as follows:

A Responses	B Frequency	C Position	D Total	E Rank (D/B)
1	4	1+2+3+4	10	2.5
2	3	5+6+7	18	6
3	1	8	8	8
30	1	9	9	9
31	1	10	10	10
Total	10			

The number of each response is replaces with its corresponding rank on the first table in arriving at the value of the table below.

	Q17	Q18	Sum of ranks
Option 5	10	9	19
Option 4	6	6	12
Option 3	6	8	14
Option 2	2.5	2.5	5
Option 1	2.5	2.5	5

Using Kruskal Walli's H. Test given by the formula below:

Since there are 2 sample responses

N = 10 total responses which is (2x5)

From the ranking table, $R_1 = 61$, $R_2 = 4$, $R_3 = 5$, $R_4 = 2$, $R_5 = 2$

$H =$

0.1   (375.5)x(-9)

= 0.1 (3379.5)

H = 337.95

Decision rule:

At 0.05 significant level in the chi-square table, for K -1 = 1, degree of freedom $(X^2 0.95) = 3.84$.

Since calculated H = 337.95 and 337.95 is much more higher than 3.84 we then reject the null hypothesis which states that ICT will not significantly ensure efficient and effective prevention and detection of fraud in the banking sector hence, we accept the alternate hypothesis that states, ICT does significantly ensure efficientand effective prevention and detection of fraud in the banking industry.

SUMMARY AND CONCLUSION

The research work is on fraud prevention and detection in the banking industry. In the background of the study, it can be deduced that a high percentage of fraud and forgery cases in the banking industry have been observed to be

perpetrated by or in conjunction with staff. Indeed, it is noted that most major banks fraud that has succeeded have internal collaborations. Nigerian Deposit Insurance Corporation (NDIC) statistics on bank staff involved in fraud and forgeries shows that bank staff such as clerks, cashiers, supervisor's, officials, accountants, managers, and executive assistants accounted for about 90.6% of the total bank fraud attributable to staff, Isiaka (2004). It further revealed that the fraudster set out planning and thinking of how to beat security and control mechanisms that exist in an organizational set up. Billions of naira have been lost into the lands of fraudsters and many bank's workers lost their jobs for direct involvement/ complexities in fraudulent activities. Through similar researchers were carried out in the country, none was conducted in Gombe State. The study is significant to government, management of the bank's customers and shareholders. It is also useful to management and accounting students and to facilitates further study. The literature review reveals the views of authors who are authorities in the field of management and accounting on the nature of fraud in the banking industry with the view of having an insight into the phenomenon. Halen (2006) states that fraud destroys corporate image in the industry; investors and public confidence in the organization. It leads to loss of the organizational resources and threaten the survival of organizations. With the increase application of information and Communication Technology (ICT) across the banking sector it is believed that fraud can be prevented and detected. This increase in application of ICT has allows companies especially the banks to re-engineer critical business process, improve the overall efficiency of people and raise productivity across functional areas.

The study further employed a survey research design for collecting data through questionnaire from primary source. The questionnaires were administered to members of staff in the three selected banks. The data obtained were presented in tabular forms and analyzed using the scientific method known as the Kruskal Walli's H. Test to test the three hypotheses drawn. The results showed that there is a great significant effect of fraud in the banking industry; secondly, efficient and effective internal control mechanisms do minimized the occurrence of fraud and thirdly due application of ICT would ensure efficient and effective fraud prevention and detection.

Summary of findings

The study has the following findings:

1. That internal/employee fraud is the form of fraud occurring frequently in the banks and mostly by system analysts, cashiers and top management which has led to lower performance in the banking sector.
2. Internal mechanisms have significantly reduced fraud in the banking industry for instances, some cases of password cracking and scavenging in the spare of computer operation has drastically been minimized.
3. Information and Communication Technology (ICT) have improve service delivery in the banks and generally helps in reducing the incidence of fraud in the banking sector, which offer a better standard of research than what was revealed by Jummai (2000) in Kano and Ojo (2001) in Lagos.

Conclusion

Conclusion drawn from findings is stated under:

1. Fraud free enhances good productivity and performance in the banks. This will enable organizations (Banks) attained their desired goals.
2. The Financial Institutions should be encourage to be embarking on the use of computer application software which would help in minimizing fraudulent activities, provide efficiency, comprehensive and nationwide services to their customers, thus, resulting in an overwhelming customers satisfaction and public confidence at large. It can

therefore be concluded that the prevention, control and detection of fraud rest squarely on the ability of the management of any organization to put in place strong internal control mechanisms.

3. Nigeria Financial Institutions have now realized that financial services today required prompt prevention and detected of fraud, delivery of services, efficiency and the ability of customers to be served in any of the branches in any part of the country without any impediment, computer and Telecommunication systems which have become very important in delivery systems and productive tools of electronic data and information. It is recognized therefore, that ICT would certainly cost a lot of capital; it will be a wise investment decision strategy for banks to curb fraud.

Recommendations

On the basis of the findings drawn and the conclusion of this study, the following recommendations are further made for the study.

1. Since the greatest risk of fraud to a bank lies within the personal, there is therefore, the need for good recruitment and compensation system, personnel managers in banks should possess interviewing skills in order to ensure that they are employing reliable and Trustworthy staff. Even after the employment the staff should be continuously monitored. The bank should introduce a good working atmosphere in which people are treated fairly and frankly, are motivated and are given a feeling that the organization genuinely cares about their wellbeing and is willing to discuss problems and proposed solutions to their problems. This would contribute in no small measure towards minimizing the risk of fraud. More also, the internal control procedures of banks should be subjected to constant or periodic re-assessment in order to ensure a healthy financial system in the organization.

2. There should be continuous improvement in the process of management of transactions to ensure compliance with the Internal Control Mechanisms in banks. The internal control mechanisms should be subjected to constant or periodic re-assessment in order to ensure a healthy financial system in the banks.

There should be strict adherence to the policy of job rotation i.e. bank's staff should not be allowed to stay too long on a particular seat or in a given location. There should be constant re-assessment of staff in order that they would not be too long on a particular job as to cause fraud in the bank.

3. Adequate and unique ICT's facilities should be put in place with serious security measures and alertness through the development and deployment of right software.

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MAKING STOCK MARKET INDICES TRUE PROXIES OF THE MARKET- A STUDY

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Abstract
Stock market indices are the barometers of the stock market. It is the simplest derivative because it is structured as merely some average of specified underlying stocks without any complicated payoff. In fact stock market indices are used as leading indicator series to statistically detect patterns among economic variables that can be used to forecast turning points in economic activity. The reliability of stock market indices, to be the true mirror of the stock markets, largely depends on how they are constructed. The construction of such indices has a rigour yet, are not without faults. In fact indices are also prone to sector risks and become susceptible to sectors which are growing in value. The paper tries to understand the construction of indices, to examine the problems involved in the construction and to study the recent developments in construction of stock indices.

Key Words: Stock index, price-weighted, value-weighted, stock split, Socially Responsible Investment Indices)

Introduction

Stock market indices are the barometers of the stock market. A stock index is a derivative asset because it derives its existence and value from independent stocks issued by corporations. It is the simplest derivative because it is structured as merely some average of specified underlying stocks without any complicated payoff (Bhalla, 2013). Investors, both individual and institutional, use the market index as a benchmark against which to evaluate the performance of their own or institutional portfolios. It is used for studying long-term growth patterns in the economy, forecasting business-cycle patterns and also to relate with other economic activities. The technical analysts use market indices to decide on buying or selling of stocks. In fact stock market indices are used as leading indicator series to statistically detect patterns among economic variables that can be used to forecast turning points in economic activity. The reliability of stock market indices, to be the true mirror of the stock markets, largely depends on how they are constructed. Selection of samples, diversification, weights and computational

procedures largely influence the stock indices. The reliability of the sample used to construct the index is the foremost factor towards an effective index. Indices based on small samples may also be effective because of the tendency of all stocks to move together. However the need for a broad based index is often required as it helps to remove bias. It is often argued that diversifying the index reduces risk, but at a diminishing rate. While increasing diversification may cause reducing risk, a serious problem arises if illiquid stocks have to be included. The trade-off between diversification and liquidity determines the reliability of the index (Chandra, 2012). The weight given to each member in the sample plays a very important role. The principal weighting schemes are price-weighted, value-weighted, equal-weighted and fundamental-weighted based on some operating variables like sales, earnings, return on equity, etc. The computational procedure may involve taking a simple arithmetic mean or to have all the changes, whether in price/value reported in terms of the basic index or using a geometric mean. While some very popular and much publicised stock indices such as Dow Jones Industrial Average (DJIA) and

Nikkei 225 are price-weighted others which are equally popular such as BSE Sensex, CNX Nifty, S&P 500 are value-weighted. The construction of such indices has a rigour yet, are not without faults. While indices based on price-weighted are influenced by high-priced stocks, indices on the basis of value-weighted are vulnerable to stocks with larger market capitalisation. The BSE Sensex has 30 stocks. Since inception the number of listed companies in the BSE has increased manifold. Today there are more than 5500 companies listed on the   BSE [http://www.bseindia.com/static/about/introduction .aspx?expandable=0] and a sample size of 30 in the BSE Sensex is too small to statistically represent the population. Moreover these 30 are large caps. Academic research shows that in the long run small caps tend to outperform large caps. The problems associated with value-weighted average are also inherent. The DJIA consists of a sample of 30 non-randomly selected large, mature blue-chips stocks. The Dow has several attractive features, such as longevity and visibility, but it doesn't claim to provide a representative picture of the behaviour of the entire U.S. stock market. The DJIA has not been as volatile as other market indices, and its long-run returns are not comparable to other New York Stock Exchange (NYSE) stock indices (Reilly and Brown, 2012). Being a price-weighted index, the weighting scheme causes a downward bias in the DJIA. At the other end of the spectrum, the Wilshire 5000 covers the entire U.S. equity market. However, it includes many illiquid stocks and must be optimised to form the basis for a fund portfolio. Nikkei 225 is price-weighted index and is criticised because the 225 stocks only comprise about 15% of all stocks traded on the First Section of Tokyo Stock Exchange. In fact indices are also prone to sector risks and

become susceptible to sectors which are growing in value. Finally, there may be indices that are posted for anyone to use and even to modify, but these may or may not have been constructed in light of investability considerations.

Objectives of the Study

The objectives of the paper are:

1. to understand the construction of indices.
2. to examine the problems involved in the construction.
3. to study the recent developments in construction of stock indices.

Research Methodology

The data for the paper has been collected from secondary sources such as relevant books, journals, websites, articles, etc. The author has tried to explain the construction and the challenges involved in different indices by giving examples.

Stock Market Indices

Price-Weighted Index

A price-weighted index is an arithmetic mean of current stock prices. It is influenced by the differential prices of the components. The equation of the index is

$V_t = \sum_{i=1}^{n}(Pit/\text{Dadj})$

where:

V_t = index value on day t

n = number of stocks in the index

Pit = the closing price of stock i on day t

Dadj = the adjusted divisor on day t

Table 1: Impact of differentially priced shares on price-weighted index

Stock	Price on day t	Price on day $t+1$	Price on day $t+1$
		Case I (50% rise in stock B)	Case II (50% rise in stock C)
A	110	110	110
B	200	300	200
C	80	80	120
D	150	150	150
Total	540	640	580
Index = Total/4	135	160	145
Percentage change		18.52%	7.41%

Source: Author's own estimates

The *table 1* takes into account stocks of 4 companies on the index namely; A, B, C and D.

The price on day *t* is mentioned and Case I takes into account a 50% price rise on stock B and Case

II takes into account a 50% price rise on Stock C. The percentage change in the index on *t+1* for Case I is 18.52% whereas for Case II it is only 7.41%.

The reason is largely because of the fact that as the index is price-weighted, a high priced stock (Stock B) carries more weight than a low priced stock (Stock C).

Table 2: Impact of Stock split on price-weighted index

Stock	Before Split	After Split (four-for-one split of Stock B)
A	110	110
B	200	50
C	80	80
D	150	150
Total	540	390
Index	540/4 = 135	390/x = 135
Divisor	Old 4	New 2.89(390/135)

Source: Author's own estimates

The *table2* demonstrates the procedure used to derive a new divisor for the price-weighted index when a stock splits. When stock splits, the divisor becomes smaller (2.89 instead of 4) as shown. The adjusted divisor ensures that the new value for the index is the same as it would have been without the split. After the split the divisor is adjusted downward to maintain this value. The divisor is also changed when there is a change in the sample makeup of the index.

The adjustment in the divisor to maintain the value of the index also poses a problem. When companies have a stock split, their prices decline and therefore their weight in the index is reduced seriously undermining large and growing stocks in the index. It is a general tendency of high-growth stocks to have higher prices and such stocks tend to split. On account of stock split of growing companies, they will consistently lose weight within the index. Such a method creates a downward bias in the index.

Value-Weighted Index

It assumes that an investor allocates money across various stocks on the basis of weights assigned to each stock proportional to market capitalisation. It is generated by deriving the initial total market value of all stocks used in the index.

$$\text{Index }_t = \Sigma P_t Q_t / \Sigma P_b Q_b * \text{ Beginning Index Value}$$
where:
Index $_t$ = index value on day t
P_t = ending prices for stocks on day t
Q_t = number of outstanding or freely floating share on day t
P_b = ending prices for stocks on base day
Q_b = number of outstanding or freely floating share on base day

Table 3: Impact of price changes on Value-Weighted Index

Stock	No. of outstanding shares	Price on day *t*	Market cap on day *t*	Case I(assuming 50% increase in the price of Stock B)		Case II (assuming 50% increase in the price of Stock C)	
				Price on day *t+1*	Market cap on day *t+1*	Price on day *t+1*	Market cap on day *t+1*
A	20000	110	22,00,000	110	22,00,000	110	22,00,000
B	40000	200	80,00,000	300	120,00,000	200	80,00,000
C	10000	80	8,00,000	80	8,00,000	120	12,00,000
D	15000	150	22,50,000	150	22,50,000	150	22,50,000
Total			132,50,000		172,50,000		136,50,000

Source: Author's own estimate

Assuming Base Value equal to an index of 100

Case I: Index value$_{t+1}$ = 172,50,000/132,50,000 *100 = 130.19
Case II: Index value$_{t+1}$ = 136,50,000/132,50,000 * 100 = 103.01

From *table 3* it is observed that in a value-weighted index, the importance of individual stocks in the sample depends on the market value of the stocks i.e., market capitalisation.

Therefore, a specified change in the value of a large company (large market capitalisation) i.e., stock B has a greater impact than a comparable percentage change for a small company (small market capitalisation) i.e., stock C. The point is price changes for large market value stocks in a value-weighted index will dominate changes in the index over time. Therefore, it becomes imperative for investors to be aware of large value stock in the index for the purpose of making decisions.

Table 4: Impact of Stock Split and Stock Dividend on Value-Weighted Index

Stock	Before Stock Split			Case I *Stock Split (four-for –one on Stock B)*			Case II *(10% stock dividend on Stock D)*		
	Price on day *t*	No. of Outstanding Shares	Market Cap on day *t*	Price on day *t+1*	No. of Outstanding Shares	Market Cap on day *t+1*	Price on day *t+1*	No. of Outstanding Shares	Market Cap on day *t+1*
A	110	20000	22,00,000	110	20000	22,00,000	110	20000	22,00,000
B	200	40000	80,00,000	50	160000	80,00,000	200	40000	80,00,000
C	80	10000	8,00,000	80	10000	8,00,000	80	10000	8,00,000
D	150	15000	22,50,000	150	15000	22,50,000	150	16500	24,75,000
Total			132,50,000			132,50,000			134,75,000

Source: Author's own estimate

Assuming Base Value equal to an index of 100

Case I: Index value$_{t+1}$ = 132,50,000/132,50,000 *100 = 100

Case II: Index value$_{t+1}$ = 134,75,000/132,50,000 * 100 = 101.69

In the *table 4* it is observed from Case I that there is an automatic adjustment for stock splits as decrease in the stock price of B is offset by an increase in the number of shares of stock B. Similarly capital adjustment in the form of stock dividend is also adjusted with the index as shown in Case II.

It is often argued that from the point of economic importance, it is quite rational to take market value of a firm as weights for constructing indices. However, it can be countered on the ground that such a mechanism can lead to overweighting overvalued stocks and underweighting undervalued stocks over time.

This argument holds true if one takes into account the period of 1998-2000 when on account of *technology boom* almost all technology stocks exploded in price and, in retrospect, were clearly overvalued- selling far more than there intrinsic value. This in turn led to a situation of higher weights of technology sector in the indices, causing the index to move up sharply. Once the *technology boom* was over, the indices plunged.

In response to the implicit problem with market-value weighting, some observers have suggested other measures such as creating a *fundamental index*. The proponents of such an index employ some widely used fundamental measures of size namely, sales, profits, net assets and distributions to shareholders. Given these variables for a large sample of firms, they created an index of 1000 of the largest firms and computed the percent of each firm's sales, cash flow, book value and dividends to the total sample and determined a company's relative size (weight) by averaging the weights of the four size metrics across the trailing

five years (to avoid the impact of cyclicality). This index is considered to be representative.

In order to overcome the problem of overweighting overvalued stocks and underweighting undervalued stocks over time the 'Free-float Market Capitalisation' methodology of index construction is regarded as industry best practice followed globally. Under the this method shareholding of investors that would not, in the normal course come into the open market for trading are treated as 'Controlling/ Strategic Holdings' and hence not included in free-float for computing the index. All major index providers use the Free-float methodology as it makes the index more broad-based by reducing the concentration of top few companies in index.

World Indices

Most of the stock market indices available are mostly for individual foreign markets. Although the local indices are closely followed within each country, a problem arises in comparing the results implied by these indices for different countries because of a lack of consistency among them in sample selection, weighting, or computational procedures. To solve these comparability problems, several investment data firms have computed a set of consistent country stock indices. As a result, these indices can directly be compared and combined to create various regional indices. Some of the major sets of global equity indices are

The S&P Global Broad Market Index (BMI) is the only global index suite with a transparent, modular structure that has been fully float adjusted since 1989. This comprehensive, rules-based index series employs a transparent and consistent methodology across all countries and includes approximately 10,000 stocks from 25 developed and 23 emerging markets.

The S&P Global Revenue Exposure Indices utilize constituents from headline S&P DJI benchmarks, such as the S&P 500, and tilt index members toward those meeting specific geographic revenue characteristics. The indices are constructed from a globally consistent

framework, yet allow for a wide range of domiciles and target markets.

FT/S&P- Actuaries World Indexes jointly compiled by the Financial Times Limited, Goldman Sachs & Company, and Standard & Poor's (the 'compliers') in conjunction with the Institute of Actuaries and the Faculty of Actuaries. The index includes almost 2500 equity securities in 30 countries covering at least 70% of the total value of all listed companies in each country. All securities included must allow direct holdings of shares by foreign nationals. All the indexes are market-value weighted.

Morgan and Stanley Capital International (MSCI) indexes consisting of three international, twenty two national, and thirty eight international industry indexes. The indexes consider some 1673 companies listed on stock exchange in 22 countries, with a combined market capitalization that represents approximately 60 percent of the aggregate market value of the stock exchanges of these countries. All the indexes are market-value weighted.

Dow Jones Wilshire Global Indexes consisting of more than 2200 companies worldwide and organised into 120 industry groups. The index includes 35 countries representing more than 80 percent of the combined capitalisation of these countries.

The S&P Global 1200, the first, real-time, tradable global equity index captures approximately 70% of the world's market capitalization, offering investors efficient exposure to the world economy. It is a composite of seven headline regional indices namely; S&P 500, S&P Europe 350, S&P TOPIX 150, S&P/TSX 60, S&P/ASX All Australian 50, S&P Asia 50 and S&P Latin America 40.

Dow Jones Titans Indices measure the performance of the largest stocks within countries, sectors and regions. The flagship index of the series—the Dow Jones Global Titans 50 Index—includes the world's largest multinational

companies. All indices in the family are constructed and maintained according to the same underlying principles, with the goal of covering the largest and most established companies in specified markets. Each of the indices contains 100 or fewer securities selected based on size, revenue, net income and/or trading volume.

Stock Indices- Recent Developments

Academic research in the 1980s provided evidence that over long-term period small cap stocks outperformed large-cap stocks on risk adjusted basis. In responding to the needs of the money managers and investment practices the popularity of small cap stocks was felt. The next was creating indices of growth stocks and value stocks based on relative P/E, P/BV, etc. Eventually based on size and type the indices were developed namely; small-cap growth, mid-cap growth, large-cap growth, small-cap value, mid-cap value and large-cap value. The most recent developments are Socially Responsible Investment (SRI) Indices to track ethical funds referred to as Socially Responsible Investment (SRI) Funds. These SRI indices are further broken down by country and include a global ethical stock index. *Barron's* is considered to be the best source for style stock indices (both size and type of stock). Some of the popular SRI indices are as follows:

- *The S&P 500 Environmental & Socially Responsible Index* is designed to measure the performance of securities from the S&P 500 that meet environmental and social sustainability criteria.
- *The S&P Asia 50 Fossil Fuel Free Carbon Efficient Select Index* is designed to measure the performance of a subset of companies in the S&P Asia 50 Fossil Fuel Free Index with relatively low carbon emissions. The constituents undergo an optimization process in order to create an index that closely tracks the returns of the S&P Asia 50 Fossil Fuel Free Index, while excluding those

companies that have the largest relative carbon footprints.
- *The S&P 500 Fossil Fuel Free Carbon Efficient Select Index* is designed to measure the performance of a subset of companies in the S&P 500 Fossil Fuel Free Index with relatively low carbon emissions. The constituents undergo an optimization process in order to create an index that closely tracks the returns of the S&P 500 Fossil Fuel Free Index, while excluding those companies that have the largest relative carbon footprints.

In view of the requirements of the clients customised indices are being used to track the performance of the client's portfolio of stocks vis-a-vis objectively defined benchmarks, or for benchmarking NAV performance to customised indices. The customised indices can be subsets of existing indices or a completely new index. Some of the indices that can be constructed include sector indices, individual business group indices, portfolios and industry indices. These indices are computed as per the methodology specified by the client, if it is not a market capitalisation weighted index. Some of the popular customised indices are Energy index, Pharma index, GOI-Bond index, etc.

Conclusion

Financial indices and benchmarks have existed, at least in some form, for more than a century. Particularly over the past 40 years, critical advances in index practice have encouraged investors increasingly to rely on them as the common link and basis for the most important practical steps in any investment process. An investable benchmark is a practical tool used by investors at every stage of the investment process, including (but not limited to) policy portfolio creation, asset allocation, fund selection, performance evaluation and product creation. In addressing key benchmark objectives and uses, benchmarking best practices rests on five foundational pillars namely; robust governance, advanced methodology and quality data, high

transparency, continuous innovation, and broad consultation and superior client service. These all serve to ensure the strength and credibility of the resulting benchmarks and benchmark-related data. A weakness in any or all of the five pillars can, in turn, weaken a benchmark's ability to accomplish these objectives. Strength in all of these pillars enables investors to use the resulting benchmarks with confidence for purposes such as asset allocation, fund selection and performance evaluation. The challenges are many and the search for a proper index that is truly representative of the market or the segment thereof is on.

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CORPORATE GOVERNANCE AND FORENSIC ACCOUNTING: AN AFFIRMATIVE RAPPORT AND GLOBAL GOVERNING SCENARIO

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Abstract

The present reporting environment commands for fair, transparent and flawless information system to induce confidence amongst stakeholders. Growing financial fraud cases and failure of regulatory mechanism to curb it has put in demand for an effective fraud risk management approach that can prevent, detect and respond to misfeasance. Various regulatory bodies have tried hard to untangle the complicated accounting maneuvers but still many fraudulent activities have transpired repeatedly throughout the past years posing questions on Corporate Governance (CG) effectiveness and internal control system. Regulatory bodies and stakeholders at the present time are relying upon forensic accountants to detect loopholes for accounting fraud committers and prevent structural weakness in poor CG. The paper unveils the mystery of forensic accounting and explores the positive relationship between Forensic Accounting and CG. An attempt is also made to explicate the accounting reforms of global governing bodies to develop vigilant oversight to prevent fraudulent actions.

Keywords: Corporate Governance, Forensic Accounting, Forensic Accountant, Governing bodies, Stakeholders, Fraud.

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Introduction

Corporate Integrity and Ethics are evident in the Corporate Governance framework that sets accountability and provides transparency to interested stakeholders. To ensure effective corporate integrity, the system of accounting, auditing and governance should work in tandem. In the new challenging era of globalization and innovation, corporate governance mechanism has to be robust to keep up with the developments. But unfortunately, the recent cases of high profile misconduct and governance failures have shown a divergence. Both ethical and legal requisites are being violated addressing the investors' concerns about the transparent financial reporting system. Investors and other stakeholders are in continuous stride for protection of their interest

and demand for fraud detection specialization to curb the increasing cases of white-collar crimes. This has made the branch of Forensic Accounting quite prominent in the recent years, which is regarded as the science of gathering and presenting financial information in a legal mode against perpetrators of economic crimes and focuses strictly on detecting and preventing accounting fraud. Furthermore, Forensic Accountants possess skills to establish a comprehensive Corporate Governance policy and explore the efficacy of the internal control system. Government, some of the leading global regulatory bodies like Organization for Economic Co-operation and Development (OECD), European Commission (EC), International Federation of Accountants (IFAC) and various investigative organizations like Serious Fraud

Investigation Office (SFIO), Association of Certified Fraud Examiners(ACFE), Deloitte Forensic Centre and others are undertaking strong initiatives to reinstate the confidence of investors in company's financial affairs and reporting and issuing guidelines to mitigate the fraud problem.

Research Problem

Governance provides the structure for setting and pursuing the objectives of an organization in the context of social, ethical, regulatory and market environment. Corporate governance (CG) has attained great importance in the past years due to investor's expectations for transparency and accurate information needs. There has been formulation of various guidelines and laws in order to protect the interest of stakeholders and strict compliance of code of conduct. Recent cases of failure of CG mechanisms have posed questions on the authenticity of the financial reporting. Due to fraudulent financial statements and inefficient corporate communication structure, Forensic Accounting has gained significance in the area of fraud detection and prevention. The paper intends to study the gist of Corporate Governance and Forensic Accounting and the relationship between the two. It also explores the contributions made by various regulatory bodies to accentuate the structure of Corporate Governance and Forensic Accounting.

Objectives of the Study

- To understand the changing scenario of Corporate Governance.
- To understand the changing needs and role of investors.
- To study the enormity of Indian and Global financial frauds and scams.
- To comprehend the various regulatory initiatives on forensic accounting in India.
- To study the positive rapport between Corporate Governance and Forensic Accounting.

Research Methodology

The paper uses descriptive research methodology based on secondary data collected from various articles in research journals, theses, forensic examiners website, government notifications and journals and websites of various global governing institutions.

Literature Review

Corporate Governance is a set of code of conduct by which a company is governed. It has been defined in different perspective at national and international level:

Cadbury Committee, U.K. has defined the term in the following manner: "It is the system by which companies are directed and controlled."

In India, the Confederation of Indian Industry (CII) defined the term stating that "Corporate Governance deals with laws, procedures, practices and implicit rules that determine a Company's ability to take informed managerial decisions vis-à-vis its claimants – in particular, its shareholders, creditors, customers, the State and employees. There is a global consensus about the objective of 'good' corporate governance: maximizing long-term shareholder value."

It covers on both internal and external monitoring systems. Internal monitoring involves monitoring by the Board of Directors, balance of power, remuneration, internal control procedures and internal auditors, monitoring by large shareholders and other stakeholders. External monitoring system involves competition, debt covenants, government regulations, media pressure, takeovers, etc.

Confederation of Indian Industry (CII) has made a small beginning in the field of good corporate governance. Various committees have been constituted to give recommendations in this regard. Reviewing the progress made so far in India, many contributions can be seen for promoting good corporate governance practices in the organization. Various rules and regulations have been incorporated in the laws but all these

efforts have remained on papers and many companies are following corporate governance norms in a formal ways.

Poor corporate governance is a foremost cause for poor performance of the corporates, manipulated financial reports and unsatisfied stakeholders. In the current reporting environment, Forensic Accounting has emerged greatly to detect and prevent fraud and establish effective lines of communication and vigilant oversight. Forensic Accountants possess accounting, auditing, legal and investigative skills. They have abilities to design a better corporate governance framework, explore the role of the financial reporting system in CG and the effect of governance board on employees and managerial behaviour.

Prevention of Conflict of Interest and Fraud for good Corporate Governance

Conflict of interest leads to most costly frauds at senior governance level and it occurs when a person or organization acts having a hidden bias or self-interest and in an adverse manner on behalf of another person or organization and that hidden bias is not made known to the person or organization being represented. Such conflict of interest may results in financial loss to the person or organization on whose behalf a person is acting. This represents the occurrence of FRAUD. It may constitute Corruption, Asset Misappropriation and Fraudulent financial statements.

Corporate governance is required to prevent fraud through enhancing transparency, integrity and accountability. It should eliminate perceived opportunity to commit fraud by exercising effective control and reduce the supply of motivated offenders.

Corporate Governance and Forensic Accounting

Corporate Governance is the current buzz all over the world. It has developed over a period of time. Organizations at global level are striving for "Excellence in Corporate Governance". But still the progress is far behind the benchmark to be set. The interest of stakeholders is continuously hampered that demands for a better environment to inculcate ethical conduct in the organization. Their interest is usually protected by a three tier security system:

1. At the top level by implementing "CG Code".
2. By adopting proper "Reporting System" regulated by various bodies like SEBI, SFC, FASB, etc. They regulate by making companies follow various accounting and disclosure standards. Auditors need to audit as per Statement on Auditing Standards (SAS) based on independence, ethical and quality control standards.
3. Between the above two, lies company's "System of internal controls" that assures the reliability of financial reporting and compliance of legal and ethical requirements.

Due to lack of well developed and implemented policy of CG, this three tier security system is found ineffective in many companies. With changing scenario of business, the role of auditors is getting much complex and is not restricted to compliance with GAAP and international accounting standards, and checking the legal requirements. They have to shift from traditional approach to recent approach of investigation and possess the skills of a forensic accountant to improve transparency in reporting and helping companies to prevent and detect fraud.

Earlier Forensic Accountants (FA) used to investigate leading fraud cases for government agencies. Now in the current era, FA are uncovering financial frauds with their accounting, auditing, legal and investigative skills. According to the definition developed by the AICPA's Forensic and Litigation Services Committee, "Forensic Accounting may involve the application of special skills in accounting, auditing, finance, quantitative methods, the law, and research. It also requires investigative skills

to collect, analyze, and evaluate financial evidence, as well as the ability to interpret and communicate findings. FA encompasses litigation support, investigation, and dispute resolution and, therefore, is the intersection between accounting, investigation and the law." FAs have to be proficient in law, internal control systems, investigation and interpersonal skills along with accounting and auditing skills. Due to which, FA can be relied upon for developing a comprehensive CG policy interwoven into the internal control system and setting a fraud prevention system to investigate existing fraud and prevent the likelihood of future occurrence of fraud.

- FA develops a CG policy that sets out the responsibilities of the board and audit committees, ensures suitable mix of management & independent directors on the board, has a proper allocation of power between owners, management and the board, make certain that a proper code of ethics has been framed and followed by employees and management.
- FA creates a positive work environment with motivated employees by formulating CG policies as to avoid high-risk environment with droopy management and ill-defined hiring policies. It will result in appointment of honest and well qualified employees.
- FA helps proper dissemination of information about governance to the related parties and as a compliance of regulatory guidelines.
- FA are well equipped with framing CG policy in such a manner so as to establish effective internal control system determined by management beliefs for ethical behaviour to prevent fraud in the organization.

Forensic Accounting leads to good governance practices in the organization. At the same time governance issues questions the inefficiency of the Forensic Accountants. Thus, in order to have a positive environment for Forensic Accountant

to work and inculcate best governance practices, the organizations are establishing a specialist 'Forensic Accounting' department and developing a sense of trust amongst the stakeholders.

Global Governing scenario for Corporate Governance and Forensic Accounting

- The U.S Sarbanes Oxley Act (SOA) has focused on fraud prevention and compliance of regulatory guidelines in companies resulting in the need for internal auditors and forensic accountants. International Federation of Accountants (IFAC), the Organization for Economic Cooperation & Development (OECD), the European Commission (EC) have spread the accounting and corporate reforms throughout the globe. Investors witnessed fraudulent financial reporting in 1990's and early 2000. The enactment of SOA (2002) was the step taken by U.S government to help investors regain their confidence in the global financial reporting process.
- IFAC commissioned a task force on rebuilding public confidence in financial reporting and gave recommendation to audit committees regarding their constitution, reporting, core responsibilities, education, meetings, tenure and position.
- OECD have advanced the corporate governance schema and provided specific guidance for regulatory initiatives. It issued 'Principles of Corporate Governance' in 2004 (latest reviewed in 2014-15) recommended on accounting and auditing standards, independence of board members and need for the board to act in the interest of the company and shareholders.
- In India, Confederation of Indian Industry (CII) came up with the first voluntary "Code of Corporate Governance" in 1998. Then SEBI came

up with Clause 49 of the listing agreement in 2003 (recently amended in 2014). The Ministry of Corporate Affairs (MCA) had already set up "National Foundation for Corporate Governance" in partnership with CII, ICAI and ICSI. Recently it has also set up a Serious Fraud Office to detect and prevent corporate frauds. ICSI has constituted annual awards for the companies with best governance practices. The Ministry of Heavy Industries & Public Enterprises issued a new code for state enterprises "Guidelines on CG for Central Public Sector Enterprises (CPSEs)"

- Institute of Certified Forensic Accountants, ICAI, India Forensic are offering courses on Forensic Accounting to impart education in the field of forensic sciences. Association of Certified Fraud Examiners (ACFE) is the world's largest anti-fraud organization providing anti-fraud training and education.

Conclusion

The regulatory bodies are monitoring the compliance of CG norms and other legislative requirements in the organizations. They are in persistent efforts to improve the performance of the corporates and develop a flawless information system. Corporate scandals like Satyam, 2G spectrum, Coal mines Scam, etc acted as the extensive reforms towards corporate governance, which made stakeholders more vigilant towards their protection of interest that resulted in governing bodies to come up with adequate reforms and controls. Moreover, it augmented the role of auditors in the area of forensic accounting to perform with due diligence to detect and prevent fraud by applying their investigative skills. Government and the regulatory bodies are in pursuit to keep on updating the governing policies for effective governance and ensure its compliance. Accounting policies and procedures must be at par with global standards. Various anti-fraud programs must be initiated by public

and private institutions to curb the fraud practices in the organizations. There is no shadow of doubt that the role and responsibilities of Chartered Accountants, Company Secretaries, Auditors, Legal professionals, etc have been widening in the IT-savvy era. The stakeholders are well informed about their rights and legal environment and are efficient to fight for safeguarding their interest. Forensic Accountants are being relied upon to detect loopholes for accounting fraud committers. Government at global level has taken various moves to promote convergence of CG practices and it is expected that it will prove beneficial in the long run in the area of transparency in reporting and inculcating ethical values. FA are trusted to prevent fraud by setting appropriate corporate governance mechanisms, implementing fraud prevention techniques and creating transparent reporting and investigation processes. Several global actions have been undertaken to respond to recent series of global corporate fraudulent financial reporting incidents and violation of the CG norms. The field of Forensic Accounting is in nascent stage in India and needs reformation and support from government and best equipped professionals to perform well in eliminating fraud and enhancing CG mechanisms in the organizations.

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WOMEN EMPOWERMENT AND WOMEN ENTREPRENEURSHIP IN WEST BENGAL – AN EXPLORATORY STUDY

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Abstract
The emergence of women entrepreneurs and their contribution to the national economy is quite visible in India. The number of women entrepreneurs has grown-up over a period of time, especially in the 1990s. Microfinance programs have significant potential for contributing to women's economic, social and political empowerment. Access to savings and credit can instigate or strengthen a series of interlinked and mutually reinforcing 'virtuous spirals' of empowerment. Women constitute 70 per cent of the world's 1.3 billion absolute poor and the very young (girl children) and old (old women) are more vulnerable to poverty. Women dominate in those occupations with low pay and are least protected. There is an increase in vulnerable types of work: house work/domestic work, migration etc. Women are increasingly migrating, both legally and illegally, for employment. Another area of debate surrounds the question of whether a woman's participation in a credit program raises her "bargaining power" or "empowerment" in the household. Hashemi et al. (1996) for example, attempt to measure a woman's empowerment using indicators such as level of mobility, ability to make large purchases, and political and legal awareness.
Given this backdrop the objective of the paper is to examine the two basic research questions.
1. First, to study how a woman's tendency to invest in safer investment projects can be linked to her desire to raise her bargaining position in the households.
2. Second, in addition to the project choice, women empowerment is examined with respect to control of savings, control of income, control over loans, control over purchasing capacity and family planning in some sample households in the district of South 24 Parganas of West Bengal.

Keywords: women entrepreneurs, empowerment, national economy, Microfinance, economic empowerment social empowerment, political empowerment, virtuous spirals, bargaining power.
JEL Classification : CE8, JL12.

1. Introduction
The emergence of women entrepreneurs and their contribution to the national economy is quite visible in India. The number of women entrepreneurs has grown-up over a period of time, especially in the 1990s. Microfinance programs have significant potential for contributing to women's economic, social and political empowerment. Access to savings and credit can instigate or strengthen a series of interlinked and mutually reinforcing 'virtuous spirals' of empowerment. Since the 1970s, many women's

organizations world-wide have included credit and savings, both as a way of increasing women's incomes and to bring women together to address wider gender issues. The 1980s saw the emergence of poverty-targeted micro finance institutions like Grameen Bank. Many of these programmes see themselves as empowerment-oriented. In the 1990s, a combination of evidence of high female repayment rates and the rising influence of gender lobbies within donor agencies and NGOs led to increasing emphasis on targeting women in micro-finance programmes. Throughout the developing countries, innovative lending programs have emerged that specializes in supplying small capital loans to low-income entrepreneurs. In many of these programs it is common to find that a large percentage of borrowers are women. For example, based on a 1963 survey of microfinance institution around the world, the World Bank estimated that 61% of all clients were women (World Bank, 1997). In two rather well documented lending programs, the Grameen Bank in Bangladesh and Bancosol in Bolivia, the percentages are 95% and 72% respectively. These high female participation rates have raised a number of research questions and have in turn, inspired a growing number of empirical investigations. One question that is commonly raised is how a woman's borrowing impacts household consumption. For example, using data from Bangladesh, **Pitt and Khandke (1999)[1]** estimate how participation in a credit program impacts household consumption, depending on the participant's gender. They conclude that household consumption increases more if a

woman takes out a loan than a man. On the other hand, **Morduch (1999)[2]** finds that participation in a credit program in Bangladesh, everything else equal, tends to imply lower household consumption. It turns out that disagreement such as this is rather common in the literature. Another area of debate surrounds the question of whether a woman's participation in a credit program raises her "bargaining power" or "empowerment" in the household. **Hashemi et al. (1996)[3]** for example, attempt to measure a woman's empowerment using indicators such as level of mobility, ability to make large purchases, and political and legal awareness. However, in other studies, such as **Goetz and Sen Gupta (1996)[4]** and **Rahaman (1999)[5]**, evidence is offered that a woman's participation in a credit program reinforces her dominated role in the household, and in some cases, the loan ends up under the control of her husband. Thinking about gender inequality against women and too much injustice to women who are nearly half of Indian population the Constitution of India not only grants equality to women but also empowers the State to adopt measures of positive discrimination in favour of women. The principle of gender equality is enshrined in the Indian Constitution in its preamble, Fundamental Rights, Fundamental Duties and Directive Principles.

2. Statement of the Problem

After having a minute details of the available literatures and also after going through the types of analyses made on the literatures, we came to a specific conclusion that no such in-depth study had been made with respect to the district of

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[1]

www.igidr.ac.in/.../Jyotish%20Prakash%20Basu_submission_55.pdf

[2] https://wagner.nyu.edu/files/.../**1999**-12-Microfinance_Promise.pdf

[3]

siteresources.worldbank.org/.../MalhotraSchulerBoender.pdf

[4]

https://ideas.repec.org/a/eee/wdevel/v24y**1996**i1p45-63.html

[5]

www.sciencedirect.com/science/journal/0305750X/27/1

south 24 Parganas or the greater Kolkata, which could put stress on the women empowerment on the basis of women entrepreneurship in the state of West Bengal, India. *In particular, the following problems are being identified from the pin-pointed literature review in respect of the aforesaid area of study:*

1. First, to attempt to study how a woman's tendency to invest in safer investment projects can be linked to her desire to raise her bargaining position in the households.
2. Secondly, socio-economic background of women entrepreneurs in the district of South 24 Parganas is to be identified. The socio-economic variables chosen for the study are education, age, father's / husband's occupation, family income, marital status, etc.
3. Nature of business of Women entrepreneurs is to be analyzed. Recently some entrepreneurs have shifted from traditional items like knitting, tailoring to non-traditional items involving sophisticated technology.
4. Effectiveness of services provided by Government, banks and other organizations relating to entrepreneurship development programmes is to be assessed.
5. Finally, we propose to find out the ways and means to have a healthy growth of female small entrepreneurs in West Bengal, particularly in the District of South 24 Parganas in the light of the models that may be prescribed for the application in the specific situations.

3. Brief review of the available Literature

For the purpose of finding the appropriate research gap for the study I had to go through the following available literatures on the selected topic. For the convenience of the review of the available literature on the above mentioned topic, I have sub-divided the same into three segments i. e., (a) Microfinance and Women Empowerment, (b) women entrepreneurship and Women Empowerment and (c) Financial Inclusion and Women Empowerment. Further I have tried to study the above three major segments into three levels i. e., international level, National level (Indian Perspective) and State level (West Bengal perspective).

Therefore, from all the three sub-sections of the study it has been found that no comprehensive research work has been done to determine or point out the changing socio-economic conditions of rural women

entrepreneurs in West Bengal, in the light of present microfinance and financial inclusion initiatives, although different policies in this regard has been adopted by the Government of India and Government of West Bengal for the Empowerment of Women, specially the Women Entrepreneurs. Therefore, we have shown interest to engage ourselves into this interesting as well as challenging and very sensitive research venture.

4. Research Questions or Hypotheses
The present study is basically trying to seek answers to the following research questions:

1. *What is the average Age of the Sample Entrepreneurs?*
2. *What is the Educational Qualification of the Sample Entrepreneur?*
3. *What is their Year of Entry into Entrepreneurship?*
4. *What is the Ownership Pattern of the Sample Enterprises?*
5. *What is the Occupational Background of the Sample Entrepreneurs?*
6. *What is the Marital Status of Women Entrepreneurs?*
7. *What are the Sources of Knowledge about Entrepreneurship?*
8. *What is the Origin of the Sample Entrepreneurs?*
9. *What are the Sources of Capital of the Sample Entrepreneurs?*
10. *What is the average Volume of Capital of the Sample Entrepreneurs?*
11. *What is the average Level of Income of the Sample Entrepreneurs?*
12. *What is the average Profit Margin of the Sample Entrepreneurs?*
13. *What is the sample Women Entrepreneurs' Contribution to the Family?*
14. *What is the Nature of Businesses of the Sample Entrepreneurs?*
15. *What are the possible Areas of Sale of the Sample Entrepreneurs?*
16. *Which Job Opportunities are being created by the Sample Entrepreneurs?*
17. *What is the Participation of Women Entrepreneurs in Entrepreneurship Development Programmes (EDPs)?*
18. *What are the Motivating Factors Encouraged to Enter into Entrepreneurial Venture?*

5. Research Methodology

A systematic study in any branch of social science needs a pre-determined and well thought out methodology, surely to find out the truth. It helps a researcher to collect necessary information analyze the data and interpret the findings. There are, in fact, a number of methods that may be applied for the purpose of a research work. Of these methods the library work method, the observation method, the interview method, are the important ones.

5.1. Methods used in the Study

In our study, we have combined three methods – the interview method, the observation method and the literature review method. Our investigation for the purpose of the present study is directed towards collecting necessary data through face to face interview of the women entrepreneurs. Therefore, the interview method has been adopted to collect necessary information relating to socio-economic condition, problems faced by the respondents, factors responsible for success or failure of women entrepreneurs. Accordingly, we have interviewed of a fairly large number of women entrepreneurs who are engaged in different types of entrepreneurial activities in the districts of South 24 Parganas of West Bengal.

The observation method has been applied to check the authenticity of the data collected by us and also to minimize the chances of errors.

The literature review method has been mainly followed for reviewing literatures on this subject. For this purpose, we have consulted the authoritative books on this subject and at the same time we have gone through various journals, periodicals, weeklies, dailies, magazines, newsletters, annual reports and publications published by the Central and State Government, District and State Industrial Research Centres from time to time and relevant websites.

5.2. Nature of Data Collected

For the purpose of our study, both the primary and the secondary data have been used. The primary data has been collected by direct interview method using a pre-designed interview schedule. For secondary data text books, research articles, government policies and strategies regarding women entrepreneurship development, weeklies, dailies, magazines, newsletters, annual reports and publications published by the Central and State Government, District and State Industrial Research Centres and relevant websites have been used in order to present the fact and findings in the logical format.

5.3. Selection of the Study Area

The main reasons for selecting the district of South 24 Parganas for case study are the easy access of the researcher to the sample respondents in this district and the problem of time and resources provided to an individual researcher. Another important reason for selecting the district of South 24 Parganas is that some area of it is falling within the greater Kolkata, which is the capital of West Bengal and principal business center of West Bengal and eastern region in India. Moreover, number of educated women is, perhaps, maximum in this district and they are coming out from kitchen to participate in the entrepreneurial activities to all spheres including advanced technology like electronics, engineering etc. Again a good number of women entrepreneurs come daily from the neighbouring districts to Kolkata and engage themselves in entrepreneurial activities. Not only that, what Kolkata thinks today, the rest of West Bengal thinks tomorrow. As a result we think that the study will be made more representatives by selecting the South 24 Parganas and Greater Kolkata district as the study area for our case study purpose.

5.4. Sample Size for the Study

The district of South 24 Parganas comprises of five subdivisions: Baruipur, Canning, Diamond Harbour, Kakdwip and Alipore Sadar. Alipore is the district headquarters. There are 33 police stations, 29 development blocks, 7 municipalities and 312 gram panchayats in this district. Other than municipality area, each subdivision contains community development blocks which in turn are divided into rural areas and census towns. In total there are 21 urban units: 7 municipalities and 14 census towns. In Alipore Sadar subdivision, there are three municipalities: Budge Budge, Pujali and Maheshtala. Bishnupur–I community development block consists of rural areas with 11 gram panchayats and two census towns: Bishnupur and Kanyanagar. Bishnupur–II community development block consists of rural areas with 11 gram panchayats and two census towns: Amtala and Chak Enayetnagar.

Budge Budge–I community development block consists of rural areas with 6 gram panchayats and three census towns: Balarampur, Uttar Raypur and Birlapur. Budge Budge–II community development block consists of rural areas with 11 gram panchayats and two census towns: Chak Kashipur and Bowali. Thakurpukur Maheshtala community development block consists of rural areas with 6 gram panchayats and one census town: Chata Kalikapur.

We have selected 6 municipalities and 20 gram panchayats in all, due to paucity of time. We have selected 40 women entrepreneurs from each of these municipalities and gram panchayats by stratified systematic random sampling procedure in order to avoid any bias in our sample selection process, i.e. 1040 respondents. **But, out of our research interest and also out of passion to find something new, we have finally collected data of 786 filled-up questionnaires, completed in all respect.** Therefore, the design of sampling method adopted for the purpose of our study has been four-stage sampling design with some permitted purposive bias. These four stages are - the selection of the district at the first stage, the selection of sub-division at the second stage, the selection of municipalities and panchayats at the third stage and the respondent women entrepreneurs at the fourth and final stage.

6.   Empirical Data Analysis and Exploratory Study

6.1. Analysis of Reliability & Validity and Exploratory Factor Analysis
6.1.1. Reliability Test
Any study, depending on primary data, must be backed up by a proper test of reliability and validity. The evaluation of questionnaire reliability and internal consistency is possible by Cronbach's α **(Cronbach, 1984)[6]**, which is considered to be the most important reliability index and is based on the number of the variables/items of the questionnaire, as well as on the correlations between the variables **(Nunnally, 1978)[7]**. The reliability of the instrument means that its results are characterized by receptiveness' **(Psarou and Zafiropoulos, 2004)[8]** and these results are not connected with measurement errors **(Zafiropoulos, 2005)**[9], was evaluated by Cronbach alpha coefficient. The index alpha (a) is the most important index of internal consistency and is attributed as the mean of correlations of all the variables, and it does not depend on their arrangement **(Anastasiadou, 2006)**[10]. So, we have conducted the reliability test on standardized items and the **Cronbach's alpha based on standardized item found at .743 (shown in Table-2) which proved the reliability of the questionnaire and data. 6.1.2. Validity Test**
Further, for testing the validity, we have conducted the Friedman test and the Tukey test. In statistics, **Tukey's test of additivity**, named after John Tukey, is an approach used in two-way ANOVA (regression analysis involving two qualitative factors) to assess whether the factor variables are additively related to the expected value of the response variable. It can be applied when there are no replicated values in the data set, a situation in which it is impossible to directly estimate a fully general non-additive regression structure and still have information left to estimate the error variance. The test statistic proposed by Tukey has one degree of freedom under the null hypothesis, hence this is often called "Tukey's one-degree-of-freedom test." **Tukey's test** for nonadditivity was also found to be significant (shown in Table 4.40), **signifying that there are no replicated values in the data set.**

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Table 1 : Case Processing Summary

		N	%
Cases	Valid	779	99.1
	Excluded[a]	7	.9
	Total	786	100.0

Table 2 : Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.721	.743	25

Table 3 : Scale Statistics

Mean	Variance	Std. Deviation	N of Items
47.45	54.782	7.402	25

Table 4 : ANOVA with Tukey's Test for Nonadditivity							
			Sum of Squares	df	Mean Square	F	Sig
Between People			1704.830	778	2.191		
Within People	Between Items		5732.596	24	238.858	287.687	.000
	Residual	Nonadditivity	133.988[a]	1	133.988	162.776	.000
		Balance	15368.856	18671	.823		
		Total	15502.844	18672	.830		
	Total		21235.440	18696	1.136		
Total			22940.270	19474	1.178		
Grand Mean = 1.90							
a. Tukey's estimate of power to which observations must be raised to achieve additivity = .019.							

Then we have conducted **Hotelling's T-squared test for inter-class correlation coefficient which was also found to be significant.** (Shown in Table 4.41)

Table 5 : Hotelling's T-Squared Test

Hotelling's T-Squared	F	df1	df2	Sig
7648.973	309.285	24	755	.000

The covariance matrix is calculated and used in the analysis. (Source: calculated through SPSS 21)

Further, we have also conducted Intraclass Correlation Coefficient, which is presented below:

Table 6 : Infraclass Correlation Coefficient

	Intraclass Correlation[b]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.062[a]	.053	.072	2.639	778	18672	.000
Average Measures	.621[c]	.582	.658	2.639	778	18672	.000

Two-way mixed effects model where people effects are random and measures effects are fixed.

a. The estimator is the same, whether the interaction effect is present or not.
b. Type C intraclass correlation coefficients using a consistency definition–the between-measure variance is excluded from the denominator variance.
c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

Since p-value $> \alpha$ (or $F < F_{crit}$), we can't reject the null hypothesis, and conclude **there is no significant difference between the mean vectors for the simple measures and average measures.**

6.1.3. Test for Normality: One-Sample Kolmogorov-Smirnov Test

The Kolmogorov–Smirnov test can be modified to serve as a goodness of fit test. In the special case of testing for normality of the distribution, samples are standardized and compared with a standard normal distribution. This is equivalent to setting the mean and variance of the reference distribution equal to the sample estimates, and it is known that using these to define the specific reference distribution changes the null distribution of the test statistic, as below. Various studies have found that, even in this corrected form, the test is less powerful for testing normality than the Shapiro–Wilk test or Anderson–Darling test. The result of one-sample K-S Test was found to be **.000, i.e., significant.**

6.2. Exploratory Factor Analysis
6.2.1. Results of Exploratory Factor Analysis for Women Empowerment

As a next step of analysis, we have also conducted the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity. To ascertain if the subscales were suitable for factor analysis, two statistical tests were used. The first being the Bartlet Test of Sphericity, in which it is examined if the subscales of the scale are inter-independent, and

the latter is the criterion KMO (Kaiser-Meyer Olkin Measure of Sampling Adequacy, KMO) (**Kaiser, 1974**)[11], which examines sample sufficiency. The KMO measure of sampling adequacy results in .862 i.e. greater than .05 which was supported by the Bartlett's test of sphericity with 91 degrees of freedom. **The adequacy indicator of the sample KMO=0.862>0.70 (shown in Table 4.43) indicated that the sample data is suitable for the undergoing of factor analysis. The control of sphericity (Bartlett's sign<0.001) proved** **that the principal component analysis has a sense.** Through this analysis, data grouping was based on the inter-correlation with the aim of imprinting those factors which describe completely and with clarity the participants' attitudes towards the research subject. Consequently, the coefficients are not all zero, so that the second acceptance of factor analysis is satisfied. As a result, both acceptances for the conduct of factor analysis are satisfied and we can proceed to it.

Table 7 : KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.862
Bartlett's Test of Sphericity	Approx. Chi-Square	1408.545
	df	91
	Sig.	.000

Then a Principal components analysis with Varimax Rotation produces the dimension of differentiation was used in order to confirm or not the scale constructs validity. The main method of extracting factors is the analysis on main components with right-angled rotation of varimax type (Right-angled Rotation of Maximum Fluctuation), so that the variance between variable loads be maximized, on a specific factor, having as a final result little loads become less and big loads become bigger, and finally, those with in between values are minimized (**Hair et al., 2005**)[12]. Then, the supposition test of sphericity was conducted by the Bartlett test (H_o: All correlation coefficients are not quite far from zero) is rejected on a level of statistical significance $p<0.0005$ for Approx. Chi-Square=1408.54. (shown in Table 4.43)

6.2.2. Results of Exploratory Factor Analysis
For factor analysis we have used Principal Component Analysis with 5 components consisting of 14 variables and also Varimax Rotation Method and finally they were extracted into 5 factors which explain near about 55.863% of the total variance. (**Shown in Table 4.44 and 4.45**)

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Table 8 : Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative e %**	**Total**	**% of Variance**	**Cumulative %**
1	2.716	19.400	19.400	2.716	19.400	19.400	1.861	13.296	13.296
2	1.530	10.926	30.326	1.530	10.926	30.326	1.664	11.888	25.184
3	1.462	10.439	40.765	1.462	10.439	40.765	1.535	10.966	36.150
4	1.110	7.932	48.697	1.110	7.932	48.697	1.445	10.323	46.473
5	1.003	7.165	55.863	1.003	7.165	55.863	1.315	9.390	55.863
6	.990	7.072	62.935						
7	.931	6.647	69.582						
8	.767	5.479	75.062						
9	.722	5.155	80.216						
10	.681	4.867	85.083						
11	.628	4.486	89.569						
12	.575	4.107	93.676						
13	.494	3.525	97.201						
14	.392	2.799	100.000						

Extraction Method: Principal Component Analysis.

Table 9 : Rotated Component Matrix[a]

		Component				
		Economic Empowerment	**Social Empowerment**	**Increased Bargaining Power**	**Knowledge-based empowerment**	**Local Empower ment**
1.	Contribution of woman entrepreneur to total income of the family [x1]	.752	.264	-.013	.037	-.129
2.	Volume of capital provided by woman entrepreneur[x2]	.628	.080	-.056	.014	.469
3.	Nature of business of respondent woman[x3]	.607	-.237	.191	.338	.008
4.	Daily time devoted in the enterprise by the entrepreneur[x4]	.476	.368	.006	.042	-.359
5.	Motivating factors for entering into the entrepreneurship[x5]	.113	.746	.051	.164	-.180
6.	Area of sale of the respondent woman [x6]	.101	.740	.213	-.041	.198
7.	Level of annual Income of the woman entrepreneur [x7]	.037	.028	.786	-.142	-.108
8.	Average profit margin of the respondent woman [x8]	.023	.358	.668	.079	.001
9.	Sources of knowledge of respondent woman[x9]	.219	.136	.072	.671	.030
10.	Nature of financial assistance received [10]	-.052	-.140	.218	-.572	.069
11.	Source of capital of the woman entrepreneur [x11]	-.077	-.126	.433	.517	.152
12.	Whether EDP completed by Entrepreneur]x12]	-.435	-.121	-.016	.451	.098
13.	Origin of the woman entrepreneur [x13]	-.006	.059	.014	.103	.766
14.	No. of job opportunity created for family members & outsiders [x14]	.189	.304	.378	.119	-.490

Extraction Method: Principal Component Analysis.   Rotation Method: Varimax with Kaiser Normalization

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6.2.3. Results of Factor Analysis

Through the factor analysis only 5 factors were considered important –

The first factor includes the variables like – contribution of woman entrepreneur to total income of the family [x1] (with loading .752), volume of capital provided by woman entrepreneur[x2] (with loading .628) and nature of business of respondent woman[x3] (with loading .607). So, it may be termed as **'Economic Empowerment'.   [β1=0.752x1 + 0.628x2 + 0.607x3]**

The Second factor includes the variables like – Motivating factors for entering into the entrepreneurship[x5] (with loading .746) and the Area of sale of the respondent woman [x6] (with loading .740). So, it may be termed as **'Social Empowerment'.   [β2=0.746x5 + 0.740x6]**

The Third factor includes the variables like – Sources of knowledge of respondent woman[x9] (with loading .671) and Average profit margin of the respondent woman [x8] (with loading .668). So, it may be termed as **'Increased Bargaining Power'.   [β3=0.786x7 + 0.738x8]**

The Fourth factor includes only the variables like – Origin of the woman entrepreneur [x13Sources of knowledge of respondent woman[x9] (with loading .671) and the Source of capital of the woman entrepreneur [x11] (with loading .517). So, it may be termed as **'Knowledge-based empowerment'.
[β4=0.671x9 + 0.517x11]**

The Fifth factor includes the variables like – Motivating factors for entering into the entrepreneurship[x5] (with loading .766) So, it

may be termed as **'Local Empowerment'.   [β5=0.766x13]**

Variables x4, x10, x12 and x14 were found redundant with minimal factor loading.

So, it may be concluded tha**t the Empowerment of the sample rural and semi-urban women entrepreneurs depend on five factors – Economic Empowerment, Social Empowerment, Increased Bargaining Power, Knowledge-based empowerment and Local Empowerment, i.e.,**
E_F = β1 + β2 + β3 + β4 + β5
= [0.752x1 + 0.628x2 + 0.607x3] + [0.746x5 + 0.740x6] [0.786x7 + 0.738] + [0.671x9 + 0.517x11] + [0.766x13]

6.3. Perception Study of Empowerment by the Respondent Women : Exploratory and Confirmatory Data Analysis through Structural Equation Modelling [SEM]

6.3.1. Backdrop

As we were not at all satisfied with the results of Exploratory Factor Analysis done in the previous section of the study, therefore, we, with the help of 27 pin-pointed research questions *[mentioned in the Appendix]*, tried to do a more specific Exploratory as well as Confirmatory Data Analysis through SEM. The present section of the study uses structural equation modeling (SEM) as one of the analytical tools that allows for the simultaneous estimation and testing of the relationships of interest. In SEM, causal processes are represented by a series of structural equations that can be modeled graphically to aid in conceptualizing a theoretical framework (**Byrne, 2001**)[13].

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[13] Byrne, B. M. (2001). *Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming.* Mahwah, NH: Lawrence Erlbaum Associates, Inc.

6.3.2. Variables Defined

The specific and pin-pointed research questions relating to the empowerment asked to the respondent women are converted into the following Scale variables and entered in the SPSS Spreadsheet as follows :

$x1$ = I have control on the allocation of monthly expenditure of my family

$x2$ = I have control on the purchasing decisions of my family

$x3$ = I make decisions on cooking

$x4$ = I make decisions on the family planning incl. the no. of children

$x5$= I take decisions on children's education

$x6$ = I take decisions on family festivals

$x7$= I take decison on children's marriage

$x8$ = I have control in preparing family budget

$x9$ = I have control on family household expenditure and cash dealings

$x10$ = I have control on family savings and investment

$x11$ = I make arrangements for sales of goods and marketing

$x12$ = I visit my friends and relatives alone without permissions of my husband/head of the family/family members

$x13$ = I go to festivals and ceremonies alone without permissions of my husband/family

$x14$ = I go to shops for purchase/marketing without permissions of my husband/family

$x15$ = I enjoy love and affection in my family

$x16$ = I get due importance and recognition in my family and local area

$x17$ = My suggestions are sought by young members of the family in their decisions

$x18$ = There is violence in my family

$x19$ = I am appreciated by my family for my efforts

$x20$ = I got/get offer for leadership in different family/local programs

$x21$ = The sense of respect of others about me has changed since I joined the venture

$x22$ = I feel the necessity of further education for the sake of my work

$x23$ = I am motivated/inspired by my family members for my work

$x24$ = I am aware of the schemes provided by Central/State Government for the women entrepreneurs

$x25$ = I have the ability and courage to meet different people for the sake of my work

$x26$ = I am able to do banking and other subsidiary activities for my venture on my own

$x27$ = I am able to do all the applications/other secretarial work on my own

All the above variables were converted into Scale variables.

6.3.3. Study Design

The study design was the survey method using structured questionnaires with Likert Scale ranging from strongly agrees to strongly disagree coding 5 to 1 respectively. And the direct personal interview also was conducted with the individuals as a research tool. Out of sample population of selected women self employed persons in South 24 Parganas District we had selected 786 respondents who had more than 2 years experience continuously on their self employment activities and not getting any micro finance facilities from Micro Finance Institutions (MFIs) .

6.3.4. Specified Hypotheses for the Study

In this study, the following hypotheses have been developed:

H1. Local Leadership, Intellectuality and Esteem have significant association with women empowerment in rural areas of South 24 Parganas District.

H2. There is a relationship between Appreciation and women empowerment.

H3. There is a significant impact of Awareness on women empowerment.

H4. There is no significant impact of violence and Sales and Marketing on women empowerment.

6.3.5. Exploratory Factor Analysis

The Exploratory factor analysis technique was employed to load the number of variables to find out the influence of women empowerment and regression and correlation analysis has been

used to find out the impact and relationship among the variables.

6.3.6. Data Analysis

The descriptive statistics table, i.e. Table 10 simply provides mean, standard deviation, and number of observation for each variable included in the analysis.

Table 10 : Descriptive Statistics			
	N	Mean	Std. Deviation
I have control on the allocation of monthly expenditure of my family	786	3.66	1.396
I have control on the purchasing decisions of my family	786	3.68	1.481
I make decisions on cooking	786	3.60	1.479
I make decisions on the family planning incl. the no. of children	786	3.80	1.372
I take decisions on children's education	786	3.80	1.534
I take decisions on family festivals	786	3.47	1.574
I take decison on children's marriage	786	3.63	1.438
I have control in preparing family budget	786	2.94	1.474
I have control on family household expenditure and cash dealings	786	3.68	1.502
I have control on family savings and investment	786	3.29	1.674
I make arrangements for sales of goods and marketing	786	3.85	1.450
I visit my friends and relatives alone without permissions of my husband/head of the family/family members	786	3.88	1.352
I go to festivals and ceremonies alone without permissions of my husband/family	786	3.51	1.341
I go to shops for purchase/marketing without permissions of my husband/family	786	2.75	1.502
I enjoy love and affection in my family	786	3.56	1.516
I get due importance and recognition in my family and local area	786	4.16	1.322
My suggestions are sought by young members of the family in their decisions	786	3.56	1.477
There is violence in my family	786	3.43	1.585
I am appreciated by my famiy for my efforts	786	3.42	1.617
I got/get offer for leadership in different family/local programs	786	3.70	1.569
The sense of respect of others about me has changed since I joined the venture	786	3.86	1.531
I feel the necessity of further education for the sake of my work	786	3.50	1.641
I am motivated/inspired by my family members for my work	786	3.64	1.573
I am aware of the schemes provided by Central/State Government for the women entrepreneurs	786	3.83	1.456
I have the ability and courage to meet different people for the sake of my work	786	2.17	1.297
I am able to do banking and other subsidiary activities for my venture on my own	786	3.64	1.484
I am able to do all the applications/other secretarial work on my own	786	2.40	1.398
Valid N (listwise)	786		

Source : Primary Data compiled through SPSS 24.

The mean value of the variables is more than 3 except *I have control in preparing family budget, I go to shops for purchase/marketing without permissions of my husband/family, I have the ability and courage to meet different people for the sake of my work and I*

am able to do all the applications/other secretarial work on my own. And also the standard deviation is high (more than 1.0) for the all the variables. Further, the correlation Matrix table provides correlation coefficient and p-values for each pair of variables

included in the analysis. A close inspection of these correlations provides insights into the factor structure.

Table 11 : KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.699
Bartlett's Test of Sphericity	Approx. Chi-Square	1343.256
	df	136
	Sig.	.000

The data was verified through Cronbach's alpha and result is 0.871 prove internal consistency of the data. The adequacy tests and KMO and Bartlett's test result is 0.699 which supports for factor analysis.

6.3.7. Factors Associated with Rural Women Empowerment

The principal component range from .559 to .745, thus most of the variance of these variables was accounted for by this seven dimensional factor solution which were **Intellectuality,**

Sales & Marketing, Local Leadership, Decision Making & Control, Awareness and Allocation of Finance, Violence and Esteem, which were found out after 3 iterations and which included 17 variables and 10 other variables were found to be redundant having negligible factor loading. The extracted factors accounted for 60.271% of total variance explained. The following table illustrates the factor loadings.

Table 12 : Communalities		
	Initial	Extraction
x1	1.000	.581
x2	1.000	.694
X3	1.000	.670
x4	1.000	.745
x5	1.000	.670
x6	1.000	.727
x7	1.000	.742
x8	1.000	.685
x9	1.000	.702
x10	1.000	.609
x11	1.000	.726
x12	1.000	.577
x13	1.000	.725
x14	1.000	.771

Table 12 : Communalities cont.		
x15	1.000	.695
x16	1.000	.574
x17	1.000	.559
x18	1.000	.706
x19	1.000	.702
x20	1.000	.699
x21	1.000	.710
x22	1.000	.716
x23	1.000	.598
x24	1.000	.650
x25	1.000	.739
x26	1.000	.651
x27	1.000	.667
Extraction Method: Principal Component Analysis.		

<div align="center">**Table 13 : Total Variance Explained**</div>

Comp-onent	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	1.876	11.036	11.036	1.876	11.036	11.036	1.679	9.877	9.877
2	1.809	10.642	21.678	1.809	10.642	21.678	1.553	9.137	19.014
3	1.591	9.356	31.034	1.591	9.356	31.034	1.539	9.053	28.067
4	1.440	8.471	39.506	1.440	8.471	39.506	1.485	8.734	36.802
5	1.329	7.820	47.326	1.329	7.820	47.326	1.425	8.383	45.185
6	1.168	6.869	54.195	1.168	6.869	54.195	1.358	7.986	53.171
7	1.033	6.076	60.271	1.033	6.076	60.271	1.207	7.100	60.271
8	.931	5.474	65.745						
9	.832	4.896	70.641						
10	.812	4.774	75.415						
11	.762	4.485	79.900						
12	.725	4.262	84.162						
13	.640	3.764	87.926						
14	.628	3.694	91.620						
15	.589	3.465	95.085						
16	.457	2.686	97.771						
17	.379	2.229	100.000						
Extraction Method: Principal Component Analysis.									

6.3.8. Brief Explanation of the Factors coming out of EFA

1. **Intellectuality:** this factor is composed of the variables x19, x6 and x17 with factor loadings of .668, .644 and .596 respectively and they explain 9.877 per cent of the variance.
2. **Sales & Marketing:** this factor is composed of the variables x11 and x22 with factor loadings of .786 and -.543 respectively and they explain 9.137 per cent of the variance.
3. **Local Leadership:** this factor is composed of the variables x8 and x20 with factor loadings of -.725 and .689 respectively and they explain 9.053 per cent of the variance.
4. **Decision Making & Control:** this factor is composed of the variables x4, x9 and x26 with factor loadings of .724, .661 and .522

respectively and they explain 8.734 per cent of the variance.
5. **Awareness and Allocation of Finance:** this factor is composed of the variables x24 and x1 with factor loadings of .749 and 587 respectively and they explain 8.383 per cent of the variance.
6. **Violence:** this factor is composed of the variable x18 with a very negligible factor loading of -.721 and it explains only 7.986 per cent of the variance.
7. **Esteem:** this factor is composed of the variable x23 with a high factor loading of .852 and it explains only 7.100 per cent of the variance.

Table 14 : Rotated Component Matrixª

	Component						
	Intellectuality	**Sales & Marketing**	**Local Leadership**	**Decision Making & Control**	**Awareness and allocation of Finance**	**Violence**	**Esteem**
x19	.668						
x6	.644						
x17	.596						
x2							
x11		.786					
x22		-.543					
x8			-.725				
x20			.689				
x4				.724			
x9				.661			
x26				.522			
x24					.749		
x1					.587		
x18						-.721	
x12							
x23							
x21							.852
Extraction Method: Principal Component Analysis.							
Rotation Method: Varimax with Kaiser Normalization.ª							
a. Rotation converged in 12 iterations.							

Moreover the factor scores those extracted with the help of factor analysis has been used to Multiple Regression Analysis. The multiple regressions have been used to find out the influence of micro finance services on women empowerment. To meet the objective, the impact of influencing factors on women empowerment through microfinance activities has been investigated. The following model was used to investigate the relationship between dependent and independent variables.

$$Y = a + \beta1\ Z1 + \beta2\ Z2 + \beta3\ Z3 + + \beta4\ Z4 + \beta5\ Z5 + \beta6\ Z6 + \beta7\ Z7 + \text{€} \qquad (1)$$

Where, Y is the Dependent Variable; (Women empowerment). Intercept terms $\beta1$, $\beta2$, $\beta3$ are regression coefficients. Z1, Z2, Z3, Z4, Z5, Z6 and Z7 represent Independent variables, which

are nothing but the factors mentioned in the above table; (Intellectuality, Sales & Marketing, Local Leadership, Decision Making & Control, Awareness and Allocation of Finance, Violence and Esteem). ε represents the error term.

All the variables extracted could explain 60.271% of the variation in the women empowerment through the above factors. The rest of 39.729% of the variation in the women empowerment is explained by other factors such as education, occupation, experience, income and savings etc.

Table 15 : Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.139	.031		69.945	.000
	Sales & Marketing [x2]	-.022	.037	-.023	-.595	.552
	Local Leadership [x3]	.035	.034	.038	1.006	.315
	Decision Making & Control [x4]	-.148	.038	-.138	-3.870	.000
	Awareness & Allocation of Finance [x5]	.003	.033	.004	.104	.917
	Violence [x6]	-.036	.033	-.039	-1.065	.287
	Esteem [x7]	-.127	.036	-.125	-3.552	.000
	Intellectuality [x1]	.264	.038	.250	6.906	.000

a. Dependent Variable: Level of annual Income of the woman entrepreneur

The estimated regression equation is:

$$Y = 2.139 + .264 Z1 + -.022 Z2 + .035 Z3 + + -.148 Z4 + .003 Z5 + -.036 Z6 + -.127 Z7 + € \qquad (2)$$

The significant t–value of each variable confirms the significant contribution of each independent variable to the model. The value of Beta coefficient is highest in case of Z1(Intellectuality) explaining that 26.4 percent of the variation in the women empowerment can be explained by this variable. Similar result is shown in other variable of Z3 (Local Leadership) explaining that 3.5% of the variation in the women empowerment is explained by this variable, and Z5 (Awareness & Allocation of Finance) explaining that only 0.03% of the variation in the women empowerment is explained by this variable but in case of Z2 (Sales & Marketing) i.e. -.022 has negative impact on women empowerment, X4 (Decision Making & Control) i.e. -.148 has negative impact on women empowerment, Z6 (Violence) i.e. -.036 has negative impact on women empowerment. and Z7 (Esteem) i.e. -.127 has negative impact on women empowerment. The smallest Beta in case of Z5, i.e. 0.003 shows that the decision making contributes least to the empowerment of women clients at household level.   From   the

analysis it could be concluded Intellectuality has significant association with empowerment (P=.000 which is less than 0.05 at 0.05 significant level) along with Decision Making and Control and Decision Making and Sales and Marketing has weak association with microfinance (P=.552 which is greater than 0.05 at 5% significant level). However, there is significant positive, weak and negative association between women empowerment and Intellectuality, Local Leadership and Esteem in respectively the H1 has been accepted.

The null hypothesis explains mean values of regression coefficient are equivalent to zero, Hence the null hypothesis is accepted which was explained that there is no significance differences between mean values of co-efficient. It is evident that the value of one or more regression coefficient is not equal to zero.

Table 16 : ANOVAᵃ

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	82.911	8	10.364	14.104	.000ᵇ
	Residual	570.973	777	.735		
	Total	653.884	785			

a. Dependent Variable: Level of annual Income of the woman entrepreneur

b. Predictors: (Constant), REGR factor score   1 for analysis 1, REGR factor score   7 for analysis 1, REGR factor score   6 for analysis 1, REGR factor score   8 for analysis 1, REGR factor score   4 for analysis 1, REGR factor score   5 for analysis 1, REGR factor score   3 for analysis 1, REGR factor score   2 for analysis 1

In the above Table all the variables favourably support the argument that the model is significant [P-value<0.001] and can predict the outcomes.

6.4. Confirmatory Factory Analysis using Structural Equations Modelling (SEM)
But we were never satisfied with the results of the constructs obtained by EFA and therefore, we relied on CFA with the help of SEM through SPSS Amos 22. We had the following assumptions for CFA :

6.4.1. Assumptions
A. In case of CFA researchers have preconceived idea about the number of dimensions that should underline the data.

B. The number of factors is specified beforehand. Here the number of factors is 7 as found out through EFA.
C. The purpose of CFA is to test hypothesis or to determine the extent to which new data fits the expected structure.

Here, after 3 iterations, we finally got 6 factors with 14 variables and these 6 factors are interrelated to each other where the degree of association between the first two factors, i.e., Intellectuality and Local Leadership is very high, as evident from the following Path Diagram :
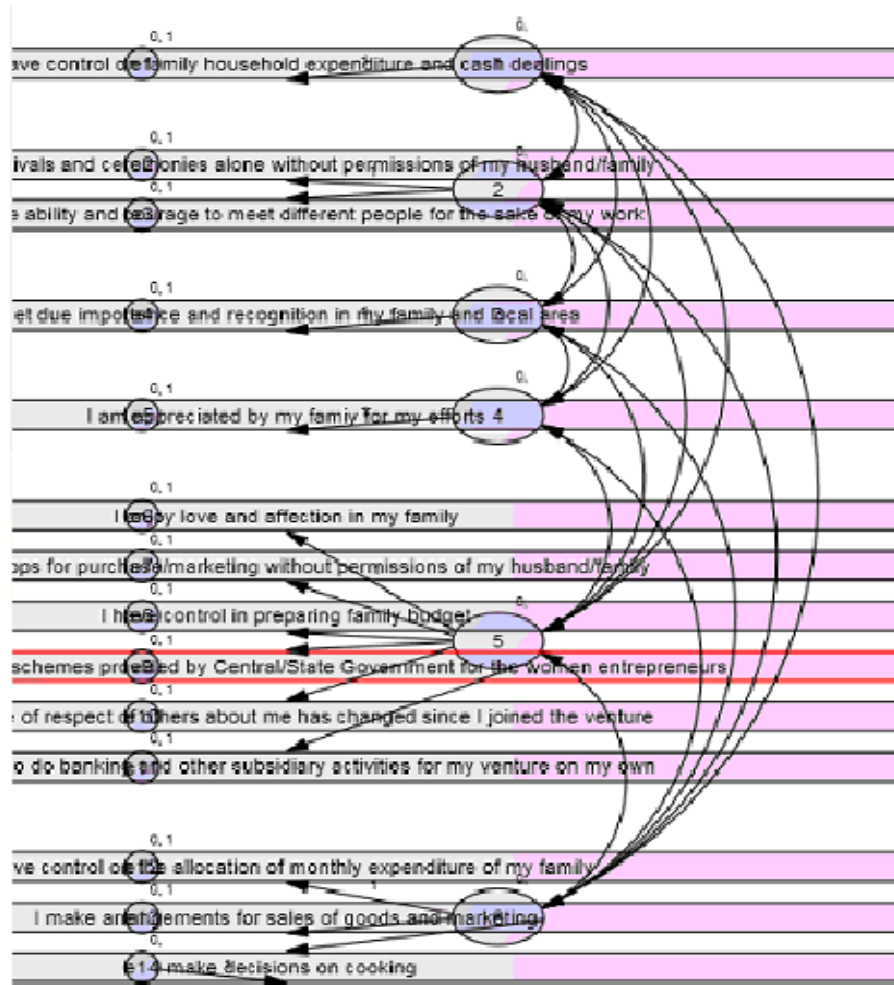
Figure 1 : Path Diagram

Source : Extracted Primary Data from SPSS 24 compiled through SPSS AMOS 24

According to the above path diagram, after 3 iterations, we found out 3 confirmatory factors **Intellectuality, Sales & Marketing, Local Leadership, Decision Making & Control, Awareness and Allocation of Finance and Esteem involving 14 factors** and excluded the variable 'Violence', which is not a confirmatory Factor.

6.4.2. Indicators

- ❖ *CMIN:* Minimum value of the discrepancy between the data and model. **It was found out to be 0.689.**
- ❖ *RMR***: Root Mean Square Residual (RMR)** is the square root of the average

squared amount by which your model's estimated sample variances and covariances differ from the fractural values in the data. The smaller the RMR, better the fit. **It was found out to be 0.568 (<0.08).**

- ❖ *GFI:* **Goodness of Fit Index (GFI)**, tells you what proportion of the variance in sample variance co-variance matrix is accounted for by the model. This should exceed 0.9 for a good model. **It was found out to be 0.912 after the improvement.**

6.4.3. Baseline Comparisons

❖ *Normed Fit Index (NFI)* shows how far between the (terribly fitting) independence model and the (perfectly fitting) saturated model the default model is. **It was found out to be 0.912.**

❖ *Comparative Fit Index (CFI)* does the same. These values should exceed 0.9 for good fit. **It was found out to be 0.967.**

❖ *RMESA:* The *Root Mean Square Error Approximation (RMESA)* estimates lack of fit compared to the saturated model. RMESA of 0.05 or less indicates good fit, and 0.08 or less adequate fit. **It was found out to be 0.051.**

❖ *HOELTER:* If the sample size are larger than this, you would reject the null hypothesis that model fit the data just as well as does the saturated model. **We could not find it.**

Therefore, the above path diagram gives us six confirmatory factors as mentioned above involving 14 variables.

7. Conclusion

Therefore, the study findings strongly depict that in spite of the fact that the respondent poor women entrepreneurs are never sponsored by any MFIs nor by any large bank or sponsors, even then they are proceeding aggressively towards different facets of empowerment, including, of course, economic and financial empowerment, with the factors identified above.

8. Problems faced by Women Entrepreneurs

As found out of the answers given by the respondent women entrepreneurs in response to the open-ended question made at last part of the interview, participation of women in entrepreneurial activities has been increasing day by day. In spite of that number of women entrepreneurs in relation to their counterpart men entrepreneurs is very low particularly in any developing country like India. Now the planner realizes that women entrepreneurs have vast entrepreneurial talents that could be narrated to create employment opportunity. Entrepreneurship plays a critical role in the growth of women society. But the women entrepreneurs are facing various types of problems in managing their units. Those problems follow entrepreneur like a shadow. If she overcomes a problem a few more problems come up. In many cases women entrepreneurs are not getting any help from their family members as well as from the Government. The multifarious problems of women entrepreneurs are :

1. **Paucity of Capital:** Paucity of capital is the crux of all the problems. In male-dominated Indian orthodox society women particularly unmarried women cannot choose entrepreneurship due to lack of financial support from their family. Getting of required amount of financial support is a big problem to the women entrepreneurs. If sufficient financial assistance is not provided to the women entrepreneurs they could not be successful entrepreneurs. In our study we have observed that out of 100 sample women entrepreneurs 78 entrepreneurs have been suffering from shortage of capital, particularly, working capital.

2. **Non-availability of Raw Material:** One of the problems of women entrepreneurs is to get adequate volume of raw material in required time. Many of the sample women entrepreneurs fail to get good quality raw material at reasonable price which, in turn, reduce the quality and quantity of their product. Out of 100 entrepreneurs 62 entrepreneurs face the problem of purchase of material.

3. **Problem of Marketing:** Women entrepreneurs have to face severe competition to sell their products or goods from the existing large size units which are managed and controlled by male entrepreneurs. In 76 per cent cases we have observed that women entrepreneurs face problem of marketing their products. They fail to work out an appropriate strategy to sell their product.

4. **Lack of Skilled Labour :** Lack of sufficient number of skilled labour is also a problem of some women entrepreneurs, particularly in case of making of soft dolls & toys, women garments, kantha stitch and other kind of handicraft articles.

5. **Lack of Permanent Shop:** The size of women enterprise is very small and their capital is very limited. As a result in many cases women entrepreneurs are unable to purchase or take lease of permanent shop for their enterprise. In our study, we have observed that 71 women entrepreneurs out of 100 have no permanent shop for running their business. Most of them sell their goods at the footpath or places in the market where the places are not allowed to them permanent. In addition to that some entrepreneurs sell their goods in different trade fairs in West Bengal or outside West Bengal. Finding no other way some of them bound to sell their products to the middlemen and get less price. Lack of permanent shop is one of the main problems to get loan.

6. **Less Risk Bearing Capacity :** In the business or industry entrepreneurs are expected to absorb sufficient risk and uncertainty. But small and medium women entrepreneurs generally possess the capacity of taking lesser economic and social risk.

7. **Managerial Deficiency :** Most of the respondent women entrepreneurs suffer from managerial efficiency. Managerial efficiency is very important for the success of an enterprise.

8. **Inherent Inferiority Complex :** Most of the respondent women entrepreneurs suffer from the inherent inferiority complex and naturally it affects the success of their enterprise.

9. **Family Involvement :** In West Bengal's culture women's primary duty is to look after the family work like taking care of their children, look after other members of the family. They have to do everything for their family and men play a secondary role in the household activities. Women's involvement in family problems and family work leaves very little energy and time to devote to their own business enterprise.

9. Observations from the Case Study and Our Findings

The cases examined in our study indicate the emerging trend of women entrepreneurial development in small and tiny business and industry. Developing entrepreneurship among women is very important for the all-round economic development of West Bengal because women comprise nearly 50 per cent of total population of West Bengal. However, it should be admitted that we have selected South 24 Parganas District as case study and the number of cases examined is small so no claim can be made to have the entire picture of women entrepreneurs of West Bengal. Yet our case studies identified that the emerging women entrepreneurial classes consist of people from various socio-economic strata, motivated by different objective and by various persons and in their functioning of their enterprises they face various problems. Now, we can sum up different important points that have come out from the analysis of performance of the women entrepreneurs.One major observation that emerges from the sample survey is that in the District of South 24 Parganas women in the low and middle income groups with some educational background and moderate experience in specific line of manufacture or trade entered into the entrepreneurial activities in the area of **handicraft, ladies garments, beauty parlour, soft doll and toys, ladies tailors, electrical equipments, fashion designing, imitation ornaments, traveling agency, photocopy centre, STD booth etc.** that are matched with their social status. On the other hand illiterate or semi-illiterate women from very poor families enter into another type of entrepreneurial activities. **They purchase rice, fruit, fish, cut-flower, vegetable, etc. from village market and sell them in South 24 Parganas and Greater Kolkata. They also set up tea stall and other very small size shop in Kolkata greater.** It would be fruitful to identify

and develop women entrepreneurs with such background.

The new women entrepreneurs have come from different socio-economic strata. Their age, qualification, family background and previous experience also differ from each group. The age of new entrants starts from below 20 years and ends above 50 years. Being illiterate women enter into one type of entrepreneurship at the same time after completing postgraduate degree some women enter into entrepreneurships that are suitable to them. Women have come to this occupation from business family as well as from well established service holders' family even from doctor's family. Women who have come fro well-to-do family have better access to resources and are less dependent on institutional finance. Naturally the size of their units is large.

Though there are different types of ownership pattern **most of the women entrepreneurs prefer sole proprietorship pattern of ownership.** This is probably due to the fact that sole proprietorship is the most suitable for tiny and small scale trade and industry.

In the male dominating society though the unmarried women allowed to go to schools and colleges but after marriage their husbands, generally do not allow their wives to go outside along particularly to enter into entrepreneurship. But in modern days the picture has been changed particularly in Greater Kolkata and South 24 parganas where we observed that nearly three fourth of sample women entrepreneurs are married.

Generally, women are very shaky to take institutional loan. They do not like to take the risk of paying the installment in due time. As a result they depend on their family for the required amount of capital for starting an enterprise. We have observed that most of the women entrepreneurs procure capital from their previous savings and contribution from their family.

Proper motivation encourages the women to enter into entrepreneurship. Our study shows that most of the women entrepreneurs have been self-motivated or motivated by their family members where they have come from business families. Encouragement from the personnel associated with EDP course also motivated the women to start a business. Story of successful women entrepreneurs also motivates the women to come in this line.

Success of an enterprise depends to some extent on the marketing of the product. In our study we have observed that marketing is one of the major problems of women entrepreneurship. Since their units are very small and their capital is inadequate then they are unable to take the advantage of advertising of their product through TV, radio or other modern media.

Though income or profit is not only objective of setting an enterprise yet high volume of profit inspires a person to enter into entrepreneurship. We have observed that most of the women entrepreneurs earn moderate profit from their entrepreneurships. If their problems relating to their entrepreneurship can be solved then they will be able to earn more profit that will encourage prospective women entrepreneurs. From the point of view of women entrepreneurs' contribution to their family we have observed that 46 per cent of the sample entrepreneurs contribute 50 per cent or more of their families' total income. So, it may be pointed out that the women entrepreneurs' contribution is not to be neglected.

It is depicted from our analysis of sample women entrepreneurs that women entrepreneurs not only absorb themselves in their units but also create job opportunities for outsiders and/or family members in their entrepreneurship. In addition to that successful women entrepreneurs create at least one job opportunity in their home to look after their home affairs.

10. Suggestions for Development of Women Entrepreneurs:

Women possess sufficient talents with all the qualities and abilities required for successful

entrepreneurs. A favourble environment is to be created which can motivate, encourage and provide required facilities to women to be successful entrepreners. To create the favourable environment to meet the requirement of women entrepreneurs or prospective women entrepreneurs we may put forward the following suggestions:

a. Effective efforts should be taken by the State Government and different Chambers of Commerce to provide necessary information on entrepreneurship to all women of West Bengal through television and other media.

b. Women Entrepreneurship Organizations and all other non-government organizations (NGOs) should take necessary steps in the implementations of income generations schemes evolved by the State and Central Governments.

c. Efforts should be taken to introduce Diploma or Certificate course on Entrepreneurial Management and Development for women with the commerce and industrial establishments and universities.

d. State Government should set up trade centres exclusively for the benefit of women entrepreneurs and it should be linked up with the trade centres of all the foreign countries and make arrangement for exporting the quality product of the women entrepreneurs to abroad.

e. State Government should take the responsibility of marketing the product of women entrepreneurs particularly the product of new entrants.

f. State Government should make arrangement with the banks and other financial institutions to provide term loan and working capital loans to the women entrepreneurs in more liberal and easier term and the State Government should be the guarantor.

g. The family members of women entrepreneurs should cooperate and extend all possible supports for running the enterprise set up by women entrepreneurs and also share the loan of family work with women entrepreneurs.

h. Women entrepreneurs themselves have to take the entrepreneurship seriously and not casually and give all out efforts for the development of their units. They should be confident that they have sufficient talents and good qualities that their counterpart male entrepreneurs possess. In order to be 'successful women entrepreneurs' they have to develop entrepreneurial personality and train themselves on various aspects of management to overcome the various problems faced by them.

11. Limitations of the Present Study

a. One of the important constraints was that less time than usual was available for this study, due to the long illness and sufferings of the principal investigator due to wrong operation and resultant post-operative infection. In the present study, the inferences drawn are based on the sample, with constraints of size and geographic reach. Hence appropriate judgment should be applied in interpretation of the results.

b. The study also suffers from the general problem of a 'non-response' bias.

c. The investors who did not participate in this study could be different from the respondents in more ways than the simple fact that they refused to fill in the questionnaire. Therefore the missing value analysis could not be done.

d. Further, the statistical techniques used in the study have their own assumptions and limitations.

e. Finally, the sample size is also an issue, which could have been larger.

12. Epilogue

Since women constitute nearly half of human resources of West Bengal as well as of India, overall development of the State or India cannot be possible neglecting the women. When we are calling ourselves the next super-power comparing us with some other countries then we must acknowledge the equal right of women in relation to men. There must be no discrimination in any sphere of our society. But emancipation of women is not an easy matter. It requires radical change of attitude starting from family members of the society as a whole towards the position of women both in the family as well as in the society. Bureaucratic efforts and community consciousness should be ensured for the implementation of the development programmes. The first and foremost priority should be given to the economic empowerment of women. When neither the Central Government nor the West Bengal Government is not in a position to absorb all women either literate or illiterate in government / semi-government service or any other scheme except entrepreneurship development for women, we concentrated out study on women entrepreneurship for social and economic upliftment of women. Our study reveals that if women gets opportunities they can come out from kitchen and take active part in economy of the state and contribute for the well-being of their families.

Both the Central as well as State Government has to introduce women-friendly economic policies that can enhance both social and economic position and make them self-reliant. Though development of women has always been the central focus of planning since independence but it has not yet been actively implemented. Empowerment is a major step in this direction and it removes the obstacles to the path of women's emancipation. But the Government as well as women themselves should take active role to remove those obstacles. All our efforts should be directed towards all round development of each and every section of women of West Bengal as well as of India by giving them their due share.

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A STUDY OF LINKAGES BETWEEN PUBLIC PRIVATE PARTNERSHIP (PPP) AND SUSTAINABLE INFRASTRUCTURAL DEVELOPMENT: AN INSIGHT

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Abstract
Public-Private Partnership (PPP) is the most recent addition in the world of economic development and growth across the country. The choices made in the type and scale of infrastructure investment also have major implications for environmental sustainability. The government has started a number of schemes in joint collaboration with private sectors in order to give national economy an impulse and thus enhancing the pace of economic growth. Public Private Partnership (PPP) has become the demand of developing India. There are many sectors and subsectors of Public Private Partnership (PPP) in India i.e. Infrastructure, health, education, women empowerment, vocational education etc. The development of infrastructure has today become the top priorities of the government. Therefore, the Public Private Partnership (PPP) has become suitable answer to represent a logical, viable and necessary option for the Government. One of the key political drivers behind the Public Private Partnership (PPP) is the desire to improve the nation's infrastructure and supporting public services without placing undue strain on scarce public funds and without increasing taxation burden. The main purpose of Public Private Partnership (PPP) schemes is to enable implementation of infrastructure projects and services via Public Private Partnership (PPP) and also contributing to achieve all-round social, economic, political, cultural and national development for its people. An attempt in this research paper has been made to conceptualize the importance, role, obstacles faced by the Government in implementation of Public Private Partnership (PPP) model.

Key Words: Public Private Partnership (PPP), Infrastructure development, Public services, Environmental sustainability

Introduction:

Public-Private Partnership (PPP) is defined as legal agreements between public and private-sector entity that offer the delivery of physical infrastructure & services to the society in specific time duration. There private sector work as financing, maintaining, operating, construction and the other hand public sector provide full societal and environmental support to Public Private Partnership (PPP) projects. Public Private Partnership (PPP) projects develop a high quality physical infrastructure projects like roads, highways, ports, airports, metro and other sectors. In service sectors the domains include health, education, child development, skill development, sanitation, etc. All Public Private Partnership (PPP) projects improve the quality of life for the citizen. The public private partnerships are not simply tools for funding projects, but require full commitment from all partners at the completion of the project. The continued growth of national

economy depends on the availability of qualitative, sustained infrastructure, and basic services. PPP is the best answer to address the requirements which are essentially required for the better and continued economy. Infrastructure is essential for increasing economic progress and reducing poverty. The choices made in the type and scale of infrastructure investment also have major implications for environmental sustainability. Infrastructure expansion often has come at the expense of the local environment, as well as complicating responses to the longer-term challenge of climate change. These observations underscore the difficulty in planning, building, and maintaining infrastructure for both socio-economic progress and environmental sustainability. Private participation has an important role to play in infrastructure expansion. Indeed flows of capital associated with private participation in infrastructure (PPI) amount to about 1.2 % of developing countries GDP today.

The types and scale of infrastructure investment and its ongoing management constitute a key part of achieving "green growth" – growth that reduces poverty and is environmentally sustainable. Other factors also have decisive influences on green growth, notably the nature of regulatory standards and economic incentives for reducing environmental degradation; availability and affordability of technologies with lower environmental impact; availability of complementary knowledge and skills; and broader issues of institutional capacity and governance(http://siteresources.worldbank.org/DEC/Resources/8479712750719905763/Infra_and_Sust_Dev-Fay_and_Tomanr.pdf)

Concept of Public-Private Partnership (PPP):

Public-private partnerships (PPP) in infrastructure development involve private sector participation in any or all of the design, construction, financing and operation phases of a public utility infrastructure, service or both. It has been used in industrialized countries, such as the UK and Germany, and in newly industrializing countries with tremendous infrastructure demands, such as China and India, as well as in some developing countries in particular in Latin America. The capital-intensive nature of basic infrastructure and competition for limited government budgetary resources have prompted governments to invite private investors to fulfill the widening demand-supply gap for infrastructure while the governments are endeavoring to meet the social commitments within the fiscal constraints. Attention has been drawn that the level of adoption of Public Private Partnership (PPP) across the world differs widely. Typically, in industrialized countries, Public Private Partnership (PPP) is used in areas of public service provision including education, health services, waste management and public buildings. While in industrializing countries with enormous needs for basic infrastructure, Public Private Partnership (PPPs) are often seen in the power, water or road sectors in order to sustain the countries' rapid economic growth. There is a long tradition of the involvement of the private sector in the development, maintenance and funding of public facilities and services. Public Private Partnership (PPPs), however, go beyond traditional contracting of private sector organizations.

The term public-private partnership (PPP) describes a wide range of arrangements whereby government responsibilities are outsourced to commercial partners, and risk is shared between the public and private sectors to bring about desired outcomes in areas associated with public policy. "The term Public Private Partnership (PPP) refers to a long-term, contractually regulated cooperation between the public and private sector for the efficient fulfillment of public tasks in combining the necessary resources (e.g. knowhow, operational funds, capital, personnel) of the partners and distributing existing project risks appropriately according to the risk management competence of the project partners".

Important Characteristics of Public Private Partnership (PPP):

Some of the Features of Public Private Partnership (PPP) are listed as follows:

- ➢ Efficiency gains through appropriate sharing of risks and responsibilities; the public sector retains mainly sovereign tasks and the private bears those for implementation;
- ➢ Lifecycle and private investment as crucial elements of Public Private Partnership (PPP's) incentive structures;
- ➢ Long term contractual relationship; and
- ➢ Innovation, in particular through output specification, service levels and payment mechanisms, as a new way of describing the services to be supplied. (ibid)
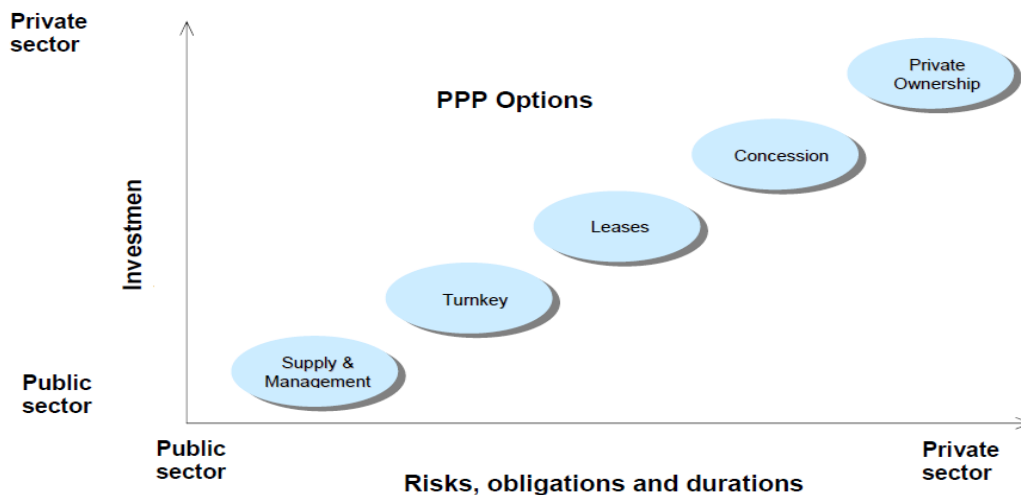
Public Private Partnership Models:

The range of options for public-private partnerships (PPP) has expanded enormously over the past 30 years. Agreements between public and private entities take many shapes and sizes for both new and existing services. At one end of the spectrum is a management or service contract, where a private company is paid a fee for a service. At the other end is full privatization or divestiture (outright sale), where a government sells assets to a private company. Outsourcing has become another popular option; here a private company might handle an aspect of service, such as billing, metering, transport, or even cleaning. Hybrid models of public-private partnership (PPP) have seen explosive growth in recent years, especially with the development of a more diversified pool of emerging market investors and operators with local expertise. These models often rely on simpler contractual arrangements and blend public and private money to diversify risks.

(http://TI_UP_HD_Aug2010_Public_Private_Partnership_in_India.pdf)

Figure 1. Basic features of PPP models

Each of these five categories has many variants. A categorization of the Public Private Partnership (PPP) models together with their main characteristics is shown in above given graph. Thus, we can interpret that individual options, combinations are also possible such as, a lease or (partial) privatization contract for existing facilities which incorporates provisions for expansion and sustainable growth of infrastructure.

Objectives of the Study:

1) To Understand and Highlight the importance and role of Public Private Partnership (PPP) in Infrastructural Development in India.

2) To Identify the Linkages between Public Private Partnership (PPP) and Infrastructural Development in the country.
3) To highlight the current status of the Public Private Partnership (PPP) schemes of Government and its contribution in Infrastructural Development in India.
4) To point out the Challenges and Barriers of Public Private Partnership (PPP) Projects in India.

Review of Literature:

Chambers, 2006 analyzed that rural India needs business to invest in industries such as finance and insurance; in ventures that bring new infrastructure such as telephony and roads. This is where telecommunications can help. Where physical infrastructure may not reach easily, the Internet can. Broadband access is the ideal platform to connect a geographically diverse country such as India. This high-speed Internet technology holds tremendous potential, such as distance learning, telemedicine, supply chain management, customer relationship management.

Desai, 2006 focused that even though Public Private Partnership (PPP) models allow for exclusive rights over public assets, it is free from the evil of monopoly business such as high user charges or low service quality. This happens when government follows a competitive bidding process to decide on lowest user charges or provide viability gap funding to safeguard consumer interests. Contracts are designed to ensure service quality.

Abdel Aziz, 2007 examined the principles that need to be addressed in order to ensure the successful implementation of a Public Private Partnership (PPP) program include: to understand the objectives of using private finance when selecting a Public Private Partnership (PPP) arrangement, to properly allocated risks to the private sector, to establish a broad and comprehensive Public Private Partnership (PPP) legal framework, to assess the value for money when selecting a delivery system, to create a Public Private Partnership (PPP) unit for policy development and/ or implementation, to maintain the transparency in the selection process, to standardize the procedures and contracts, and to use performance specifications.

It is evident that the Public Private Partnership (PPPs) has become a popular way of providing public sector infrastructure and services. These partnerships must supplement the scarce public resources for improving the investment in infrastructure sectors, and at the same time improving efficiencies and reducing costs (ibid). Mahalingam A, 2008 focused on India's infrastructure needs, Public Private Partnership (PPPs) are a necessity and not just an option. However, there are a myriad of issues that need to be addressed and resolved in order to facilitate a better understanding on how to develop infrastructure efficiently and seamlessly via Public Private Partnership (PPP).

Research Methodology:

The research paper is a descriptive research paper, based on the secondary data sourced from journals, magazines, articles and media reports. Looking into requirements of the objectives of the study the research design employed for the study is of exploratory cum descriptive type. Keeping in view of the set objectives, this research design was adopted to have greater accuracy and in depth analysis of the research study. Available secondary data was extensively used for the study. In this research paper the authors procures the required data through secondary survey method. Different news articles, Books and Web were used which were enumerated and recorded. An attempt has been made to conceptualize the aspects related to Public Private Partnership (PPP) and its role in the sustainable growth of Infrastructure Development in India. Further, an attempt has also been made to study the government intervention in Infrastructural Development in India.

Current Status of Public Private Partnership (PPP) in Infrastructural Development in India:

The forecasting strategy of the twelfth Plan encourages private sector participation directly or indirectly of Public Private Partnership (PPPs), wherever desirable and feasible. The share of private sector in infrastructure investment will have to rise substantially from about 36.61 per cent anticipated in the eleventh Plan to about 48 per cent in the twelfth Plan. It is expected that competition and private investment will not only

expand capacity, but also improve the quality of the service, besides minimizing cost and time overruns in implementation of infrastructure projects.

Projected Investment in Infrastructure—Twelfth Five years Plan

Sectors	Total 11th Plan	12th Plan Projections					(Rs. Crore at Current Prices)
		2012-13	2013-14	2014-15	2015-16	2016-17	Total 12th Plan
Grand Total	24,24,277	7,51,012	8,87,454	10,61,316	12,85,573	15,89,308	55,74,663
Centre	8,56,717	2,50,758	2,80,662	3,15,217	3,54,296	4,00,129	16,01,061
States	6,80,056	2,06,944	2,30,045	2,55,645	2,83,201	3,13,928	12,89,762
Private	8,87,504	2,93,310	3,76,747	4,90,455	6,48,077	8,75,251	26,83,840
Grand Total	24,24,277	7,51,012	8,87,454	10,61,316	12,85,573	15,89,308	55,74,663
Public	15,36,773	4,57,702	5,10,707	5,70,862	6,37,497	7,14,057	28,90,823
Private	8,87,504	2,93,310	3,76,747	4,90,455	6,48,077	8,75,251	26,83,840
GDPmp	3,36,04,450	1,01,50,618	1,16,45,987	1,33,58,028	1,53,47,089	1,76,61,485	6,81,63,208
Investment as % of GDPmp	7.21	7.4	7.62	7.95	8.38	9.00	8.18

Source: (Volume I, Twelfth Five Year Plan (2012– 2017) Planning Commission (Government of India) 2013.

The total public sector investment in infrastructure envisaged in the Twelfth Plan is Rs.16, 01,061 crore from the Centre and Rs.12, 89,762 crore by the States. Investment by the private sector, which includes Public Private Partnership (PPP) projects, makes up the balance of Rs.26,83,840 crore, which is 48.14 per cent of the required investment during the twelfth Plan, a much higher share than the anticipated 36.61 per cent during the eleventh Plan.

Role of Public Private Partnership (PPP) in Infrastructural Development:

Governments worldwide have increasingly turned to the private sector to provide infrastructure services in energy and power, communication, transport and water sectors that were once delivered by the public sector. There are several reasons for the growing collaboration

with the private sector in developing and providing infrastructure services, which includes:

> Increased efficiency in project delivery, and operation and management;
> Availability of additional resources to meet the growing needs of investment in the sector; and
> Access to advanced technology (both hardware and software).

Properly executed planning and development of a project also allows better screening of options, and helps in deciding appropriate project structure and choice of technology considering cost over the whole life cycle of the project.

Linkages between Public Private Partnership (PPP) and Governance:

The Strength of legal and regulatory frameworks that can clarify the legal authority to grant concessions, the procurement process, the contribution from the public authority of assets that can make the project viable and the rebalancing of tariffs which will add to the viability of the project. Political commitment will give confidence to the partners to make investments. Effective public administration means the establishment of a dedicated central Public Private Partnership (PPP) unit located within governments that can oversee the whole Public Private Partnership (PPP) process and has cross cutting authority over all Ministries. Governance can be broadly defined as the exercise of political, economic and administrative authority to manage a nation's affairs. Governance is thus about the importance of institutions, the interactions between different levels of government within a country, the interaction between the public, including nongovernmental organizations and business, and government. On an international plane it entails the interaction between different governments. International organizations also play an important part. For the purposes of measuring and evaluating the governance of a country, the World Bank has further unbundled

the definition into six more detailed governance concepts are:

- Voice and accountability (which includes political rights, civil liberties and independence of the media)
- Political stability (such as probability that the government will be overthrown)
- Government effectiveness (e.g., quality of public service provision and the competence of civil servants)
- Regulatory quality (e.g., incidence of market unfriendly or excessive regulation and inadequate banking supervision)
- Rule of law (e.g., crime, effectiveness of the judiciary and the enforceability of contracts)
- Control of corruption (e.g., the exercise of public power for private gain).

Good governance is a key condition for sustainable economic stability and security. Evidence also suggests that good governance is an essential component of sustained economic performance, particularly in transition economies. In contrast, poor governance and slow economic development appear to be mutually reinforcing. International institutions have increasingly observed the links between good governance and security. Good governance in Public Private Partnership (PPPs) refers to a number of inter-linked ingredients. Governance in Public Private Partnership (PPPs) combines Transparency, Public Management, Public Accountability, Sustainable Development, etc. So the Public Private Partnership (PPP) and Strong Governance play a pivotal role for Infrastructural Development.

Challenges in Implementation of Public Private Partnership (PPP) Schemes:
There are some of the Barriers which affects the growth of Public Private Partnership (PPP) schemes.

a) **Regulatory Environment:** There is no independent Public Private Partnership (PPP) regulator as of now. In order to

attract more domestic and international private funding of the infrastructure, a more robust regulatory environment with an independent regulator is essential.

b) **Lack of information:** The Public Private Partnership (PPP) program lacks a comprehensive database regarding the project to be awarded under Public Private Partnership (PPP). An online database, consisting of all the project documents, including feasibility report, concession agreement and the status of various clearances are required.

c) **Project development:** The absence of adequate project development by authorities leads to reduced interest by the private sector, mispricing and many time delays at the time of execution.

d) **Lack of institutional capacity:** The limited institutional capacity to undertake large and complex projects at various central ministries and especially at state and local bodies' level hinder the translation of target into projects.

e) **Financing availability:** With commercial banks reaching the sectoral exposure limits, and large Indian infrastructure companies being highly leveraged, funding the Public Private Partnership (PPP) project is getting difficult.

Sustainable Infrastructural Development: The Road Ahead:

The Public Private Partnership (PPP) and Infrastructural Development play vital role for developing the nation. The Government have taken certain steps for developing the Private sector with the jointly collaboration of Public sector. The Public Private Partnership (PPP) is also important for providing Employment opportunities, Skill Training and also provide different basis for Business venture to India's Youth. Still, there is a need of healthy coordination & cooperation between central and state level government.

The healthy coordination acts as a catalyst for the development of infrastructure and delivery of services and it stops the unnecessary delay, litigation of projects. The government plays an important role for some infrastructure services such as construction of highways, airports, seaports and power generation & distribution. Private Management should be handled to utilize a large amount of capital to develop the infrastructure which is feared to be critical in the development of economy.

Concluding Remarks:

Thus, in this research the emphasis is on the government support will play a crucial role in implementation of Public Private Partnership (PPP). The sustainability of infrastructure will play a vital role in developing the Indian Economy. The government should also evolve mechanisms to foster the process of delivery system fast and quick and if possible the bureaucratic hurdles should be minimized. The researchers point out the strategic role that government will play in contribution of all inclusive growth and development of India.

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FDI in Indian Retail Sector

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Abstract
Foreign Direct Investment (FDI) is one of the most important sources of non-debt foreign investment flows in developing countries like India. After the announcement of new industrial policy, 1991 and the current policies of liberalization, India has been experiencing an accelerating growth in the flow of foreign investment into the country. Foreign Direct Investment is nowadays considered as an important source of investible resources. Developing countries, emerging economies and countries in transition increasingly see FDI as a source of economic development, modernization and employment generation. In the grcv,'ing market, retail has become one of the major emerging trends in the entire economic cycle. 1tetai: sector is emerging as one of the attractive sectors and is able to attract foreign players. FDI in retail sector in India is concerned it has paved the way for a better growth oriented and development oriented markets for Indian consumers. Through FDI the companies are able to bring new skills and expertise and adding it to their core values to increase the efficiency in various forms, which are so important for a developing country like India. As time goes there is support for FDI in multi brand retail as well. It will bring in foreign exchange, which is important in the face of a current account deficit and the falling rupee. Again it will help in bringing down inflation by reducing price of goods, particularly agricultural produce. Thus a conclusion can be made and it can be guessed that a good Foreign exchange policy, FDI and other measures can boost up the Indian economic growth and development in retail sector as well as the other sectors too.

Keywords: emerging economies, economic development, economic cycle

Introduction

Retail is currently the booming sector of the Indian economy. It is closely linked to the changing moods of the consumer and new ways of doing business, spurred on by the impressive developments in technology and management theory. Modern retailing is increasingly an expression of consumer consciousness in society. Societies, however, differ in the expression of that consumer consciousness. Retailing has developed a more international flavour because of closer cultural and social interaction between various countries. The spread of some retail formats, such as supermarkets, mails, across the world also implies a greater cultural similarity. The retailers of the twenty-first century require a very special kind of managers. The challenges for the leaders of retail business have moved from being operational in focus to being of a more strategic nature. It is no longer enough to ensure that the shelves are full and people are available to take money from customers. A retail manager now has to be totally in touch with the customer base, have an understanding of their reasons for shopping and be adept at organising an outlet to provide maximum value in that shopping experience. At the same time, the retail managers need to ensure that their designated outlet is gaining the best return on investment put into it and they are also responsible for reflecting the values of organisation that they represent. Retailers are now brands; maintaining that brand integrity at the customer interface is the remit of modern retail manager. Thus, retailing consists of all activities involved in selling goods and services to consumers for their personal, family or household use. It covers sales of goods ranging

from automobiles to apparel and food products and services ranging from hair cutting to air travel. Retail sector is emerging as one of the attractive sectors and is able to attract foreign players. FDI in retail bears an effect on a number of stakeholders engaged in the process of retailing, from retailers to end consumers. The initiative of the GOI to attract FDI in retail, by liberalizing FDI policy must be significantly encouraged but should not be freely allowed. The review paper is based some of the important studies conducted by various researchers for finding the effect of FDI in Indian retail sector.

Materials and Methods

For the purpose of in depth study the contents have been taken from interview, relevant books and articles from journals and websites. The method used is analytical and descriptive. Both primary as well as secondary source of Information have been taken.

Results and Discussions

Foreign Direct investment plays a very important role in the development of the nation. Sometimes domestically available capital is inadequate for the purpose of overall development of the country. Foreign capital is seen as a way of filling in gaps between domestic savings and investment. India can attract much larger foreign investments than it has done in the past. FDI offers number of benefits like overture of new technology, innovative products, and extension of new markets, opportunities of employment and introduction of new skills etc., which reflect in the growth of income of any nation. Foreign Direct Investment is one of the measures of growing economic globalization. Investment has always been an issue for the developing economies such as India. The world has been globalizing and all the countries are liberalizing their policies for welcoming investment from countries which are abundant in capital resources. The countries which are developed are focusing on new markets where there is availability of abundant labors, scope for products, and high profits are achieved. Therefore Foreign Direct

Investment (FDI) has become a battle ground in the emerging markets. India has today become a budding target for FDI. India today offers the most persuasive investment opportunity for mass merchants and food retailers looking to expand overseas as Indian economy is growing at a rapid pace with consumers having high purchasing power. With a robust economy experiencing unrelenting growth, India has exerted a pull and an irresistible enticement to companies looking to expand their scope of operations. FDI is a sturdy source for the intensification of retailing and will create enormous opportunities for innovation in retail sector in India but at the same time it is quite likely that a section of the domestic retailing industry will be severely hurt due to the entry of foreign retailers. FDI in retail industry means that foreign companies in certain categories can sell products through their own retail shop in the country. At present, foreign direct investment (FDI) in pure retailing is not permitted under Indian law. Government of India has allowed FDI in retail of specific brand of products. Following this, foreign companies in certain categories can sell products through their own retail shops in the country. It is a very positive step and it will encourage international brands to set up shop in India. On the other hand, this will also lead to competition among Indian players. It will be the consumers who stand to gain," This would not change the market dynamics immediately as it will take some time for these plans to fructify. The growing dominance of multinational companies in the country's $200 billion retail business, had warned that any move to increase FDI in the retail sector would ruin the business of small and medium traders scattered over the country Organized retailers in India are opposing the entry of MNCs in retail trading because of their predatory pricing strategy that wipes out competition, when the Government decides to allow foreign players to enter the retail space, it should first restrict them to lifestyle products segment before permitting them to spread their wings into other areas like grocery marketing that has a direct impact on 'kirana stores'.

FDI in retail trade has forced the wholesalers and food processors to improve, raised exports, and triggered growth by outsourcing supplies domestically. The availability of standardized products has also boosted tourism in these countries. FDI in retail sector has been a key driver of productivity growth in Brazil, Poland and Thailand. This has resulted in lower prices to the consumer, more consumption and higher profit for the producer.

Turnover and Share of Retailing in India (Crore Rupees)

Year	Total Retailing Turnovers	Growth Over Last Year, in %	Organised Sector Turnover	Growth Over Last Year, in %	Market Share in %
2011	23,55,000	10.82 %	1,75,000	25.00	8
2012	26,40,000	12.10 %	2,20,000	25.71	9
2013	29,50,000	11.74 %	2,75,000	25.00	11
2014	32,65,000	10.67 %	3,45,000	25.45	12
2015	36,25,000	11.02 %	4,25,000	23.18	13
2016	39,95,000	10.20 %	5,30,000	24.70	14

Source: www.abhinavjournal.com

Needs of FDI in Indian Retail

India's retail industry is one of the biggest around the world when it comes to the privately owned ones. The industry has seen some major restructuring thanks to the FDI structure becoming more liberal than before. The benefits of FDI in retail, as per experts, carry greater weight age than the cost related implications. With FDI in retail, operations in distribution and production cycles are expected to become better. Owing to factors such as economic operations, the cost of production facilities will come down as well. This will mean a greater choice of products at lesser and justifiable prices for the customers. As a result of FDI, companies will be able to bring in technology and skills from other countries and this will help in infrastructural development of India. This will also help in creating more value for money for the buyers. After FDI in retail, it is possible to set up a properly organised chain of retail stores as the capital to do is readily available. The investment can be regarded as a long term one as the physical capital put into a domestic company is not liquidated easily. This is its main difference from equity capital. The Indian Retail sector has come off age and has gone through major transformation over the last decade with a noticeable shift towards organised retailing. The retail market is expected to reach a whooping Rs. 47 lakh crore by 2016-17, as it expands at a compounded annual growth rate of 15 per cent. The retail market, (including organised and unorganised retail), was at Rs. 23 lakh crore in 2011-12. According to the study, organised retail, that comprised just seven per cent of the overall retail market in 2011-12, is expected to grow at a CAGR of 24 per cent and attain 10.2 per cent share of the total retail sector by 2016-17.

It is universally acknowledged that, FDI inflow offers many benefits to an economy.

Transactional Corporations (TNCs) can complement local development efforts by:

i. Increasing financial resources for development.
ii. Boost export competitiveness
iii. Generate employment and strengthening the skill base
iv. Protecting the environment to fulfill commitment towards social responsibility
v. Enhancing technological capabilities through transfer, diffusion and generation. FDI Inflows in India Economic reforms introduced in India since 1991 has resulted in acceleration in the flow of foreign investment in the country. Accordingly India has been experiencing a continuous flow of foreign direct investment in recent years. The following table shows a clear picture about the actual inflows of FDI in the retail sector in India since 2001-02.

Year-wise actual FDI inflows into India (in US$ million)

Financial Year (April-March)	Amount	Change over previous year
2001-2002	4,065	+65%
2002-2003	2,705	-50%
2003-2004	2,188	-19%
2004-2005	3,219	+47%
2005-2006	5,540	+72%
2006-2007	12,492	+125%
2007-2008	24,575	+97%
2008-2009	27,3030	+11%
2009-2010	25,8834	-5%
2010-2011	29,427	-25%
2011-2012	36,504	+88%
2012-2013	22,423	-38%
2013-2014	24,299	+8.4%
2014-2015	30,931	+27%
Total Since liberalisation	258,480	

Source: Department of Industrial Policy & Promotion, Govt. of India, 2015

India Retail Reforms with FDI

 The Government of India has opened up the retail sector for foreign players given that it is bursting with opportunities to explore. Though there is 100 percent FDI permitted in the cold chain sector but FDI opening in single and multi-brand retailing is expected to yield much better results. Moreover, there is less consolidation in retail sector, weaker competition and an ever growing middle class with a large appetite for consumer goods and services. The current FDI in retail policy of Indian Government is being discussed below:

I. 51 percent FDI permitted in the multi brand retailing. The unbranded products are allowed for agricultural produce like fruits, vegetables, flowers, grain, pulses, fish and meat.
II. Minimum investment to be brought in, as FDI, by the foreign investor would be US $100 million.
III. FDI is not likely under the automatic route implying that FIPB approval is needed on case by case basis.
IV. 50 percent investment should be done at improving the back-end infrastructure. Back-end infrastructure will include investment made towards processing, manufacturing, distribution, design improvement, quality control, packaging, logistics, storage, warehouse, agriculture market produce infrastructure etc.
V. 30 percent of the raw materials should be procured from small and medium enterprises (SMEs).
VI. Permission to set up stores only in cities with a minimum population of 1 million which is 53 cities in India according to 2011 census.
VII. Government has the first right to procure materials from the farmers.
VIII. While the proposals for FDI will be sanctioned by the Centre, approvals from each State Government will be required.
IX. Retail trading, in any form, by means of e-commerce, would not be permitted, for companies with FDI, engaged in the activity of multi brand retailing.

For the last many years, the Government's policy towards Foreign Direct Investment (FDI) in organized retail sector especially in multi-brand retail continues to be widely debated in commercial circles. Previously 51% FDI was allowed in single brand retailing whereas 100% had been permitted since December 2011 and there is not provision in multi-brand retailing. While defenders argue that FDI would bring in technology to develop logistics and supply chains, help food processing industry to grow, provide employment to lakhs and enhance competition in the retail sphere, the critics point at the harmful effect of retail FDI on the unorganized sector, the 'pop and mom' stores. Owing to lack of Government's clear-cut policy of FDI, a number of MNCs used the indirect and covert path to enter the country, such as setting up of cash and carry Joint Ventures (JVs) with local business houses.

FDI in Indian Retail Sector

Market liberalization, a growing middle-class, and increasingly assertive consumers are sowing the seeds for a retail transformation that will bring more Indian and multinational players on the scene. The big Indian retail players looking to expand their operations include Shopper's Stop, Pantaloon, Lifestyle, Subhiksha, Food World, Vivek's, Nilgiris, Ebony,Crosswords, Globus, Barista, Qwiky's, Café Coffee Day, Wills Lifestyle, Raymond, Titan, Bata and Westside. Well established business houses such as Wadia, Godrej, Tata, Hero, Malhotras, etc., are drawing up plans to enter the fast-growing organized retail market in India. According to reports, Reliance Industries Ltd. plans to enter the retail business in a big way and has identified 18 cities, starting with Ahmadabad, to set up malls. The international players currently in India include McDonald's, Pizza Hut, Dominos, Levis, Lee, Nike, Adidas, TGIF, Benetton, Swarovski, Sony, Sharp, Kodak, and the Medicine Shoppe are entering India indirectly, via the licensee/franchisee route, since Foreign Direct Investment (FDI) is not allowed in the sector.

FDI in the retail market will brunt in a number ways. Some of them are as follows:

i.   With the entry of new players into the retail industry, the demand for agricultural products is set to rise. This is anticipated to increase the productivity output of Indian agriculture and bring better farming practices into the agriculture sector

ii. The unorganized retail sector also projected to grow, but at a slower pace. The quality and diversity of products in the retail sector is also expected to improve.

iii. iii. The share of foreign players in the industry is estimated to increase to 10-12 percent this year (2015).

iv. The value of the Indian retail market stood at USD 435 billion in 2010, with the 7 percent share of modern retail. The retail market is expected to grow.

v.   Due to the terms and conditions of FDI investments, like the minimum limit of USD 100 million and 50 percent to be ploughed into backend infrastructure, the Indian supply chain is likely to benefit. Sophisticated foreign technology will considerably boost the domestic supply chain through efficient storage and transportation facilities, resulting in minimizing wastage

vi. With the entrance of foreign retailers such as Wal-Mart, IKEA, Tesco, Abercrombie and Fitch, Amazon, and others into the Indian market, a streamlining of the existing retail partnerships is expected

vii. Indian consumers will have better accessibility to a wide range of foreign brands.

viii.   The rise in competition will force Indian retailers to work on enhancing the quality of their products.

Despite all these developments, the organized retail business still comprises a small proportion of the total size of the Rs. 9, 00, 00 Crores ($200 billion) retail sector. Retail business is growing at 5-6 percent per annum. However, it is now set to grow at 25-30 per cent per annum. In developed countries, organized retailing makes for over 70 per cent of the total business. Recently, the Government announced its intention to open up the retail sector to foreign investment. It is still, however, debating whether to allow 26 per cent or 49 per cent FDI in the sector.

Conclusion

Indian retail industry is one of the sunrise sectors with huge growth potential which is expanding and modernizing rapidly. Indian retail is one of the most sought after sectors that carry great potential for attracting Foreign Direct Investment (FDI) as foreign investors are extremely eager on charisma in Indian retail sector. In spite of the recent developments in retailing and its immense contribution to the economy, retailing continues to be the least evolved industries and the growth of organized retailing in India has been much slower as compared to rest of the world. Undoubtedly, this gloomy situation of the retail sector, despite the ongoing wave of incessant liberalization and globalization, stems from the absence of an FDI encouraging policy in the Indian retail sector.

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FEASIBILITY STUDY OF BEAUTY SALON BUSINESS IN MUMBAI

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Abstract

"Mirror Mirror on the wall, who is the fairest of them all."

Let's admit it- checking ourselves in the mirror before stepping out of our homes is a daily ritual for all of us, well, at least for most of us. Is the hair alright, is the dress right for the occasion, are the shoes matching and most importantly, *are we looking good*? Looking good, not only in the mirror but in the eyes of people is very important. Desire to look good is no longer the prerogative of celebrities and higher middle class since it cannot be considered as a luxury for a person to want to look good.-it's actually a natural human right. This human need is fulfilled at the beauty salons which have mushroomed across the country. Demographic changes, increase in purchasing power and more working women across the country have increased the profitability of salons. International salons and MNCs offering beauty products have flooded the market. Hair stylists and skin specialists are growing to be niche professions which youngsters want to opt for. Training academies specialising in beauty have also seen an increasing trend of student enrolment. Government of India, too, has stepped in to offer financial packages for women entrepreneurs to encourage them to start their own businesses. The present study focuses on analysing the demand for beauty salons in Mumbai as also the factors responsible for the growth in demand for beauty salons. Also, an attempt has been made to study the financial feasibility of the beauty salon business by making profitability projections based on primary and secondary data.

Key words- Salon, grooming, financial feasibility

Introduction

The beauty and wellness industry has gained a lot of momentum in the last decade. The importance of appearance in society is a globally accepted phenomenon, which can be addressed with an in-depth understanding of human psychology and sociology. Our appearance in society will always matter and make an impression on whoever we come into contact with. Probably, this is the reason why we always take efforts to create a polished image of ourselves that reflects our personality, fashion tastes and aspirations.

In India, the beauty care market is broadly divided into cosmetic products, salons and cosmetic treatment centers. It is observed that a major proportion of the salon industry revenue comes from the female population, although the demand for grooming products among men is also on the rise. Today being well groomed isn't only about looking good, but also includes paying attention to having healthy hair and skin and also taking care of overall fitness. This has given the necessary boost to the salon industry as the current generation is too busy to look at lengthy home remedies.

One of the biggest challenges facing the salon industry today is the need for experienced and well-trained staff. Today's discerning customer places a lot of emphasis on the kind of service being provided in a salon, right from ease in fixing appointments to the solutions provided for skin and beauty issues. The staff has to be constantly updated with the latest trends and happenings in the beauty, wellness and fashion industry. Also, salon business is highly labour intensive and they have the most important recall value for a customer. As a result, a lot of brands have established their training academies where trainees are educated on not just the skills, but also on effective communication, client servicing and use of technology. Also, in view of the stiff competition in this sector, especially in a metropolitan city like Mumbai, to survive in the market, the focus has to be on customer loyalty and client retention.

Leading players in the salon business in India

Taking into account the growing demand for online shopping and apps, Urban Clap Technologies India Pvt. Ltd operates an online platform that helps customers to find and hire beauticians who provide home service. Jawed Habib (JH) group of companies and associates have franchised hair and beauty salons across the country and also run training academies to meet the growing need for beauty professionals. VLCC Health Care Limited is an Indian multinational specializing in scientific weight management solutions, skin and hair care treatments, beauty services and personal care. They have a team of doctors, skin and hair specialists who cater to customers both in India and abroad. Adhuna Bhabani, a hair stylist running the salon BBLUNT, is famous for hair styling for movie stars. Shahnaz.in brands have an international appeal in herbal beauty products. Watermelon The Kids Salon caters to the new segment and demand from parents who are ready to spend on grooming children .Special packages and birthday treats have made it a profitable area and more salons are coming up across the city to fulfill this demand. Dr. Jamuna Pai, a leading skin care specialist, is the owner of 'Blush' and her salons are the preferred destination for celebrities and aspiring models/stars. Kaya Limited with their team of qualified dermatologists and US-FDA approved dermatological procedures operates a chain of skin clinics in India & in Middle East.

Factors responsible for the growth of salon industry

➢ Growing exposure to online media has led to increased spending of consumers on lifestyle needs. Today, not only women but also men and kids are becoming aware of personal grooming.
➢ Increase in per capita income and high standard of living of Indian population has also led to growth in this sector.
➢ India is witnessing growth in the segment of young working population which is generating huge income and savings. This is a key factor which is helping the beauty business flourish in India.
➢ Growth and development of Tier II and Tier III cities can also be one of the reasons for the growth in this sector.
➢ Multinational corporations see a huge potential in India and have been marketing products and opening up salons across India.

Challenges being faced by the salon industry in India as compared to international salons

➢ The demand for beauty services has increased multi-fold but trained manpower is still an issue in India.
➢ Employees, taking advantage of the demand, quit jobs as soon as they are trained, for better opportunities elsewhere or to start their own salons. This has led to a high attrition rate.
➢ Customer loyalty is a challenge in beauty business too, as competition is severe and each tries out new promotional schemes to attract customers. Consumption patterns among various classes have changed over the years

> Growing demand has led to salons opening up in short distances. Competition tends to be a challenge as customers prefer salons closer to their residence. Too many salons trying to attract customers in the same radius, leads to eating into each other's income.

Sources of Finance

Presently, there are various avenues for finance for woman entrepreneurs who want to run small businesses. A beauty salon falls under the category of small businesses and finance can be availed from any of the options as detailed below.

- Government Schemes:The Government runs schemes for woman entrepreneurs to set up small businesses of their own either as a sole proprietorship firm or a partnership firm. Individuals can avail the loan at concessional rate for 3-5 years period and with minimum paper work. Some of such schemes include StreeShakthi Package for Entrepreneurship Development Programmes (EDP) organized by state level agencies and MahilaUdyam Nidhi Scheme (MUN) under Small Industries Development Bank of India which provides financial assistance up to Rs. 10 lakhs to female entrepreneurs for setting up new industrial venture in small scale sector.
- Bank Schemes: Udyogini Scheme is a scheme of Punjab and Sind Bank that motivates female business owners to obtain loans on liberal terms and low interest rates. Dena Shakti Scheme under the Dena Bank has promoted female women-owned businesses by providing various financial services to them. This scheme provides business loans for women engaged in manufacturing sector as well as agriculture and allied activities. Cent Kalyani Schemes provided by Central Bank of India for the benefit of female entrepreneurs. Under this scheme, a women entrepreneur can

get adequate financial assistance for starting a new venture. Most of the private banks in India too offer personal loan facility for setting up a beauty salon.
- Online Lending platform: Currently there are many FinTech companies which through their online platforms, provide loan facility. Some of the prominent players in this space include LendingKart, Lendbox, Faircent etc.

Objectives of the research

- To study the demand for beauty salons in the current scenario
- To study the factors responsible for the growth in demand for beauty salons
- To analyze the business potential /profitability of running a beauty salon business

Hypothesis

i. There is no significant difference between the demographic factors (age, family income and occupation) on the demand for beauty salons.
ii. Beauty salon business is a viable business in Mumbai
iii. Cost and location are the only factors responsible for selecting a salon
iv. Peer pressure and social media have an impact on the demand for beauty salons

Scope of the research

The study focuses on the influence of various demographic, behavioral and psychographic factors responsible for the growth of this sector and the financial viability of the business model of a beauty salon.

Research Methodology

- Primary sources- Primary data was collected from 84 respondents in Mumbai. The samples were drawn as per

convenience sampling method and various statistical tools like tables, graphs and chi-square test were used to test the hypotheses and draw the inferences.

- Secondary sources- Secondary data was collected from various websites, publications, blogs and journals.

Data Analysis

It is found that 78 per cent of respondents visit beauty salons; this shows a good demand for salons in Mumbai. The remaining 22 percent were asked their reasons for not visiting a salon. While some replied that they believed it to be a wasteful activity, for an equal percentage, cost was a deterrent.

Graph 1
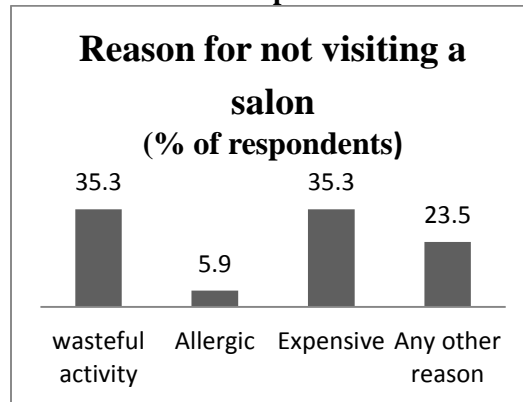
('Any other reason' includes aversion to using chemical products, preference for a particular brand of products, dissatisfaction with the services offered or plain disinterest)

Frequency of visits to salons: It is observed that 74 per cent of respondents visit salon once in a month, 20 percent visits twice a month and the rest visit thrice a month. This means that about $1/3^{rd}$ of the respondents visit salon more than once in a month.

Loyalty to a particular salon: It was found that 84 per cent of respondents were loyal to a particular salon, out of which, 42 per cent preferred the skilled services provided to them by their salon and 38 percent mentioned nearness to their residence as the reason for their loyalty.

Graph 2
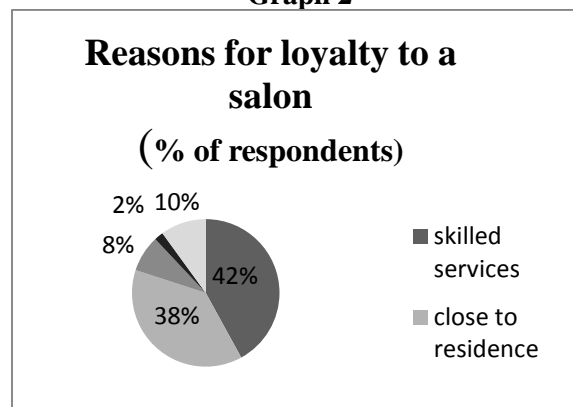
The reasons given for the remaining 16 percent for switching loyalties were cheaper services, distance from home, need for variety, etc.

Factors responsible for selecting a salon: According to the respondents of the research, the following are the factors responsible for selecting

a salon on the basis of rank, 1st is the most important factor and 10th being the least important factor. Knowledge and skill of the staff was ranked most important, followed by location and quality of products, the least important factor being discounts offered.

Graph 3
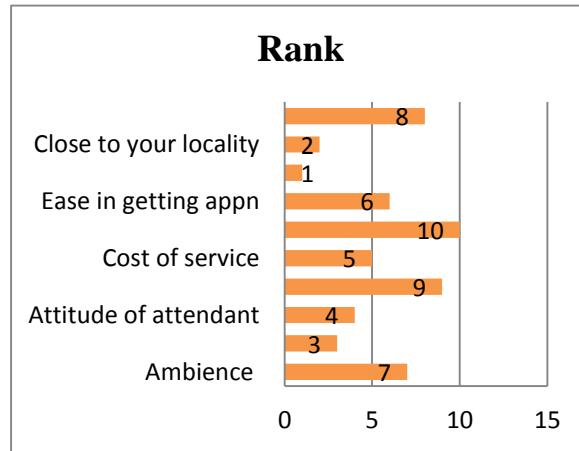
Objective of visiting a salon: It is observed from table 1 that an overwhelming majority of the respondents visit salons to look good and not due to pressure from peers/social media or job requirement.

Table 1

Objective of visiting a salon	% of respondents
Looking good	95
Peer pressure	3
Pressure of Social media	1
Job requirement	1
Impact of celebrities	0

Study of financial feasibility of beauty salon business

The profitability projection for a beauty salon has been prepared based on discussions with various beauty salons in the western suburbs of Mumbai and also content and materials found on various websites.

Assumptions:

- All cost and income assumptions are made for the city of Mumbai.
- A period of 5 years has been considered for the purpose of this analysis.
- The projections have been made for a sole proprietorship firm.
- It is assumed that the Term cum Working capital loan has been sourced from a public sector bank @ 14% interest per annum.
- Surplus cash is assumed to be invested in Fixed Deposit/ Mutual Fund etc. giving an annual return of 8%.
- Direct Expenses are in the nature of Cosmetic purchases and purchase of other consumables. These have a direct relationship with Sales and have been assumed as a percentage of gross receipt from customers.

Table 2: Project Cost

PARTICULARS		AMOUNT
COST OF PROJECT:-		
- Furniture & Fixtures		450,000
- Machinery & Equipment		150,000
- Working capital		400,000
	Total Rs.	**1,000,000**
MEANS OF FINANCE:-		
- Loan from bank		750,000
(Term & Working capital)		
- Own funds		250,000
	Total Rs.	**1,000,000**

Table 3: Projected Profitability Statement (Amount in Rs.)

	PARTICULARS	YEARS				
		I	**II**	**III**	**IV**	**V**
A)	**Income:**					
	Gross Receipts from Customers	2100000	2415000	2898000	3477600	4173120
	Income from Investments	13600	25024	32109	55409	77980
	TOTAL:	**2113600**	**2440024**	**2930109**	**3533009**	**4251100**
B)	**Direct Expenses**					
	Purchases (Cosmetics)	525000	603750	724500	869400	1043280
	Other Consumables	105000	120750	144900	173880	208656
C)	**Gross Profit (A-B)**	**1483600**	**1715524**	**2060709**	**2489729**	**2999164**
	TOTAL:	**2113600**	**2440024**	**2930109**	**3533009**	**4251100**
D)	Operational Expenses	1065000	1235100	1453080	1720511	2063508
E)	Profit Before Depreciation, Interest & Tax	**418600**	**480424**	**607629**	**769219**	**935656**
F)	Depreciation	90000	76500	74025	62921	63383
G)	**Profit Before Interest & Tax**	**328600**	**403924**	**533604**	**706297**	**872273**
H)	**Interest**					
	Interest on Term Loan	98033	81399	62280	40307	15052
I)	**Profit Before Tax**	**230567**	**322525**	**471323**	**665990**	**857221**
J)	Income Tax	-	-	9,066	34,198	72,444
K)	**Profit After Tax**	**230567**	**322525**	**462257**	**631792**	**784777**
L)	Depreciation Add Back	90000	76500	74025	62921	63383
M)	**Cash Profit**	**320567**	**399025**	**536282**	**694713**	**848160**

Table 4: Details of expenses (Amount in Rs.)

	PARTICULARS	Years				
		I	II	III	IV	V
1	Salary to Staff	540,000	648,000	777,600	933,120	1,119,744
2	Rent	300,000	330,000	363,000	399,300	439,230
3	Training	24,000	26,400	29,040	31,944	35,138
4	Marketing	24,000	28,800	34,560	38,016	41,818
5	Statutory Charges	15,000	16,500	18,150	19,965	21,962
6	Telephone Expenses	12,000	13,200	14,520	15,972	17,569
7	Tea & Refreshments	12,000	13,200	14,520	15,972	17,569
8	Electricity Charges	96,000	105,600	116,160	127,776	140,554
9	Repairs & Maintenance of Assets	30,000	39,000	68,250	119,438	209,016
10	Other Miscellaneous Expenses	12,000	14,400	17,280	19,008	20,909
	TOTAL :	**1,065,000**	**1,235,100**	**1,453,080**	**1,720,511**	**2,063,508**

Table 5: Ratio Analysis

RATIO	YEARS				
	I	II	III	IV	V
Gross profit ratio	70.65%	71.04%	71.11%	71.59%	71.87%
Net profit ratio	10.91%	13.22%	15.78%	17.88%	18.46%
Debt-equity ratio	1.68	1.01	0.51	0.17	-

Testing of hypothesis

1) There is no significant difference between the demographic factors (age, family income and occupation) on the demand for beauty salons.
   Demographic factors considered for this study are age, family income and occupation. Accordingly this statement is divided into three parts i.e.

- **Ho: There is no significant difference between age and demand for the beauty salon**
- **H$_1$: There is significant difference between age and demand for the beauty salon**

Table 6

Age	Visit salon (x)	Don't visit salon(y)	Observed frequency f_o	Expected frequency f_e	(f_o-f_e)	$(f_o-f_e)^2/f_e$
16-25	24	8	32	21	11	5.76
26-35	14	2	16	21	-5	1.19
36-45	20	3	23	21	2	0.19
46 & above	8	5	13	21	-8	3.05
Total	**66**	**18**	**84**			**Chi square value X2 = 10.19**

Here degree of freedom is 3 (4-1) and at 5% level of significance, our calculated X^2 value is 10.19 which is greater than table value of X^2 i.e. 7.815. Hence our H_o stands to be rejected and we will accept our H_1 hypothesis which says there is significant difference in demand for beauty salons between different age groups.

- **Ho: There is no significant difference between family income and demand for the beauty salon**
- **H1:   There is significant difference between family income and demand for the beauty salon**

Table 7

Annual Family Income (Rs.)	Visit salon (x)	Don't visit salon(y)	Observed frequency f_o	Expected frequency f_e	(f_o-f_e)	$(f_o-f_e)^2/f_e$
2-5 Lacs	23	6	29	21	8	3.05
6-10 Lacs	11	2	13	21	-8	3.05
11-15 Lacs	8	4	12	21	-9	3.86
above 15	24	6	30	21	9	3.86
Total	**66**	**18**	**84**			**Chi square value $X^2 = 13.81$**

Degree of freedom is 3 (4-1) and at 5% level of significance, our calculated X^2 value is 13.81 which is greater than table value of X^2 i.e. 7.815. Hence our H_o stands to be rejected and we will accept our H_1 hypothesis which says there is significant difference in demand for the beauty salon between various income groups.

- **Ho: There is no significant difference between occupation and demand for the beauty salon.**
- **H1: There is significant difference between occupation and demand for the beauty salon.**

Table 8

Occupation	Visits salon (x)	Don't visit salon(y)	Observed frequency f_o	Expected frequency f_e	(f_o-f_e)	$(f_o-f_e)^2/f_e$
Service	30	4	34	16.8	17.2	17.61
Business	11	4	15	16.8	-1.8	0.19
Profession	10	3	13	16.8	-3.8	0.86
Student	7	3	10	16.8	-6.8	2.75
Homemaker	8	4	12	16.8	-4.8	1.37
Total	**66**	**18**	**84**			**Chi square value $X^2 =22.79$**

Degree of freedom is 4 (5-1) and at 5% level of significance, our calculated X^2 value is 22.79 which is greater than table value of X^2 i.e. 9.488. Hence our H_o stands to be rejected and H_1 hypothesis will be accepted which says there is significant difference between the occupation of an individual and their demand for beauty salon.

2) Beauty salon business is a viable business in Mumbai

▪ As can be seen from the projected profitability statements, the project is very much viable as the business is generating a net profit return of close to 20%. The net profit margin is steadily growing year on year.

▪ Also the establishment is making a healthy cash profit and would not need to resort to debt finance from the 6th year onwards.

▪ Thereby the 2nd hypothesis proves to be correct. This business is not only profitable but also the breakeven point of this business is very short.

3) Cost and location are the only factors responsible for selecting a salon

It was assumed that cost and location were the only factors responsible for selecting a salon, but from the below table, it is clear that skilled services and location of the salon are the most important factors for the customers along with other factors such as quality of products, attitude of attendants and also the ambience.

Table 9

What is more important for a parlor visitor	Rank
Knowledge /skill	1
Close to your locality	2
Quality of Products	3
Attitude of attendant	4
Cost of service	5
Ease in getting appointment	6
Ambience	7
Package offered	8
Brand image	9
Discount offered	10

4) Peer pressure and social media have an impact on the demand for beauty salons

Table 10 shows that that peer pressure and pressure from social media have a very negligible impact on the demand for beauty salon. The objective behind visiting a salon for majority of respondents is the desire to look good.

Table 10

Objective of visiting a salon	% of respondents
Looking good	95
Peer pressure	3
Pressure of Social media	1
Job requirement	1
Impact of celebrity	0

Conclusion

There is a great demand for the salon industry in Mumbai. Also there is vast scope for its growth in various sub-sections like for kids and for men, due to various factors like increase in income level, better standard of living, more exposure to international brands and need to relieve stress. This research throws light on various factors on the basis of which salon services are liked. Also, it is proved that there is no similarity in the spending pattern on salons by women with respect to different demographic factors like age, occupation and family income. It is also observed that in Mumbai, more importance is given to skill and location of the salons rather than cost and discounts offered. This research portrays the salon business as a viable business as it has a potential to generate net profit close to 20%. Also, this business has a faster recovery rate of initial investment based on the projected estimates shown in the research paper.

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CONTRIBUTION OF TOURISM AND HOSPITALITY INDUSTRY IN THE ECONOMY OF INDIA

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Abstract
Tourism is a practice of travelling for recreational or leisure purpose. Tourism has become a popular global leisure activity. It is a short term and temporary movement of people. It provides a source of income for the country. Tourism involves an overnight stay away from the normal place of residence. It includes "travel" and "stay" in the place outside the usual environment. Tourism includes transportation, accommodation and entertainment.

There are different types of tourism like:-

- **(i) Adventure tourism,**
- **(ii) Cultural tourism,**
- **(iii) medical tourism,**
- **(iv) Sports tourism,**
- **(v) Water tourism,**
- **(vi) Wild life tourism**

It is rightly said that, "All tourism is travel but all travel is not tourism". Tourism is related to pleasure, holidays, travel and going or arriving somewhere. Tourism and Hospitality Industry contribute and playing a vital role in the economy of India. It involves movement of people to, and their stay at various destinations.

Keywords: - Arriving; Environment; Holidays; Leisure Activity; Temporary Movement

Introduction

The Indian tourism and hospitality industry experienced a growth of 24.6% during 2009–2010 timeframe. The industry is the third-largest foreign exchange earner, accounting for 6.2% of India's GDP and 8.8% of India's total employment, according to a report by the Planning Commission. It has significant linkages with other sectors such as agriculture, horticulture, transportation, handicrafts and construction. The tourism industry includes travel agencies, tour operating agencies and tourist transport operating agencies; units providing facilities for cultural, adventure and wildlife tourism; surface, air and water transport facilities for tourists; and convention/seminar units and organizations.
According to the Planning Commission,

"*The sector creates more jobs per million rupees of investment than any other sector of the economy and is capable of providing employment to a wide spectrum of job seekers, from the unskilled to the specialized, even in the remote parts of the country.*"

The sector's employment-generation potential has also been highlighted by the World Travel & Tourism Council (WTTC), which says India's travel and tourism sector is expected to be the

second-largest employer in the world, employing 40,37,000 people, directly or indirectly, by 2019. Travel and tourism is a USD 32 billion business in India, according to industry estimates; in addition, the hospitality sector is sized at USD 23 billion and it is expected that this sector will witness an inflow of USD 12.17 billion in investments over the next two years, according to market research. It is expected that the hospitality sector is expected to see an additional US$12.17 billion in inbound investments over the next two years, based on their estimates.

The Indian tourism sector includes medical and healthcare tourism, adventure tourism, heritage tourism, ecotourism, rural tourism and pilgrimage tourism. Medical tourism also known as health tourism has emerged as an important segment, owing to India's skilled healthcare professionals and the lower cost of healthcare facilities in the country. Wellness tourism is regarded as a sub-segment of medical tourism and it involves the promotion and maintenance of good health and well being. India, with its widespread use of Ayurveda, Yoga, Siddha and Naturopathy, complemented by its spiritual philosophy, is a well-known wellness destination.

Review of literature

The reviews taken from various e-journals, magazines, news papers and from various websites, which already done in related study. "Hotel Industry is one of the important components of tourism industry.

The definition of tourism industry can't be completed without mentioning the presence of a hotel. A hotel is a place which provides a space to stay, some food & beverages to eat and drink, and some facilities to enjoy. Hotel industry is playing a vital role in earning millions of dollars from foreigners and thus contributing towards revenue generation and increasing employment opportunities to the host community", explain by Sharma, A. and Kukreja, S.

(2013), also present paper with "highlights the significance of hotel industry in Indian economy,

their demand and supply scenario, and various challenges before hotel Industry and Government efforts to remove the problem associated with this industry." Kulkarni, A. (2012), examine that, apart from traditional business or leisure travel, India's hospitality sector has been witnessing interest from a variety of segments like meetings, incentives, conferences and exhibitions (MICE), wellness tourism, and spiritual and pilgrimage tourism. "The demand has been strong from both foreign as well as domestic tourists". "Given the rather diverse nature of demand, the hospitality industry is also looking at creating adequate products to service the varied tourist requirements. With support and initiatives by the governments at various levels, the hospitality sector is moving toward comprehensive growth." Pinto, O.R. (2012), give justification that "there are various factors that affect the

Indian economy but the researcher through this study wants to find whether the impact of global recession has affected the Indian economy severely or gradually decreases with new initiative policies. The utility of the study is to know how are the Hospitality industries growing after global recession in terms foreign tourist arrivals, generation of foreign exchange reserves and how are they contributing to the Indian economy in terms of GDP, reduction in inflation, rising of stock markets". Nigam, V. and Srivastava, S. (2011), they focus on the "impact of global economic meltdown on Tourism industry in India as a whole with the case study of Lucknow city. Tour operators, Hoteliers, and other government officials of tourism were interviewed and make out the problems and prospects of tourism industry. It also helps to analyse the remedial measures which could be taken at the time of recession."

According to Ratheiser, D. (2010), "the contribution of the entire travel and tourism sector in India to Gross Domestic Product is estimated 8.6% (USD 117.9 billion) in 2010 to 9.0% (USD 330.1 billion) by 2020. Between 2010 and 2019 the demand for travel and tourism in India is expected to grow annually by 8.2%,

which will place India at the third position in the world.

Travel and tourism in India also accounts for 49,086,000 jobs in 2010 (about 10% of total employment) and is expected to rise to 58,141,000 jobs (10.4% of total employment) by 2020 (World Travel and Tourism Council, 2009)."

Muthe, P.R. (2010), explain that the "Indian economy is consist of majorly three sectors (1) Primary sector (known as agriculture), (2) Secondary sector (known as Industry) and (3) Tertiary sector (known as service sector) which service sector recently alone contribute 55.1% of Indian GDP. The author analyse the impact of global recession on service sector in India, specially Tourism and Hotel Industry in the country, because tourism and hotel industry has playing the vital role in service sector regarding economic development of Indian economy. They focus on further challenges and opportunities for tourism and hotel industry during recession period."

Market Size
India's rising middle class and increasing disposable incomes has continued to support the growth of domestic and outbound tourism. Total outbound trips increased by 8.7 per cent to 19.9 million in 2015. Inbound tourist volume grew at a Compound Annual Growth Rate (CAGR) of 6.8 per cent during 2010-15.

The number of Foreign Tourist Arrivals (FTAs) has grown at a CAGR of 3.7 per cent to 5.29 lakh year-on-year in May 2016. Foreign Exchange Earnings (FEEs) during the month of May 2016 grew at a rate of 8.2 per cent year-on-year to Rs 10,285 crore (US$ 1.52 billion).
The number of tourists arriving on e-Tourist Visa during June 2016 reached a total of 36,982 tourists registering a year-on-year growth of 137.7 per cent.
Online hotel bookings in India are expected to double by 2017 due to the increasing penetration of the internet and smart phones.

Indian   Travel   and   Tourism   Industry
Indian tourism offers most diverse products globally. The country's rich history, cultural heritage, beauty, diversity of religion and medicine fascinate budget and luxury travellers. Tourism in India has registered significant growth over the years. This has been led by growth in both leisure and business tourism. Rising   incomes,   increasing   affordability, growing aspirations, increasing globalisation, and a growing airline industry along with improvement in travel-related infrastructure have supported industry growth. Tourism holds immense potential for the Indian economy. It can provide impetus to other industries through backward   and   forward   linkages   and   can contribute significantly to GDP.

Performance of Travel and Tourism Industry in 2015

Parameter	Value
Foreign tourist arrivals in India	5.11mm nos(P)
Indian nationals departure from India	11.07 mm nos (P)
Domestic tourist visits to all States	650.04 mn nos(P)
Foreign Exchange Earnings from Tourism	
In INR Terms	Rs.549.6 bn
In US$ Terms	US $ 11.39 bn

Note: P (Provisional) Source: Ministry of Tourism, Govt of India

India's travel and tourism industry is expected to generate revenue of about Rs. 2200 bn (US$ 50 bn) in 2017, according to the World Travel & Tourism Council (WTTC). This would be around 3.1% of total GDP. However, since travel and tourism touches all sectors of the economy,

its real impact is greater and the travel and tourism economy directly and indirectly accounts for 5,533 bn (US$ 118 bn), equivalent to 8.6% of total GDP.

Employment Opportunities

The hospitality industry is a labour intensive one and India has a large concentration of English speaking individuals, which prove as a catalyst in advancement and prosperity of the industry. Besides the regular jobs of a travel agent, tour guide, air hostess, chef, waiter and managers other opportunities await those who are keen on taking up a job in the sector. The new trends that have been emerging off late are as follows:

- Cruise Ship Management
- Club Management and Recreation and Healthcare Management
- Airline Catering and Cabin Service
- Hotel Tourism and Association
- Fast Food Joint Management and Restaurant Management
- Beverage, food and confectionery production
- Institutional and Industrial Catering and
- Government owned catering departments like armed forces mess, ministerial conventions and railways services.

Career in Tourism Industry

- The travel and tourism industry is growing very fast. Thus this growing sector relates to various related services travel agencies, banking, hotels, guides, airlines and other services.
- The Ministry of Tourism grants licenses to three categories of tourist guides: regional, state level and monument guides. Airlines require people for ground as well as flight duties.
- Foreign banks and dealers in foreign exchange require people to assist their clients in their travel requirements. Graduate integrated tourism and travel management degree courses are opted to the students interested in tourism industry. Students can also opt Diploma

in Hospitality and Tourism Business. A postgraduate Course in travel and tourism is also offered by the Universities.

Road Ahead

India's travel and tourism industry has huge growth potential. The medical tourism market in India is projected to reach US$ 3.9 billion in size having grown at a CAGR of 27 per cent over the last three years. Also, inflow of medical tourists is expected to cross 320 million by 2015 compared with 85 million in 2012. The tourism industry is also looking forward to the expansion of E-visa scheme which is expected to double the tourist inflow to India. Rating agency ICRA ltd estimates the revenue growth of Indian hotel industry strengthening to 9-11 per cent in 2015-16. India is projected to be the fastest growing nation in the wellness tourism sector in the next five years, clocking over 20 per cent gains annually through 2017.

Conclusion

The Tourism and hospitality industry is very sensitive to economic cycles and is therefore essentially linked to the state of the economy. It's totally like a agriculture industry in India because the Tourism and Hospitality Industry effect by nature up-down like agriculture. Last one decade is witnessed of the Indian economic downturns and a historic growth period during this time. After analyzing all the information/data collected from various sources, it may be concluded that the Indian Tourism and Hospitality Industry is expected to show a healthy growth in the coming years on the base of previous years which provide good and healthy economy to India due to strongly increased FDI, Tourism development programme in the country, favourable government policies, 2010 commonwealth games in the country, 2011 Cricket World Cup and other international events, those establish the strong economy.

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NATIONAL SERVICE SCHEME WITH AN APPROACH TO SOCIAL WELFARE & DEVELOPMENT

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Abstract

The concept of National Service Scheme (NSS) encompasses with the new trend and an approach towards community centric development. This ideology incorporates with the methodology to advocate, organize, execute, initiate and implement strategies to uplift the socio-economic status of our community.
National service Scheme (NSS) was ceremonially established on 24th September1969, the birth centenary year of the father of the nation, Mahatma Gandhi, therefore on this particular day we observe as National Service Scheme (NSS) day with great pride and honour.The overall aim of national Service Scheme (NSS) is to impart denotation aspect to the higher education system and to encourage the youth, budding leaders and emerging technocrats towards community service. It is essential to arouse the spirit of social consciousness of the students and stipulate them a favourable circumstance to work for the welfare of the unprivileged people of the doorstep of our community.

Key words: Incorporate, methodology, centenary, technocrat, strategies, denotation, advocate, stipulate.

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Introduction

In India, the notion of National Service Scheme (NSS) was enacted with an objective of involving all the citizen of the country including government agencies, social reformers and the students towards nation building. From the view point of the task of national service, we would sail back towards the philosophy of Mahatma Gandhi; The father of the nation, Mahatma Gandhi, who tried to emerge out social consciousness, a referent of moral autonomy, universal brotherhood and to march for peace and tranquility. Thus the cardinal motif of community service is to be aware of our social responsibilities and moral protocols [1]. Hence, for the accomplishment of NSS (National Service Scheme) programme or Social Service, a healthy atmosphere, a positive social climate, congenial relationship and tendency to serve must prevail and deeply penetrate in our soul and within our approach. "Of course" hard work and

unconditional love for the nation, strong

determination and will force are the core ingredients for social service.

The Cardinal Concept of Social Service

The basic concept of Social Service is to create social stimulant enriched with moral civic sense and wisdom and to be the reflection for social transformation. For social transformation we need to contribute towards national development, foster global competencies among students to inculcate the values and ethics of social obligations. It is our judgment that human values are the integral component of human life and we wish to extend our joint hands for the attainment of common goal. We also need to motivate the future leaders and technocrats of the nation, the emerging students to groom up towards the eternal values of life, exhibit sincerity and sensibility in applying skill to face the fast

growing global challenges and opportunities. We need to encourage our students to dedicate and commit themselves through the synergy of wisdom and inner urge to sprout the value system and pursue for excellence.

Interpretation

There is necessity of discipline, moral autonomy and human values because knowledge is not sufficient to walk on the road of progress and prosperity. Wisdom equally gives the right direction to knowledge. We should also aspire to garner the essence of democratic living and uphold an intention for unconditional service and to inspire others to exhibit consideration for fellow humanistic approach. The overall ambition of NSS (National Service Scheme) is to influence an extension to the modern education system and stimulate the youth for the service of the nation at large. The educated youth who all are supposed to be the future leaders and technocrats are expected to take the succession of administration in future. These budding youth are supposed to be familiar with the dwellers of the rural community and the slum areas of the villages, since majority of the population of our country reside in the remote villages. Hence, it is necessary to arouse the social conviction of the students and facilitate them with ample opportunities and platform to work with the people in the village and slum areas [2]. The doctrine of NSS (National Service Scheme) converge over broad attributes and throws light on the burning issues underlying the need and an urgency to cope up with the idea of the community in which the social service is to be executed. They (the social worker) must infer relevant information and equally impute themselves in relation to their community. The social worker is also anticipated to identify and incorporate the basic perquisites and the prevailing problems of the community and search for remedial measures to overcome or to some extent minimize the problems. The social worker ought to develop a sense of mutual understanding among themselves and with the villagers to propagate their social and ethical responsibilities. They should also utilize their wisdom and

inquisitive skill to determine the practical solution for an individual and the pathos which are being prevailed in the entire community. They should also develop competency required for group living and sharing out moral responsibilities. Being a social worker, we need to cultivate skill in mobilizing community involvement, acquire leadership trait and democratic attitude. One and after all; a social worker is expected to take up his job with a deep sense of responsibility, enjoying a challenge for every new situation and try his level best to make positive contribution.

As far as the history and pre-episode initiative of NSS (National Service Scheme) is concerned, it was launched in Gandhiji's birth centenary year, 1969 in thirty-seven (37) Universities with initiative over forty thousand (40,000) students with an aim to develop the overall personality of the students through community service. Accordingly, post-independence era was marked by an initiative for community service under the guidance and wholesome patronage of Dr. Radhakrishnan, who recommended for the establishment of NSS Campaign in the sphere of academics. Thereafter the Central Advisory Board of Education (CABE) had paid heed to uplift the plight of the rural mass and approved a resolution in January, 1950. In the year 1958, the honourable prime minister, Pandit Jawaharlal Nehru had made a prerequisite to the chief minister to promote NSS drive to the doorstep of our society. In the year 1959, a layout and proposal of this scheme was placed before the education minister's conference about the urgency and workable scheme for the national development. The conference alluded for the appointment of a committee which was formed on 28th August in the year 1959 under the chairmanship of Dr. C.D. Deshmukh; The Education Commission under the patronage of Dr.D.S. Kothari (1964-1966) made endorsement that social service to be an integral element of education. On September 24th 1969, the union education minister Dr. V.K.R.V. Rao, insinuated the NSS programme in 37(Thirty-seven) Universities covering all states of the country [3].

In the present scenario (21st Century), the honourable prime minister, Sri. Narendra Damodar Das Modi, from 26th May, 2014 had taken up an incessant drive about "SWACHH BHARAT ABHIYAN". At the outset we express our thankfulness to him for the praiseworthy announcement that he proclaimed nationwide campaign in anticipation of directing the competent government authority like the Ministry of Human Resources, Department of Higher Education, Department of Youth Affairs and Sports, The Ministry of Environment, Forest and Climate Change, academic apex bodies like University Grants Commission(U.G.C), All India Council of Technical Education(A.I.C.T.E.),Department of Science and Technology(D.S.T),and other concerning organizations to initiate and march towards "SWACHH BHARAT MISSION" with an endeavor of emerging the prestige to reflect the neo-dynamics of the country. It also summits towards inculcating self-respect and human dignity of the countrymen. The objective which he laid is aimed of improving the quality standard of living, providing adequate reorientation programmes and campaigns contributing towards cleanliness in the surrounding in accordance with the pace of international growth of the economy. As per the directives of NSS (National Service Scheme), each educational institution should pay heed for creating a framework towards skill development and equally sustain for the active participation at large. Accordingly, we must enumerate some of the common and distinct activities and amendments which we can impute and the campaign which can be undertaken to foster social help and bring new awakening of humanistic tendency to restore towards growth, peace and prosperity.

To render community service, planning of several aspects for intensive developmental work and steps to carry out the significant activities in the areas of environmental cleanliness, sustainable community development, safeguarding our natural resources, family welfare and health education, community awareness and hygiene, immunization, sanitation and drainage system, personal and domestic hygienic condition, social problems like inadequate housing, unemployment, lack of opportunities, financial scarcity, adult education programmes for the unprivileged people of the slum areas whose lives remained in the cramped hole with full of apathy, extending social help for the people under the poverty line, extending help for the weaker section of the society, campaign for free medical checkup, campaign for blood donation, organizing of camps against drug addiction and eradication of drugs, provision to wipe out epidemic diseases, awareness towards AIDS (Acquired Immune Deficiency Syndrome) & HIV, problem related to unwanted pregnancy, population control and family planning, health care and delivery system, nutrition for mother and child, advantages of breast feeding, knowledge of using contraceptives and pills, to impart knowledge of pathogenicity of germ causing microbes and prophylactic measure against invasion of germs, extending help for the patients in hospitals, cleanliness of public property like schools, parks, bus stand, railway station, cleanliness of religious places like Temple, Guruduwara, Mosque and Church and rendering help for physically impaired person. The social worker is expected to make intensive introspection and survey to extend liberation during natural climatic forces and disasters like flood, drought and earthquake [4].

Social worker also focuses and looks after the social evils which are being prevailed in our community like casteism, untouchability, dowry harassment, upbraiding, domestic violence, spousal abuse, family conflicts, child labour, castigation, vituperation, slave trade and slavery, bondmen-ship, child and female abuse, molestation, opprobrium, eve teasing, misconception and superstitious beliefs. The social workers are there to advocate equal rights and dignities irrespective of gender, promoting women empowerment, human rights, to arouse mutiny against female infanticide and to emerge out social ethos and sense of fellow nationalism, brotherhood, benevolence, sympathy and virtues of secularism, peace and social harmony. Social

workers serve individuals, families and communities. They dole out at all levels of the society. Such representatives help people to deal with their relationship with others, solve their personal, family and community problems; and leave no stone unturned to cope up with the social and environmental forces affecting daily life [4]. However, efforts can gradually be initiated in India and we shall look forward to contribute social service in the mentioned core areas:

Health education and human welfare: Health is the state of wellbeing of a person, a person is said to be healthy, if the person is physically and psychologically fit. Health refers to the soundness and vigor of our body and mind, and eradication from diseases. Being a social worker it shall be our urge and endeavor to bring awareness in the society about the healthy habits, proper sanitation, personal and domestic hygiene, deterrence against germ causing microbes, shield against infectious and contagious diseases [5]. Provision for safe drinking water, dispersible of sewage and proper drainage system to resist against the pathogenicity (breeding) of the germs. Immunization for the infants and vaccination against epidemic diseases are some of the core theorem of staying healthy.

Environmental Cleanliness: The outcome of environment on health is a crucial factor that we should be familiar and impute over the catastrophic health hazard, transcending health risk, pathogenicity of infectious diseases and ways of maintaining prophylactic measures. Most significant of all our wisdom would aspire our community to cultivate a cooperative endeavor between common masses, health consultants, social workers and commonwealth government agencies in facilitating ecofriendly atmosphere and to initiate the desired level of health infrastructure to the doorstep of our community.

Sarwa Siksha Abhiyan: As the name represents "Education for All" to promote universal education for all community especially for our rural mass irrespective of caste, colour, creed, religion and gender. With a view of "Sarwa Siksha Abhiyan" a social worker is projected to perform a survey of Aanganwadi, Balwadi and primary schools of the rural areas to uplift the status of elementary school education.

Universal Adult Franchise: Our prime objective is to initiate motivating programmes and campaign to emerge out full literacy rate in the entire nation. The team of social worker is anticipated to educate all the people in the slum areas so that they can acquire fundamental concept of the alphabets and could be self-dependent to read and write.

Social reforms and services: As mentioned earlier a wide range of programmes and activities concerning social reforms and services are needed to be carried out for the serenity of the society, some of the promising activities like tree plantation, cultural unity programme, Feminism and Women Empowerment, Conservation programme, Communal Harmony programme, De-worming day, AIDS control, National Youth Service, anti-terrorism, policy of non- violence, eradication of tobacco, International literary week, population control, Sambidhan Day, Sadbhavna Diwas, World Human Right day, world peace and harmony day, national safety day, blood donors day and Manav Ekta Diwas.

Protection for women: India is a country of secularism, sovereign and democratic nation where people advocate towards "Right to Equality" without any gender discrimination and we are also proclaiming to render equal dignity and right for women. But still in the present scenario, the women of the slum and rural areas are criticized, victimized and suppressed under the ordeals and dictatorship of male chauvinism. We should look forward to advocate equal rights and dignities for women so that they can aspire to walk side by side, commensurate with the males and face challenges and opportunities in their life race.

Protection for girl child (Bati Bachao; Bati Padao): The prime concern of today is that why the girl child is dragged under the "purdah system", why they are not allowed for education and other social amenities, why they are

malnourished? Why they are being looked down? Why they become victim of social insecurity? We must eliminate such narrow prejudices and march towards equality. There must be strict action and chastisement for sex investigation in hospitals, clinics and nursing homes, we must withstand against the serious crime of fetus infanticide. (Killing/abortion of girl child)

Campaign against Drug addiction: We know that Drugs of any kind are the silent killer of life; initially people are inclined and fascinated towards some pills and other habit forming stimulants which in turn, they get addicted to those drugs and ultimately ruin their whole family. Drugs like alcoholism, chewing and inhalation of tobacco, narcotic items, sleeping pills, use of sedatives, hypnotics, tranquilizers, anxiolytics, antidepressants, corticosteroids and anabolic steroids, cocaine, brown sugar and other stimulants are the source of slow poison to the body and mind. Being a social worker it should be our responsibility to bring awareness and impart a talk to the villagers and the dwellers of our community about the toxicity of the action of these drugs and how these drugs are silent killer of our life.

To safeguard vital resources like water, electricity and other ecosystem: We are acquainted with that our Earth is in the declining health [6]. All the vital resources are distorted by the act mankind. Water is the most precious natural wealth, although three fourth surface of our is covered with water but hardly one percent water is available for the domestic use. The water is contaminated by the action of industrial wastes; as a consequence, the polluted water comes in contact with the water reservoir which we use for domestic purpose. In the same way excessive use pesticide in the agricultural field is damaging the soil. Human beings are immune to misuse electricity for their day to day life, similarly fossil fuels like coal is excessively used for industrialization. What would be the outcome if we do not search for other alternatives to preserve these vital resources?

Adopting Art of Living: Apart from complete

balanced nutritive diet, rest and domestic hygiene, one must adopt and accustom with "the art of living" which includes physical exercise, yoga-sana, meditation, pranayam, contemplation, reflexology, stretching and physio-therapy. By these therapies and practices we can activate our body and mind, these activities improve our blood circulation, re-energize the enzymatic pathway, improve digestion, develop power of concentration and keep our body energetic, we should advise others to maintain healthy lifestyle and get freedom from diseases.

To withstand against cruelty towards animals: We are social animal, being a social animal we should garner the quality of human values and humanism, we should have kindness and mercy for all the creature of god and show concern against the malice towards animals. We know how brutally the bullock carts, horses, camels and large number of animals are treated. In the religious practices how mercilessly the animals and birds are slaughtered. We must proclaim and arouse all individual for having soft corner and feeling of mercy towards animals. We must appeal to the civil authorities and civilized people to pay heed in this apprehension.

To advocate equal rights and dignities for human being: We must inculcate the idea of national integration, universal brotherhood, symbiotic relationship, mutualism, peace and communal harmony. We should facilitate the essence of our duty, discipline, moral code of conduct, civic sense, respect human dignity and retain the pride of our cultural heritage.

Time to time cloths and medicine distribution: One of the simplest and convenient way of extending help for the poor and unprivileged people is to distribute old dresses and warm clothes so that they can resist themselves against the harsh winter, we can also collect some fund as a donation or charity for the purchase of some common medicines, domestic items like soaps, oil, paste and detergent.

Love for Nature (Aesthetic value of Nature and its beauty): Nature is the greatest souvenir of

almighty that almighty gave to mankind from the paradise edge. We exist in the lap of nature. Nature reenergizes and revitalizes our soul and brings with new zest and temptation for our existence. But the over-greed and devilish act of mankind are impoverishing the environmental surrounding. We should earnestly aspire to garner our inquisitive skill and set suitable strategies for unremitting betterment. We should move forward with an innovative idea, valuable thoughts and interpretation that could enrich and fortify with new awakening towards global environment in the new millennium.

Conclusion:

The integral vista of National Service Scheme (NSS) is to visualize the slogan of mutiny" NOT ME BUT YOU" which reflects the essence of democratic living and uphold the need for selfless and unconditional love towards social service.

Aspirants should have a genuine consternation for the welfare of the people, the motive to extend help for the people; they should develop a strong determination, will power and perseverance to face adversities. A social worker should guise himself as an educator, as a mentor, as a philosopher, as a friend, as a counselor, as a guide, as a therapist, as a researcher, as a leader and overall as a social reformer with a mission to work with people, public agencies, private businesses, hospitals, clinics, schools, nursing homes, private practices, policy enforcement department, courts, non-governmental organizations (NGO),Department of Health and Family Welfare(DHFW), Environmental and Pollution Research Department, Department of Human Rights, Family and Child Welfare Department, Urban and Rural Community Development (URCD),Social Welfare Administration(SWA), Food and Drug administration (FDA) and Labour Welfare Department.

It should also be the ultimate aim to inculcate social, moral and ethical values and built up a

sense of democratic nationalism and humanism. Hence, with an inner urge and drive we should aspire to be a sensible citizen to participate in planning, execution and evaluation of social service.

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STARTUP INDIA: A NATION BUILDING INITIATIVE

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Abstract

Startup India scheme launched by the Indian Prime Minister Shree Narendra Modi on 16 January 2016. It is most effective mission for the India. Startup India movement started to boost digital entrepreneurship at the grassroots level. This is most effective campaign which will create more job opportunities to the Indian youth. Startup means youth of the country will be supported through finance from Bank to strengthen that startup better so that they can create more employment in India, and develop the nation. This is an initiative by the Indian Prime Minister Shree Narendra Modi to give opportunities to the youth to become industrialists and entrepreneurs which need the establishment of a Startup network. The government has also initiated the process to facilitate bio-entrepreneurship for the promotion of Startups.

This paper studies the real implications of the Startup India campaign which will create more job opportunities for the India, its improvement and development to the youth and nation.

 Key Word: Newspaper, Magazine, Ministry of commerce, G.O.I action-plan

Startup India scheme is a most effective mission launched on 16th January 2016, by the Indian Prime Minister Shree Narendra Modi.A new campaign start-up announced during his speech on   Independence Day 2015. This is a most effective campaign which will create more job opportunities to the Indian youth. This is an initiative by the Indian Prime Minister to give opportunities to the youth to become industrialists and entrepreneurs which need the establishment of a start-up network.

Meaning of start-up

Startup means youth of the nation will be supported through the finance from Bank to strengthen those startups to improve so that they can create more employment in India. The actual meaning of Startups is an entity, incorporated or registered in India not previous to five years, with annual turnover not extending Rs-25crore in any preceding financial year, working towards innovation, development, development or commercialization of new product, processes or service driven by technology or intellectual assets.

Historical background of start-up

In the last 1990s, the most common type of Start-up Company was a dotcom. Venture capital was extremely easy to obtain during that time due to frenzy among investors to speculate on the emergence of these new types of business. Unfortunately, most of these internet Start-ups eventually went bust due to major oversights in their underlying business plans, Such as a lack of sustainable revenue. However, there was a handful of internet Start-ups that did survive when the dotcom bubble burst. Internet bookseller Amazon.com, Flip Kart, and Internet action portal eBay are examples of such companies.

Startup capital

 Startup Capital refers to the money that is required to start a new business, whether for

office space, permits, licenses, inventory, product development and manufacturing, marketing or any other expense. Startup Capital is also referred as "seed money". The money can come from a Bank, in the form of a business loan, or from an investor, group of investor, or venture capitalist.

Budgetary allotment

In line with Startup India, a five-fold hike was made by the government in the union Budget 2016-2017 for seed funding to Startups in the next fiscal. The government also announced opening of 25 new technology-business incubators to provide relevant training. Incubators are a major source of funding to these new ventures. The government has also earmarked Rs-10crore for creating "World class" incubators. In a push to the government Startup India campaign a fund of funds for startups (FFS) at small industries Development Bank of India (SIDBI) for contribution to various Alternative Investment Fund (AIF), registered with SEBI which would extend funding support to startup, was established recently. The objective of this FFS worth Rs-10,000crore is to provide a stable and predictable source of funding for Startup enterprises and thereby facilitate large scale job creations. A amount of Rs-10,000crore could potentially be the nucleus for catalyzing Rs-60,000crore of equity investment and twice as much debt investment. Further provisions are expected to be made as grant assistance through gross budgetary support, to monitor and review performance in line with the Startup India Action plan.

Startup in India

India is buzzing with an entrepreneurial revolution with the launch of "Startup India". According to recent Assocham report, India is placed at no-3 spot in terms of number of Startup just after USA and Britain. In year 2015, 400 new Startup successfully Started its operation with the government corpus of Rs-32000crore close to 4400 technology Startups exist in India

and the number is expected to reach 12000+ by 2020. India is also touted to be world's youngest Startup nation with 72% founders less than 35 year. To give momentum to this revolution a Startup India Hub was operationalised on 1st April 2016 to resolve queries and to provide handholding support to Startup. The hub has been able to sort out more than 13,500 queries received from Startups through telephone, email and social networking sites. Since, Startups are the new engines of economy growth, the finance act, 2016 has made provision for Startups to get income tax exemption for 3 year in a block of 5 years. To avail this benefit, Startup should operationnalise between 1st April 2016 and 31st March2019. Tax exemption on investment above fair market value has also been introduced for investment made in Startups. To avail these benefits one most gets a certificate of eligibility from the inter-ministerial Board of DIPP. Funding is one of the most important precursors for any Startup, that's why a fund of funds of 10,000crore has been disbursed to give fillip to Startup growth. This fund will act as an enabler to attract private capital in the form of equity, quasi- equity, soft loan and other risk capital for Startups. Startups need to work on ideas and not to worry about compliances under various acts. Startups working in areas i.e."White Category" industries are exempted from all the applicable compliances under 3 environmental lows, i.e. the water (prevention & control of population) act, 1974; the water (prevention & control of pollution) cess (Amendment) act, 2003 and the Air (prevention & control of pollution) act 1981.There are around 250 incubators which have been recognized by government of India to provide recommendation to Startups. In order to augment the existing list of incubators, a module to recognize incubators has been launched. This shall enable incubators to obtain recognition from government of India, allowing them to issue recommendation letters to startups. 7 proposals for research parks, 16 proposals for TBIs and 13 proposals for Startup centers have been recommended by the National Expert Advisory Committee (NEAC) formed by MHRD. These proposals shall be implemented

in the current financial year. DIPP has written to top 50 companies requesting them to support the initiative under CSR activities.   Letter of recommendation by incubators to ascertain the innovativeness of a product, Service or process is an important requirement for Startup. To obtain recognition a cap has been put on maximum fee charged by incubators in response of complaints for providing letter of recommendation. A panel of facilitators is constituted to provide assistance and support in filling application for IPR (Intellectual Property Right), where DIPP would Bear the facilitation cost up to 80% rebate on fee and free of cost facilitation will be provided to those who are registered under DIPP. DIPP has requested state to setup Startup Hub as well as incubators to help Startups during various stages of their development. I hope to see Indian entrepreneurs taking cue from outer world to come forward and show cases the potential of their ideas. India becomes a nation of job creator and not job seekers, people of India hold the possibility to make dream a truth.

Opportunities:

a. This will create new job opportunities for Indian youth.
b. Provision like self – certification to get exempted from 9 laws including labor & Environment, tax exemption for 3 year.
c. The new culture from job–seekers to job–creator will be developed.
d. It will be easy for new Startup to get loan from bank at cheaper interest.
e. It has created new opportunities, not only for entrepreneurs but also for companies to engage their money in some profitable areas like joint venture capitals, incubators etc.

Challenges:

a. To earn profit is one of the biggest challenges in front of "Startups". As they are providing goods and services at a cheaper rate than other place in the market.
b. To continue their business for a long time is the other major hurdle. As many incubators restrain from giving capitals for a long time and many players also emerge in the market, creating a competent atmosphere.
c. Since Startup are based primarily on IT and innovative ideas. Those who are not adept in understanding the new technologies find it difficult to survive in the market.
d. Although government has made provisions that no tax will be applied on new Startup for a period of initial 3 years but after that they will be asked to pay taxes according to the government. Provision in companies act, 2013.

Conclusion & suggestion

Startup is the most effective scheme for the development of Indian economy. This scheme will directly help people in opening their own successful entrepreneurship. Startup exhibitions with an aim to link the Start-ups and investors under one roof are also commonly visible from time to time. Such exhibitions should be help more in rural areas to facilities the grass root people. Such platforms act as strong bridges for both money seekers as well as investors. This initiative is the necessity to lead India in right direction. The most important point about this campaign is that it involves youth of the country. Youth are the energetic and highly skilled section of the society. So they are target for this campaign.   Every challenge that has been mentioned above will be sorted out, than we can hope for evolved culture of Startup in India. I hope that in doing so it will play a major role in development of India.

ESTIMATE THE VALIDITY OF SCREENING TEST FOR DETECTION OF B-THALASSEMIA TRAIT THROUGH NAKED EYE SINGLE TUBE RED CELL OSMOTIC FRAGILITY TEST AGAINST HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY METHOD

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Abstract

This manuscript is focused to establish the validity of Naked Eye Single Tube Red Cell Osmotic Fragility test (NESTROFT) against gold standard method i.e., High-Performance Liquid Chromatography (HPLC) method for detection of B-Thalassemia Trait. NESTROFT and HPLC METHOD were applied to blood sample of 84 patients of suspected of cases of B-Thalassemia and other haemoglobinopathies. Out of 84, Beta Thal Trait 13 cases (15.4%) , Delta Beta Thal Trait 9(10.7%) ,Thal Major 5(5.9%), HPFH 7(8.3), Sickle Homo 12 (14.2 %), Sickle Trait 10(11.9%) Sickle Thal Trait 7(8.3%) & IDA 21(25%) cases were detected by HPLC. The NESTROFT test was successful in detecting 12/13 subjects with B-Thalassemia trait. Sensitivity of the test was 92.31 % and specificity was 63.38 %. The test was positive in detecting other haemoglobinopathies like sickle cell disease also. The test proved to be simple, cheap easy to perform and adaptable for mass screening coming close to an ideal screening test for B-Thalassemia trait.

Keywords: B-Thalassemia trait, Naked eye single tube red cell osmotic fragility test (NESTROFT), HPLC.

Introduction

Thalassemia is the commonest inherited haemogiobinopathy[1]. Preval ence of Thal assemia trait varies from 1.0-14.9% in various regions of India'. In our country, it is estimated that there would be about 25 million carrier and about 8000 children would be born each year inheriting a major haemoglobin disorder. The incidence of these genetic disorder can be reduced markedly by genetic counselling and prenatal diagnosis[3]. Determination of Red cell indices, Haemoglobin Chromatogram and HbA_2 level can be used for identification of B-Thalassemia heterozygotes[4]. However, these techniques are time consuming and expensive for population screening. The most effective and feasible approach for a vast country like ours is preventive genetics and major efforts need to be directed for applying simple and unexpensive screening test. NESTROFT is suitable test for screening the suspected cases of B- Thalassemia trait as it is easy to perform, inexpensive and does not require any sophisticated equipments.

Materials and methods

Since the concentration of 0.36% buffered saline was more efficient in detecting heterozygous beta-thalassaemia patients than the four other saline strengths (i.e. 0.35%, 0.37%, 0.38% and 0.39%). [22]

In this study buffered saline (i.e. 0.36%) has been used by various workers to study its effect on the osmotic fragility of red cells and working out the

reliability of this concentration in detecting the beta-thalassaemia trait.

Total of 84 **patients referred from the OPD, Indoor & Emergency to the Department of Laboratory Medicine(** deals with investigation of genetic disease of referred cases) were selected for screening. The criteria for selection of cases were:

- Those suspected for Thalassemia & Hemolytic disorders.
- In High risk community.
- Parents and siblings of known Thalassemic major patients.

NESTROFT, complete haemogram and HbA2 estimation. HbA2 > 3.5% was treated as the gold standard for the diagnosis of the Thalassaemia trait. The test was also studied in patients of sickle cell disease and other forms of Hemoglobinopathies.

NESTROFT was carried out in these patients as advocated by Mehta et a1[4] and Ka ttamis et al'.

Nestroft test

Principle: Limit of hypotonicity which red cells can withstand. There is a decreased in osmotic fragility in red cells in Beta Thalassemia.

Preparation & Procedures:

a. 10 % stock solution of buffered saline

90 g	NaCl
13.65 g	Na_2Po_4
2.4 g	$NaH_2Po_4\ 2H_2O$
Add	10000 ml Distilled water

b. 1% buffered saline is prepared by 1: 10 dilution with Distilled water

c. Five buffered saline solutions with

Concentration	1% buffered saline	Distilled water
0.35 %	35 ml	65 ml
0.36%	36 ml	64 ml
0.37 %	37 ml	63 ml
0.38 %	38 ml	62 ml
0.39 %	39 ml	61 ml

d. 2 ml of each five concentration of buffered saline in five different test tube add 2 ml of distilled water in the 6th test tube.

e. Add 20 ul of EDTA blood in each test tube.

f. Shake well the tubes and left at room temp. for ½ an hour.

g. Shake well all tubes and held against the white paper on which a thin black line is drawn already.

- 2ml of 0.36 % concentration of buffered saline in a test tube + Add 20 ul of EDTA blood.
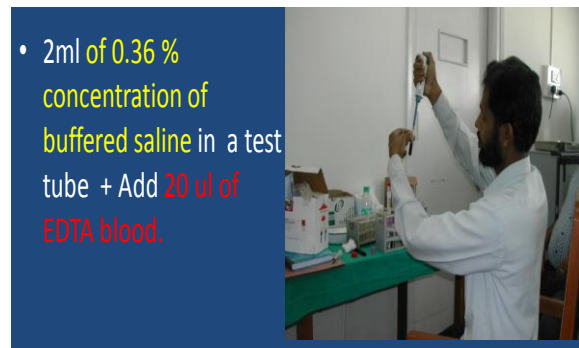
h. If the line is clearly visible through the content of tubes with Distilled Water tube (Control) and similarly visible through the content of tubes with buffered saline, then the test is considered "NEGATIVE".

i. If the line is not visible then the test is considered "POSITIVE".

j. In the case of a blurred line test is considered " DOUBTFUL".

Shake well the tubes (and wait for 10 minutes) and held against the white paper on which a thin black line is drawn already.

If the line is not visible then the test is considered = Positive.
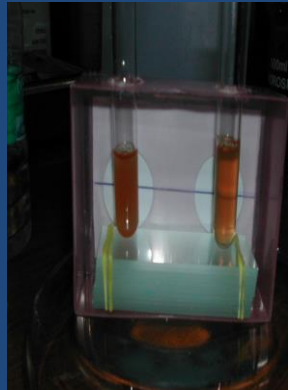
If the line is clearly visible through the content of test is considered = Negative.
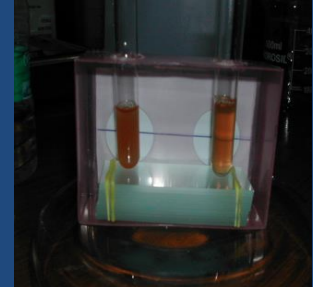
Interpretation of doubtful case is taken positive/ negative.

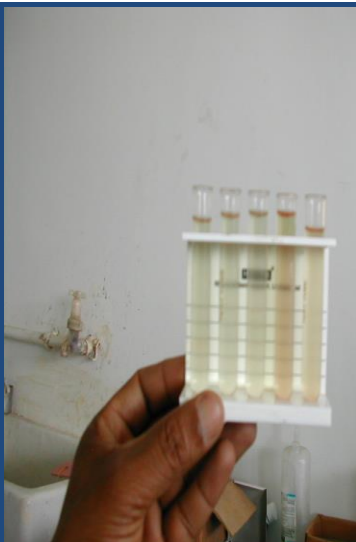k. In case of normal sample if the test is negative – called TRUE NEGATIVE (TN)

If POSITIVE – called - FALSE POSTIVE (FP)

l. In the case of carriers if the test is POSITIVE it is called TRUE POSITIVE (TP)

If NEGATIVE is called FALSE NEGATIVE (FN)

All the subjects were also screened by mainly HPLC . A few cases were screened by Haemato analyzers whenever required in the laboratory.The subjects were divided into following categories after taking into consideration HPLC (a gold standard procedure), Haematological Nestroft test parameters.

OBSERVATIONS

Total cases screened = 84

HPLC & Nestroft test result in cases of different types Hemoglobinopathies & others

	1	2	3	4	5	6	7	8	Total
Findings of cases	Beta Thal Trait	Delta Beta Thal Trait	Thal Major	HPFH	Sickle Homo	Sickle cell Trait	Sickle Thal Trait	IDA	
by using HPLC	13	9	5	7	12	10	7	21	84
by using Nestroft	12	3	0	0	8	2	1	0	26

Nestroft test result in the following diseases

Disease	Positive	Doubtful	Negative
Beta Thal Trait	12	1	0
Delta Beta Thal Trait	3	4	2
Thal Major	0	1	4
HPFH	0	1	6
Sickle Homo	8	1	3
Sickle cell Trait	2	5	3
Sickle Thal Trait	1	1	5
IDA	0	13	8
Total	26	27	31

Note: Doubtful results were assumed as negative Among the 84 patients with different types of Hemoglobinopathies and Iron deficiency Anemia on HPLC, NESTROFT was positive for 26, 'doubtful' for 27 and negative for 31 . Of the 21 patients with other haemoglobin disorders (IDA), None were positive on NESTROFT and 13 were 'doubtful' and negative for 8.

To differentiate Beta Thalassemia from Iron Deficiency Anemia followings points were considered:

When there is red cell picture of microcytic hypochromic anemia
Discriminant functions in distinguishing Beta Thalassemia Trait and Iron Deficiency Anemia

Points	BTT	IDA
Morphology	Microcytic hypochromic may be with inclusion bodies	Microcytic hypochromic may be with ring cells
RDWSD	<46 fl (N 38 to 58)	>46
RDW CV	< 16 % (N 11 to 19)	>16
Hb	Minimal decrease(around 5 million)	May be markedly decrease(<5 million)
Nestroft test	Positive	Negative
Hb A2	>3.5 % up to (5 – 9 %)	
HbF	>2% up to (5 to 15%)	
Hepatomegaly	May be present	May not be present
Spleenomegaly	May be present	May not be present

Differentiating Beta Thalassemia Trait With Iron Def. Anemia
- With the help of Hemato analyzer & microscopy

Of the 13 patients with Beta Thalassemia Trait on HPLC , 12 were positive on NESTROFT and 01 was 'doubtful'.

The number of True Positive (TP), True Negative (TN), False Positive (FP) and False Negative (FN) were determined.

Sensitivity, specificity and predictive values were calculated as follows:

a. Sensitivity = TP x 100/TP+FN = 93.3 %
b. Specificity = TN x 100/TN+FP = 63.38 %
c. Predictive value of a positive test TP x 100/ TP+FP 4) = 31.58%

Predictive value of a Negative test = TP x 100/ TN+FN= 97.83%

Positive   NESTROFT   blood   samples   are subsequently confirmed for B Thalassemia Trait by HPLC = 13

Table-1: Results of Nestroft especially in B-Thalassemia trait

NESTROFT	Total Subject n= 84	B-Thalassemia trait n = 13
Positive	38	12
Negative	46	1

Table-2

Comparison between HPLC & Nestroft test in case of **Beta Thal Trait**

		HPLC		
		Positive	Negative	Total
Nestroft	Positive	12	26	38
	Negative	1	45	46
	Total	13	71	84

Findings

a. A total 84 patients were screened, NESTROFT was positive in 12(13) cases of B-Thalassemia trait (True Positive, TP). There were no false positive. It was negative in 1(13) cases. (False negative, FN) and 71 cases did not have ii-Thalassemia trait (True Negative, TN). Sensitivity of NESTROFT was 93.3 % and specificity was 63.38 %. Positive predictive   value   was   31.58%   and negative predictive values was 97.83 %.
b. **NESTROFT** was also positive in 2/10 cases of sickle cell trait and 8/12 cases of sickle Homo, 1/7 cases of Sickle Thal Trait and However, none of the Thal Major Subjects 0/5 cases showed positive NESTROFT test.

DISCUSSION

- The purpose of this study was to evaluate the effectiveness of NESTROFT as a screening test for Beta Thalassemia trait.
- Although screening of the thalassaemia trait using 0.36% buffered saline was successful in detecting 97.7% of subjects with this trait, but non was also positive in 25.0 % of subjects with iron-deficiency anaemia.
- In our study NESTROFT was both sensitive (93.3) and specific (63.38%) for identification of B-Thalassemia trait.

- The result is comparable with the studies of Kattamis et al,(9) Mehta et al,(6) Gorakshakar et al, [14] Raghavan et al, [15] Thomas et al, [17] Maheshwari et al [18] and Sirichotiyakul et al,[19] who reported values of 98.3%, 97.0%, 99%–100%, 98.3%, 96.5%, 99.0% and 99.5%, respectively.

- The specificity in the present study was 63.38 %, which is comparable to results obtained by Mehta et al,[13] Gorakshakar et al [14] and Raghavan et al.[15] The negative predictive value of the test in carriers during the present study was 97.83 %.

- Kattamis[5], Raghawan[6], Gorashker[7], Thomas[3] and Mehta[4] reported the sensitivity and specificity of NESTROFT in the range of 95 to 98.4% and 66.6 to 91% respectively.

- None of the The Thalassemia Major in **our study** showed positive NESTROFT test. Positive predictive value of NESTROFT in our study was 31.58% and Negative predictive value was 97.83%.

- Kattamis[5] in his study reported Positive Predictive Value of 91.3% and Negative Predictive Value of 98.3% for NESTROFT.Though NESTROFT was positive in '40% cases of sickle cell trait, 23.63% cases of sickle cell disease and 100% cases of Thalassemia major, their detection is of major benefit as each of these conditions has its own health implications.

- In the study by Raghavan K[6], NESTROFT was positive in 29.46% and negative in 70.6% cases of sickle cell disease. Similar study by Thomas et a19 reported that NESTROFT was postive in 56.26% and negative in 43.75% cases of sickle cell disease.

- Kattamis[5] et al also found the test useful in picking up patients of sickle cell disease. When used as a population screening, this will prove to be beneficial aspect of the test.

- Colah[8] reported that NESTROFT does not miss 'out any Beta -Thalassemia heterozygous and helps to pick up cases of sickle cell disease also.

- NESTROFT with 0.36% buffered saline still showed a very high negative predictive value. The present data therefore confirms that a negative NESTROFT is very useful in ruling out beta-thalassaemia.

- NESTROFT has thus emerged as an inexpensive, most sensitive and specific test of population screening for the beta-thalassaemia trait, and is considered suitable for large scale use in developing countries like India, which has limited financial and technical resources.

Conclusions

a. We conclude that, NESTROFT is a suitable test for screening for beta-thalassaemia and the common haemoglobinopathies seen in India. It is easy to perform, simple, inexpensive and does not require sophisticated equipment. Subjects who are NESTROFT 'positive' or 'doubtful' deserve further investigation.

b. The NESTROFT test is very cheap, cost effective and easy to perform. The stock solution once made can be kept well in a stoppered bottle. At one time one can perform 40-50 tests in a hour. Thus, NESTROFT seems to be valuable as a screening test in our country with low socio-economic status.

c. A practical approach would be to perform NESTROFT in high risk community for detection of heterozygotes of B-Thalassernia and positive cases would then be examined for raised HPLC . When one considers the repeated yearly expenses of bringing up a child with Beta -Thalassemia, preventing Thalassemia births by diagnosis and counseling (Beta -Thalassemia trait cases becomes the more feasible and practical approach.

Acknowledgement

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