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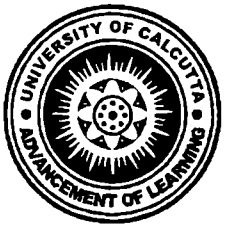

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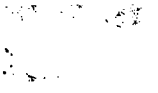

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Editorial

The UGC approved refereed journal, 'Business Studies', explores thought-provoking articles in the wide domain of accounting, finance, economics, management, technological and socio-cultural aspects of commerce and business. In line with its legacy, this 37th volume of *Business Studies* unfolds before the readers diverse issues of technology, quality, industry and firm performance, management of assets and supply chain, public perception towards hospital services, and women empowerment in the context of India, West Bengal and city of Kolkata in eleven insightful papers. The papers have been arranged in order of the perceived link in their themes so as to retain the universal appeal of the research volume. The first paper gives an overview of the progress made so far in implementing the 'Digital India' programme launched by the Indian Government in 2015 to transform India into a digitally empowered and knowledge economy, along with its future prospects and challenges ahead. Again from a completely different perspective, the second paper revisits the quality philosophy of notable quality management expert, William Edwards Deming, to identify the role and responsibility of the management in achieving quality control in operating processes of the organization. In an attempt to examine the quality of output of a specific industry, the third paper evaluates the recent trends in jute agriculture, industry and trade in India and other Asian countries so as to suggest some policy changes that may be necessary to develop a sustainable jute sector in India. In an empirical study on BSE 200 Index companies, the fourth paper analyses the impact of ownership structure of Indian companies comprising Indian and foreign promoters, and non-promoter institutions and non-institutions on measures of firm performance like return on assets, return on equity etc. In another empirical study, the fifth paper examines the factors influencing internal financing in Indian corporate sector. The conceptual aspects of one of the most recent innovations in Indian financial sector, Real Estate Investment Trusts, its performance worldwide and its implications for real estate sector in India are dealt with in sixth paper. At the micro level, the seventh paper evaluates the patients' perception towards various dimensions of service of some selected public hospitals in Kolkata through a primary survey. In another survey, the eighth paper examines the sustainable supply chain management practices among large format retail companies in Kolkata. Through a conceptual discussion, the ninth paper highlights the management of intangible assets like knowledge, human intellectual resources, patents, copyrights, computer software, e-journal etc. in state-aided Universities of West Bengal. The tenth paper seeks an answer as to how Micro, Small and Medium Enterprises' institutional mechanism can be holistically integrated with the Higher Educational Institutions to promote entrepreneurship among the youth of West Bengal. Finally, the eleventh paper touches

upon a socio-economic aspect of women empowerment by evaluating the role of working, as well as non-working wives in family purchase and financial decision making.

We sincerely hope that the articles published in this volume of the Departmental journal will provide food for thought to our valued readers and shall help them to pursue their research interests in future. We would also encourage you to contribute your research work to this journal in the field of accounting, finance, economics and management.

Tanupa Chakraborty
Associate Editor

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Digital India: An Overview on its Progress and Prospect

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Abstract: Even though India is a global IT powerhouse, the usage of IT in governance and various sectors of the economy are still comparatively low. The government on 1st July, 2015 embarks on an ambitious 'Digital India' programme to transform India into a digitally empowered society and knowledge economy. The version of Digital India programme aims at inclusive growth in areas of electronic services, products, manufacturing and job opportunities etc. The programme is scheduled to be completed in phases by 2019. There are challenges in implementing Digital India programme, which indicate that it has a long way to go on its road to reality in its truest sense. Still, within a very short time of less than two years there has been an exemplary progress towards Digital India and very soon it is expected to get its place among the countries ranked top in digital revolution. For this, what is needed is an attitudinal change on the part of all the citizens and a well-thought-out comprehensive approach to the digital goal.

Key-words: Digital India, digitization, e-governance, e-kranti, DISHA.

1. Introduction

The Industrial Revolution that started during 18th Century has already crossed over its two stages – mechanical and electronic. Now, the world is at the third generation Industrial Revolution, i.e. digital revolution, and very soon it will experience the fourth one which will bring together digital, biological and physical technologies in a new and powerful combination. India, however, is still at a very nascent stage in respect of even the third generation of digital technologies, and as such in no time it should ensure mass production and widespread use of digital logic circuits and technologies if it is to compete with the first developing countries of the globe. The Network Readiness Index (NRI) of the World Economic Forum is the key indicator of digital progress of different countries. According to NRI, 2016 that studied the network readiness of 139 countries, 10 best placed countries are as follows :

Country	Rank
Singapore	1
Finland	2
Sweden	3

Norway	4
USA	5
Netherlands	6
Switzerland	7
UK	8
Luxembourg	9
Japan	10

India's position there, is as low as 91, which is worse than those of even Sri Lanka, Brazil and Bhutan, their ranks respectively being 63, 72 and 87. In view of the environment for network readiness of different countries, India's position falls further (99), sub-indices of which are – 110 for innovation, 114 for infrastructure, 110 for skills and 8 for affordability. Affordability Index being surprisingly good, we may easily deduce that our country has the capacity/potential to afford the building up of network environment, but perhaps we are attitudinally unprepared to do it. India's network usage index is 103, that means it is worse than that of network environment. The usage in case of government, however, is good, the relevant index being 59. In case of business the usage is moderate, the index being 75; but in case of individuals it is the worst, i.e., 120.

What appears from the above is – India has now no time to waste. With its all capacity it should embark on digitization in every sphere of economic, social and governmental activities, otherwise it will lag far behind the other fast developing countries. From 1990s, we are thriving towards digitization, but the progress till is too low. In a paradigm shift, on 1st July, 2015 an ambitious comprehensive programme, "Digital India", was launched to transform India into a digitally empowered country, and to our utter surprise, a digital revolution has started since then in our country and a noticeable progress has been achieved towards digitization within a very short time. In this backdrop, an overview of the programme is not only timely but also essential to examine the prospect of the programme, as, on it depends the sustainability or otherwise of our development. This paper is a humble attempt to that end.

2. Literature Review

As the subject of the study is still in infancy, available literature on the topic is quite scanty. The study conducted by Sana (2006) on e-Security Management has some relevance to the issue, particularly in the context of challenges faced by Digital India campaign, though his study was concerned mainly with electronics age, not with digital age. Majumdar (2006) has shown how e-Governance movement started long before the launching of Digital India programme. Other studies available are also related primarily with the e-Governance works of the Indian Government. However,

only the study of Sharma, Sharma & Sharma (2015) is completely on Digital India where the authors have given a thorough picture of the policies adopted so far under Digital India initiative and of their possible impact on Indian economy. So, the present study may be an effective addition to bridge the gap to an extent.

3. Digital India: Its Mission

Right from the day of assuming power, Digital India and Make in India have been the two big USPs of the Prime Minister, Shri. Narendra Modi. Launching of Digital India programme in 2015 is the ambitious implementation of that USP. It comprises various initiatives under an umbrella programme each targeted to prepare India for becoming a knowledge economy and for bringing good governance to citizens through synchronised and co-ordinated engagement of the entire government. If to state specifically, the missions of Digital India are to –

i) Transform government to make it more transparent and efficient,

ii) Transform the lives of citizens, especially of those who are at the bottom of development pyramid, and

iii) Make Indian economy more effective as well as competitive.

All these objectives aim at making a reality of government's promise for "minimum government and maximum governance". Departments of Electronic and Information Technology (DeitY) of Central Government of India is the prime mover of this mission. A Monitoring Committee consisting of various Central Ministries and State Governments has also been formed with the Prime Minister in its chair. It has been decided that by the year 2019 the programme will be completed in phases. A huge amount of Rs. 113000 crore has been budgeted for the purpose. Broadly three areas the programme initially emphasizes. They are –

i) Digital infrastructure as a utility to every citizen,

ii) Governance and services on demand, and

iii) Digital empowerment.

Building digital infrastructure the programme will ensure gradually the cashless, paperless, non-repudiable and traceable transactions. Transferring the benefits directly to target beneficiaries it will try to reduce corruption and bribery. To make the country digitally empowered it aims at manufacturing the electronic and digital goods in the country, instead of importing them from abroad. It is expected that huge job opportunities can be created thereby which ultimately will lead the country towards inclusive growth and make it an empowered society.

4. Digital India Policies: Nine Pillars

Mission being focussed, the Digital India initiative has adopted nine specific policies as its means to achieve the goal. The policies as such, that are known as 'nine pillars' of Digital India, are as follows.

1. Broadband Highways
2. Universal Access to Mobile Connectivity
3. Public Internet Access Programme
4. e-Governance
5. e-Kranti Electronic Delivery of Services
6. Information for All
7. Electronics Manufacturing
8. IT for Jobs
9. Early Harvest Programme

The main thrust of these nine pillars is to build holistic capabilities across Information and Communication Technology infrastructure, software delivery platforms, enhance IT skill and create job opportunities. They also focus on making India a preferred destination for electronic manufacturing. The Union Communication and IT Minister is of opinion that the aforesaid initiative will create one trillion dollar business opportunities across IT and IT enabled services. The initiatives taken so far under different pillars are discussed below in brief.

Broadband Highways

In order to deliver services and improve the way citizens and authorities transact with each other, it is imperative to have ubiquitous connectivity. This programme therefore has aimed at high-speed internet connectivity that will cover 2,50,000 gram panchayats by December, 2016. The Government of India has undertaken an initiative namely Bharat Net, a high speed digital highway to connect all 2.5 lakh Gram Panchayats of the country. This would be the world's largest rural broadband connectivity project using optical fibre. An investment of Rs. 32000 crore have been budgeted for the purpose.

Universal Access to Mobile Connectivity

The goal here is to provide high level penetration of mobile phones, accompanied by the availability of cheaper smart phones, as, Mobiles can be leveraged as instruments of digital identity by linking them with Aadhaar platform. Universal Access to Mobile connectivity will cover 42300 villages by Financial Year 2018. Investment of Rs. 16000 crore has been made for the purpose.

Public Internet Access Programme

Under Public Internet Access Programme, 1,50,000 Post Offices have been targeted to become multi-service centres by 2016. 2,50,000 Gram Panchayats are to have service delivery centres by March, 2017. Rs. 4,750 crore has been sanctioned for the purpose.

E-Governance: Reforming Government through Technology

The major components under e-Governance are as follows –

a) Government Process Re-engineering using IT to simplify and make the government processes more efficient. This is critical to make the delivery of government services more effective across various government domains.

b) Form simplification and field reduction – forms have been made simple and user friendly to collect only necessary and minimum information.

c) Online applications and tracking.

d) Online repositories for school certificates, identity documents etc. This will minimise the usage or submission of physical documents and will enable sharing of e-documents across agencies.

e) Integration of services with Aadhar platforms to facilitate integrated and inter operable service delivery to citizens and businesses.

f) Electronic Data Bases to allow visibility of workflow inside government departments to the citizens.

g) Workflow automation.

h) Public Grievance Redressal using IT – this will be used to identify, respond and resolve persistent problems faced by the general public.

e-Kranti: Electronic Delivery of Services

The vision of e-Kranti is "Transforming e-governance for transforming governance", and its mission is "to ensure government-wide transformation by delivering government services electronically to the citizens through multiple integrated modes at affordable costs, ensuring transparency and reliability of such services". With this vision and mission the thrust areas of e-Kranti are as follows.

1. Technology for education(e-Education)
2. Technology for health(e-Healthcare)
3. Technology for planning through National GIS(Geo-Spatial Information System)
4. Technology for farmers to provide them with real time information about price of products and inputs, loan and relief payments

5. Technology for security against disasters like flood, cyclone etc so that precautionary measures are taken in time and the loss of lives and properties is minimised.
6. Technology for financial inclusion that will ensure online payments and direct transfer of benefits through the Pay Gov platform and the Jan Dhan Yojana.
7. Technology for justice that includes e-Courts, e-Police, e-Jails and e-Prosecution.
8. Technology for cyber security to ensure safe and secure cyber space within the country.

Information for all

Citizen empowerment is one of the key components of Digital India. Under this initiative online hosting of information and documents will be made for open access to citizens. Effective use of crowd sourcing will be made through MyGov.in, a platform designed for citizen engagement in governance through a "Discuss, Do and Disseminate" approach. This platform will provide the aforesaid features to citizens on mobile phone.

Electronics Manufacturing

Net Zero import by 2020 is the main target of electronics manufacturing in the country. Focus will be on manufacturing the electronic goods like FABS, Fab-less design, set top boxes, VSATs, Mobiles, consumer and medical electronics, smart cards, micro-ATMs etc. This will strengthen foreign exchange reserve on the one hand, and will create job opportunities on the other.

IT for Jobs

IT for jobs will focus on providing training to the youth in the skills required for availing jobs in IT/ ITeS sectors. It will cover as many as one crore students of small towns and villages, mainly of north-east region of the country. BPOs will be set up and Service Delivery Agents will be trained to run visible businesses in delivering IT services.

Early Harvest Programme

This programme basically consists of those projects which are to be completed within short timeline. This programme includes an IT platform for government messages and greetings among elected representatives and government employees; bio-metric attendance system; Wi-Fi in all universities, National Knowledge Network; Wi-Fi hotspots, e-books for schools, SMS-based weather information, disaster alerts and national portal for lost and found children.

5. Digital India: Milestones Achieved

Digital India is based on mainly the development of digital ecosystem in terms of apps and app-based government services and access of these services to the citizens across the country. Notable apps that have already started functioning and other spectacular achievements of Digital India initiative are mentioned below.

- **Digital Locker System** has been installed to help citizen digitally store their important documents like PAN, passport, degree certificates etc and share them across agencies. It has authenticity services provided by Aadhar.
- **MyGov.in** has been implemented as a platform for citizen engagement in governance through a "Discuss, Do and Disseminate" approach.
- **e-Sign Framework** has been built up to enable citizens to sign online documents using Aadhar documentation. Bio-metric attendance system has also been implemented along with this initiative.
- **Online Registration System** has been introduced for registration of patients at hospitals, payment of fees, online diagnostic reports, enquiring availability of blood online etc.
- **National Scholarship Portal** is a one step solution for end to end scholarship process right from submission of application by students to disbursal of scholarships to the end beneficiaries.
- **Digitized India Platform (DIP)** is the initiative for large scale digitization of records in the country that will facilitate efficient delivery of services to the citizens.
- **Bharat Net** has been initiated to connect all 2.5 lakh gram panchayats of the country with a digital highway. National Knowledge Network and National Optic Fibre Network were authorized to complete the programme by 2016. Upto date 112871 kms of optical fibre cable have been laid to provide high speed connectivity across the country.
- **BSNL** has introduced Next Generation Network (NGN) to replace 30 year old exchanges so that all types' communication services can be managed well. It has also undertaken large scale deployment of Wi-Fi hotspots throughout the country.
- **e-Sampark** is the mechanism that is developed to contact citizens electronically via e-mails, SMS and outbound dialling.
- **Common Service Centres:** The government has decided to create 28000 seats of BPOs in various States and set up at least one Common Service Centre (CSC) in each gram panchayat. In the mean time 1.66 lakh CSCs have already been set up to enable penetration of digital services in the hinterlands.
- **Digital Shaksharata Abhiyan (DISHA)** is an initiative that aims at making at least one person in every Indian household digitally literate. Over 98 lakh citizens have been enrolled in the mean time under the programme.
- **Meri Sadak** is a versatile mobile application that empowers citizens to give the critical feedback about the nature and quality of work done under Pradhan Mantri Sadak Yojana to nodal departments of State/Central Governments.

- **India Fights Dengue** is another mobile app developed by the Ministry of health and Family Welfare to make people aware of the symptoms of dengue and its remedies. This app has been developed keeping in mind the rising number of deaths in India due to dengue.
- **Rapid Assessment System (RAS)** has been implemented to capture citizens' feedback related to e-governance services and to encourage citizen engagement in government activities. This is expected to significantly enhance the system of assessment in government domain.
- **A Trinity of Jan Dhan Yojana, Aadhar and Mobile (JAM)** has been built up for directly transferring endless benefits to the citizens. As a landmark achievement, MGNREGA wages worth Rs. 13000 crore have been disbursed directly in the mean time.
- **Digital Rath Outreach Campaign** is a digital awareness and literacy campaign that aims at narrowing digital divide by making the citizens of remote locations aware about various initiatives under Digital India programme. 66 mobile display vans along with a team of trained professionals will travel across the country to educate people. The target is to cover 657 districts of the country and to reach out to more than 10 lakh citizens.
- **e-mail in regional languages** has been urged by the Government of India, as, out of 10% English speaking Indians only 2% reside in rural areas and without connecting them Digital India campaign can never be successful. The e-mail provider giants have shown positive sign to this end. Data Xgen Technologies, an Indian company, has launched world's first free linguistic e-mail address under the name "Datamail" which allows creating e-mail Ids initially in eight Indian and three foreign languages. It has planned to cover twenty-two languages over time and this is no doubt an exclusive achievement towards Digital India.
- **Digital India Awards** have been declared by the National Portal of India to encourage various stakeholders in making India a digital super power. Initially, awards have been proposed for best Mobile App, best performing Local Body and Web Ratna District. The Panchkula district of Haryana was given Web Ratna District Award for the year 2015.
- **Private Players' Involvement** in the programme is possibly the biggest achievement on the part of the government and the prospect of Digital India has undoubtedly been brighter due to this. Leaders from Silicon Valley expressed their support for Digital India. The CEO of Facebook changed its profile picture in support of Digital India and promised to work on Wi-Fi hotspots in rural India. Microsoft agreed to make India its cloud hub and to provide broadband connectivity in the villages of India. Qualcomm announced an investment of US 150 million dollars in Indian start-ups. Oracle decided to invest in 20 States in

developing smart cities. Google committed to provide broadband connectivity in 500 railway stations in India. Along with global giants, Indian corporate has also come forward in the making of Digital India. RIL would roll out broadband network across the country. Birla Group will invest for electronics manufacturing and developing smart cities. Bharat Airtel will enrich infrastructure. Vedanta Resource and Sterlite Technologies will invest for LED manufacturing. If this trend continues, dream of Digital India will soon be a reality.

6. Digital India: Challenges Ahead

So, the progress towards Digital India is no doubt praiseworthy and its prospect is also positive. But the challenges that have already started surfacing are also truly alarming. If they are not addressed effectively, the train of digital India may be derailed. The basic challenge is to provide for the huge cost that may again be escalated if the time for completion is overrun. Other specific challenges that need immediate attention of concerned agencies are stated below.

- **Bharat Net is not working well** for many a reason. The completion almost at every phase is delayed escalating the cost. It is also noticed that most of the National Optical Fibre Points are non-functional, even at the pilot stage. The functions of other pillars of the programme are also affected thereby, since their success depends on the infrastructure that is supposed to be provided by Bharat Net.
- **Spectrum availability** for telecom services in India is quite low. While globally the number of mobile operators per service area is limited to three to four, in India it is between seven to thirteen. Accordingly, the typical spectrum holding of an Indian operator is less than a fourth of that in other countries. If this problem is not addressed immediately, the ambitious Digital India Programme may be derailed.
- **Health Hazards** emerging out of digitization are also very alarming. A person should not use cell phones for more than 18 to 24 minutes per day. WHO's report shows that use of cell phone can increase the risk of cancer. People living within 300 meter radius of mobile tower are in the high radiation zone and are prone to different types of illness.
- **e-Waste** is adding salt to the injury of the health hazards. The extent of digitization in India is not yet so high. Even then, the volume of e-waste in our country has already reached an unmanageable level. A report states that we are accumulating e-waste of as much as 18 lakh tons per year in our country.
- **Loss of jobs** is a significant flop side of digitization. Service of human resources in most of the service sectors including financial sector will no longer be required due to digitization-led automation. How far the new jobs supposed to be created only in IT sector will be able to compensate the loss is doubtful. Notice must be given to this point in no time, otherwise making of Digital India will be of no use.

- **Cyber crime** is possibly the biggest challenge to Digital India. According to national Critical Information Infrastructure Protection Centre, the fiscal hacking on internet in India during 2011-16 has increased by 400%, out of which 45% alone is on smart phone. According to National Crime Records Bureau, the number of hacking in the year 2015 was 11592, which was 26 times more than that in 2005. The cyber attack that took place world-wide in the Month of May, 2017 has shown vividly how everything may be a deadlock in a fraction of moment and how one's confidential information can be known by others if effective firewall for protection of cyber space is not built up.
- **System failure** has been a regular feature now causing endless problems to the users. Call drops, server down, slow internet, link failure, ATM out of order are just a few examples thereof. If disadvantages in this way outweigh advantages, the digitization movement can never be a smooth flow.
- **Resistance to change** is the last, but the most powerful challenge to digitization. Common people of India and even the policy makers are still hesitant, if not reluctant, to be cashless. The way the 'high tech' is replacing the 'human touch' from customers' service, is also making the customers disappointed. Recent experience of demonetisation has pushed us to an extent towards digitization. But in spirit we prefer some hard cash in pocket, not the plastic cards; we need a helpful and smiling face at the counter, not the machine.

7. Concluding Remarks

To move towards digitization is no longer a matter of choice, rather it is a necessity. Our survival will be at stake if we cannot compete with global super powers in this respect. But digitization is never our ends; it is rather the means towards all-embracing development of our country. So, the question is how far it is capable of adding value for the general public. As per a World Bank report, for every 10 percentage points increase in high speed internet connection, there is an increase in economic growth of 1.3 percentage points. But what is true for a particular country may not be so for other country. The governments must adjust solutions to the specific political and social context of their nations. For the most part, the technological revolution in India has benefited only the privileged sections of Indians, enhancing always the rich-poor divide. So, a fundamental attitudinal and institutional change is now the key issue. If we can do something positive to this end and combat the challenges in desired degree, one IT (Indian Talent), being coupled with other IT (Information Technology), will surely bring for us the better and brighter third IT, i.e., India Tomorrow.

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Revisiting the Quality Philosophy of William Edwards Deming

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Abstract: In the present scenario where organisations have to be not only quality conscious but constantl. evolve and adapt to the changes, internal and external environment, the role of the top management become critical for organisation's success and at times for its survival. According to Deming, in order to bring proces into statistical control and hence make it stable and predictable, the special causes of variation (estimated t. be around 15% of all causes) should be eliminated. Achieving control is usually within the capability of th process operator, and hence within the responsibility of the workforce. This leaves the managemer accountable for at least 85% of the problems, which can be dealt with only if the management changes th system appropriately. Deming opined, when a worker gets his output into statistical control, he can do n more. Deming did not consider it as sufficient merely to solve problems and called for a major transformatio in the management practices. In such testing times this paper tries to revisit the quality philosophy advocate by, notable quality management expert, Deming.

Key-words: PDCA cycle, self-sustaining, long-term constancy.

1. Introduction

William Edwards Deming was born in Sioux City, Iowa, in October 1900. After obtaining a bachelor's degree in physics at the University of Wyoming, he gained his Ph.D. in mathematical physics at Yale in 1928. He worked for eleven years, until 1939, at the US Department of Agriculture as a mathematical physicist. This eleven year period coincided with one of great development in th theories and practices of statistical science. While Deming was at the Department of Agriculture one of his colleagues introduced him to Walter A. Shewhart, a statistician at Bell Telephone Laboratories in New York. For several years, Deming travelled regularly to New York to study with Shewhart. Shewhart's theories of quality control would become the basis of his own work. Deming's interest in statistics is not surprising, and this interest helped him to appreciate fully th potential in the work of Shewhart, the originator of the concept of statistical quality control (SQC) Shewhart's original message was based on the idea of gaining control over the variability in the manufacturing processes. Deming extended this message to cover the systematic approach t

roblem solving in any sector, manufacturing or not. He immediately saw the value of the Shewhart ype of analysis, which mainly concerned with the understanding of the nature of variation and articularly its division into controlled and uncontrolled variability due, respectively, to unassignable or, as Deming calls them, common) causes and to assignable causes (Walton, 1993).

According to Deming, in order to bring process into statistical control and hence make it stable nd predictable, the special causes of variation (estimated to be around 15% of all causes) should e eliminated. Achieving control is usually within the capability of the process operator, and hence ithin the responsibility of the workforce. This leaves the management accountable for at least 5% of the problems, which can be dealt with only if the management changes the system ppropriately. Deming opined, when a worker gets his output into statistical control, he can do no nore. He views the control chart as the ideal tool for 'assigning the responsibilities' for quality improvement, basically according to the ratio 15 : 85 for workforce: management. In fact, during the 1980's, Deming revised this ration to 6 : 94 (Logothetis, 2001).

2. Objectives of the Study

In the present scenario where organisations have to be not only quality conscious but constantly volve and adapt to the changes, internal and external environment, the role of the top management becomes critical for organisation's success and at times for survival. In such testing times this paper tries to revisit the quality philosophy advocated by notable quality management expert, Deming. The paper makes a modest attempt to understand the Deming's fourteen principles of transformation, implementing the Deming's quality philosophy and the Deming cycle. The author tries to relate the relevance of Deming's teachings with the management practices of the new economic era. The paper tries to draw meaningful insights into the Deming's principles and major concerns of current management practices.

3. Research Methodology

This study is primarily theoretical in nature. The materials for this study have been obtained from relevant books, journals, magazines, websites and published work of various research scholars in the field of quality management.

4. Deming's Fourteen Principles for Transformation

Deming did not consider it as sufficient merely to solve problems and called for a major transformation in the management practices through the fourteen principles advocated by him. Deming's theory of management not only defines the steps required for transforming an organisation's quality culture, but also extends to the definition of what he calls the deadly sins and diseases that are responsible for crippling almost every organisation. The quality initiative has to start from the top and many

traditional views have to be substantially altered. A management commitment to complete transformation of the current (bad) practices is absolutely necessary for survival and competitive success. The fourteen points are discussed hereunder:

Principle 1: Create constancy of purpose to improve product and service.

Deming believed that the course of the change should be set today in order to be in business tomorrow, to be more competitive and to provide more jobs. He emphasized for long-term needs rather than short term profits. Investment on preventive maintenance today can avoid major operational problems tomorrow. Investment in quality and innovation will certainly ensure the existence and competitiveness of the organisation ten, twenty, or thirty years from now, because quality in processes and products always result in less scrap, les reworking, reduced inspection and warranty costs, and higher productivity and customer satisfaction. On the other hand, innovation guarantees the consumer's repeated return and organisation's enhanced reputation and market share.

Long term constancy of purpose for continuous improvement and innovation is an obligation that management should accept as a number one priority. Statistically speaking, the problem of establishing constancy and maintaining consistency of purpose can be related to the problem of, respectively, achieving the mean (target) and minimising the dispersion (variability) around the mean.

Principle 2: Adopt a new philosophy for the new economic age with management learning what their responsibilities are and by assuming leadership for change.

A change is necessary in the old management methods, which are no longer effective for the present business environment. Today's business environment is marked by complexity, unpredictability and stiff competition with an increasing need for innovation. As markets become global; people have a choice.

Managers have to be humble enough to admit that gone are those days when the management only needed to think and the workforce only needed to do. A mobilization of every bit employees' intelligence is definitely needed. Top managers have to face to a new philosophy of pulling together the intellectual resources of all the employees for the benefit of the organisation.

Principle 3: Cease dependence on mass inspection to achieve quality by building quality into the product.

Deming emphasised that it is a waste of time and effort simply to check goods with no consideration of how to make them better. Such an activity is often unreliable, as it is prone to mistakes and to variability in accuracy from the many inspectors involved, due to boredom and fatigue. The usual reaction to the inspection problems is to put on more inspectors, and to increase the inspection

effort yet again- a certain cause of even more problems. Deming calls this the fallacy of divided responsibility. Divided responsibility is actually reduced responsibility.

All this responsibility can instead be directed towards a continuous on-line examination and improvement of the processes through defect prevention programme for which everybody should be responsible; this in the long run costs much less, results in high quality end –products and minimises the need for inspection or after-sale service.

Of course, an amount of inspection might always be necessary. In small scale production, inspection might not be costly. On certain occasions full inspection, for example, before shipping an important product, might be an absolute necessity. But every important item consists of parts and components which are massively produced; and mass inspection of those parts, with rare exceptions, is unreliable, ineffective and does not guarantee quality.

Principle 4: End awarding business on price. Award business on total cost and move towards single suppliers.

Deming believed that the savings that can result from a relationship with a reliable supplier can by far outstrip the savings attainable by merely going for the lowest price. The objective should be to reduce the total costs, not just the initial costs. Indeed, the long term costs incurred as a result of using cheap, unreliable and low-quality input are possibly incalculable. A lowest tender contract might eventually turn out to be the most expensive of the proposed contracts. It is common practice for a dishonest supplier to offer a low bid with the sole purpose of ensuring the business; after this has been achieved, at a convenient time when it is too late for the purchaser to make other arrangements, an excuse will be found for the price of the materials, regrettably, to double.

It is probably worthwhile to stick to a single supplier for any one item, in a long term business association of loyalty and trust. Deming's advice is to choose a single supplier for each item on the basis of statistical evidence from the supplier's process feedback loop.

Principle 5: Aim for continuous improvement of the system of production and service to improve productivity and quality and to decrease costs.

Testing and retesting for quality should always take place in the laboratory even during production. Statistical technique exists to help in any area, manufacturing or not. A programme of total quality control for products, processes and services should be initiated and should take place continually.

The main responsibility of the management is constantly to improve the system so that innovation can materialise more easily. This itself is not easy, because the system covers everything; choice of suppliers, procurement, transport, funding for research, design, engineering, tools and techniques, maintenance and improvement, capital investment, allocation of human effort, training and retraining, selection of new employees, sales and methods of distribution, supervision and internal communications, accounting and payroll contact with and service to customers.

There is always a variability factor and always a room for improvement. This is quite unlike the traditional approach where meeting the specification limits meant everything. The problem of the traditional approach lies with the fact that the effects of the uncontrollable factors in the user's environment can very easily cause the product, whose components were too close to specification, to fail.

Principle 6: Institute on the job training.

There is a tremendous need to institute on the job training which should also include the managers. Management must be trained with statistical techniques to understand and fully appreciate the concept of variation and its negative consequences.

It has been a practice and a strong belief that training is non-productive and the first to be done away with when finances become tight. However if one sees the cost of training to the total cost associated with an employee over the years, it is miniscule. In fact top management has to appreciate that proper training always equips the employee with a better understanding of the job and its requirements.

Principle 7: Institute leadership with the aim of supervising people to help them to do a better job.

Leadership and supervision should focus on making the workers take more interest in their work. Modern leadership should ensure that quality, productivity and the performance of the people and processes are improved. Variety among different people should be regarded as an asset rather than an inhibiting factor; their various abilities should be identified and properly utilised for the benefit of the organisation. Leadership should be more about motivating and removing fear, teaching and counseling rather than judging, using mistakes to learn from rather than to blame and understanding the difference between random and special variation.

Principle 8: Drive out fear so that everyone can work effectively together for the organisation.

The atmosphere of fear makes most of the management principles impossible to implement. In other words, real improvement was impossible unless fear, the cause of enormous waste, is eliminated and replaced by mutual trust, respect and cooperation. An atmosphere of fear is always counterproductive and comes in the way of positive competition and innovation.

Principle 9: Breakdown slogan barriers between departments and individuals.

The common causes of problems which affect everybody amount to more than 85% of the total causes. They are part of the system and affect ever individual and division irrespective of the nature of the work. If the power of a common (statistical) language is adequately appreciated and made use of, management will be more capable in breaking down the barriers to communication.

Principle 10: Eliminate the use of slogans, posters and exhortations.

Deming always believed that people are already doing their best and no substantial improvement, apart from the elimination of some obvious special problems can result from management gimmicks. Given the chance, the workers will gladly do things right first time; but most of the time a handicapping system does not give people a chance.

People can improve through proper training. Unreasonable requests through hectoring slogans and posters, without the provision of the necessary tools for those requests to be met, can only create adverse relationships, mistrust towards management, isolation and increased anxiety.

Principle 11: Eliminate work standards and numerical quotas.

Deming was not a believer of management by objective (MBO), by numbers and by numerical targets. He emphasised on quality and not on quantity. The attainment of target should not be seen as the ultimate success as there is always room for improvement. The only way to increase quality and productivity is to replace work standards with competent leadership.

Deming does not tell us to manage without numbers. Individuals must have goals, aspirations, aims and intentions; companies need budgets, forecasts, etc. for planning and allocation of resources but they should not be arbitrary. Use of numerical goal is an attempt by the management to manage without knowledge of what to do, and in fact is usually management by fear. Indeed MBO or management by results (MBR) should be replaced by management by improvement of objectives (MBIO).

Principle 12: Remove barriers that rob people of their right to pride in their work.

The annual merit rating should be completely abolished, because it destroys teamwork, fosters mediocrity, increases variability in the performance of the appraisee, and focuses on the short term. The appraisal procedure should be replaced by proper leadership and communication and by counseling and development procedure, whose main purpose would be to identify, sustain or develop further the employee's contributions towards the continuous improvement of the organisation as a team.

Principle 13: Institute a vigorous education and self-improvement programme.

With this point Deming, perhaps indirectly, asks for a commitment to life time employment. Continuous re-education and re-training are based on the understanding that new skills are continuously required to keep up with developments in the new economic age.

Principle 14: Put everyone in the organisation to work to accomplish the transformation.

A permanent management structure should be created at the top to help towards the achievement of the transformation. Having learned the above thirteen points, managers in authority must explain to the rest of the employees the necessity for change. Everybody must accept their new responsibilities, which will differ depending on their position in the organisation [Walton, (1993); Logothetis, (2001); Aguayo, (1992); Deming (1986)].

5. Implementing the Deming philosophy

Deming advocated that the transformation through fourteen principles needs to be preceded with a change in the corporate culture. The fourteen principles are interlinked and overlapping. For e.g. if one sees principle 3, it talks about doing away with inspection. Such an action could be disastrous unless principle 5 is first adhered to which talks about improving the upstream systems and processes using better incoming materials (principle 4) and modern scientific tools and techniques which need to be learned (principle 6 and 13). The fourteen principles are a long term direction and aim, not a set of rules. They involve a lot of doing but, before this, they also involve a great deal of education, understanding of why the recommended changes are needed and a commitment to the effort to adopt ever one of the fourteen principles. It could be mentioned here that although improvements can obviously be attained by partial adoption of Deming's teachings, the massive breakthroughs can only happen by complete adoption.

6. Deming's Plan Do Check Action Cycle

There is an ongoing cycle of activities that Deming suggests as a procedure to assist in the establishment and long term existence of a quality organisation. The cycle, called the Deming cycle/PDCA cycle) consists of four main stages namely; plan, do, check and act as shown in figure 1. It reflects the basis of self-sustaining quality programme. It is the classic problem solving and loop learning model. A function of continuous improvement based on reduction in variation around the desired output.

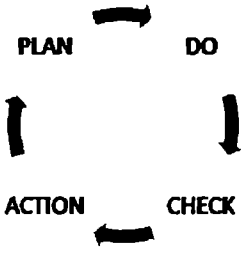

Figure 1: PDCA CYCLE

Source: Nigam (2005)

The figure 1 shows the PDCA cycle. It starts with an organisation planning a change, in the process, finds out what pleases the customer, makes changes where needed, checks the results and, depending on the results, acts either to standardise the change or to begin the cycle of improvement again with new information. In this way it succeeds in creating opportunities for all, i.e., customers, employees, owners, suppliers, government, etc. The organisation thus succeeds in

achieving shared understanding, commitment to the system and its purpose. This leads to understanding the difference in good and bad quality, good and bad losses, good and bad results and performances and also learning to use valid statistical methods, which makes it see the causes of the differences.

7. Deming's Lessons to management and Its Relevance today

In today's world individual's work within a system, is governed by conditions over which the individual has little or no control. The most common approach to problem solving is to look around for someone to blame or punish or to search for something to 'fix' rather than to look into the system as a whole for improvement. Setting and reaching targets seem to be the beginning and end of the entire quality improvement system. The single minded approach, higher the targets the better, ignoring the overall organisational development has become a norm which seriously endangers the quality of life of the employees. Organisations are more accustomed to see projects in a linear fashion, with a beginning and end. The job is done, on to the next. However, continuous or never-ending improvement requires instead a circular approach. Too often it is observed that one department does not understand how its work is used by the next, and thus cannot learn what things are important and in carrying out its tasks. Managers take pride on hunches and intuition. These ultimately lead to either self pride in case of success or the start of the blame game in case of failure.

At such difficult times when organisations across the globe in search of excellence are increasingly becoming inner directed with little or no understanding of the right path for quality improvement the lessons of Deming becomes relevant. Deming's lessons to the management are as follows:

- Only transformations of management and government relations with industry can halt the decline.
- A quality program launched by ceremonies, speeches, beating of drums, badges and heavy applause, is a delusion and a snare.
- Experience without theory teaches nothing about quality and competitive position. Experience will answer a question, but the question comes from theory.
- Management needs training to learn about their organisation.
- The important problem is not the bottom 10%, but who is statistically out of line and in need of help.
- The big problem of leadership and training arises from a standard of what is acceptable work and what is not.
- Putting out fires is not improvement.
- Specification limits are not action limits.

- Absenteeism is a function of poor management. If people feel important to a job, they will come to work.
- Saying that targets do not accomplish anything is wrong, rather their accomplishment is negative.
- Desperation to do something and devoid of ideas by which to improve productivity leads to new goals and new work standards by the management.
- Management too often suppose that they have solved their problems of quality by establishing a Quality Control Department and forgetting about it. **(Logothetis, 2001)**

8. Conclusion

Deming's quality method is a management method, which requires change in our managers. It considers quality as a job of management, a process which assumes that a worker will produce quality if he is given a chance. For this, managers have to collaborate with workers. They have to change their focus on process rather than on workers. The change has to be made in production process without inciting workers. This is an overall fundamental change in the management process. Deming's teachings are relevant today as it was earlier and unless organisations learn and practice this approach to management, one can conclude by quoting Deming 'you do not have to do this; survival is not compulsory'.

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Jute Agriculture, Industry, and Trade in India and other Asian Countries: A Comparative Study

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Abstract: Jute agriculture, industry, and trade together form jute sector. The world jute economy is dominated by the Asian jute sector that comprises of eleven countries namely, India, Bangladesh, China, Pakistan, Nepal, Myanmar, Thailand, Indonesia, Uzbekistan, and Vietnam, and it has travelled a long way witnessing many ups and downs and experiencing fluctuating fortunes over the years. Out of these eleven Asian countries, India and Bangladesh are the only countries contributing significantly in all the three areas of the jute sector of Asian region since decades, while the remaining nine countries have excelled in one or two specific areas only. India happens to be the largest producer of jute and jute products and holds the second position in the World as regards export of jute goods presently. Nevertheless, Indian jute sector is often reported as suffering from numerous problems like unstable production of raw jute, fluctuating production of jute products, poor export performance, and so on and thereby passing through a critical stage in recent times. Therefore, a modest attempt has been made in this paper to assess the recent trends as regards jute agriculture, industry, and trade in the Asian countries in general, and particularly in India to identify the loopholes, if any, in Indian context and suggest some policy measures, if required to develop a sustainable and efficient jute sector in the country.

Key-words: Golden fibre, jute and allied fibers, jute diversified products.

1. Introduction

Jute is a natural fibre with golden and silky shine and hence called the *'Golden Fibre'*. It is a commercial plant yielding the cheapest natural fibre for industrial use. It has been extensively used in manufacturing different types of packaging products namely, hessian, sacking, carpet backing, bags, ropes, and twines etc., for decades. It has other uses too. Characteristics of the fibre that make it commercially significant are softness, strength, length and uniform size. Jute fibre is 100% bio-degradable and used as raw materials for packaging, textile, non-textile, construction, and

agricultural sectors. Recently, jute fibres are used in a wide range of diversified products such as decorative fabrics, chic-saris, salwar kamizes, soft luggage, footwear, greeting cards, moulded door panel, and other innumerable useful consumer products. Supported by several technological developments in modern age, jute is being used to replace expensive fibres and scarce forest materials. The production of jute diversified products is carving out new export market for this century old industry.

The world jute sector has a strong historical background and is rooted deep in several parts of the world, though the contribution made by the Asian countries namely, India, Bangladesh, China, Pakistan, Myanmar, Nepal, Uzbekistan, Indonesia, and Thailand in world jute economy, over the years is undeniable. Jute is considered as an asset to the Asian continent, and specifically, India and Bangladesh. Nearly 98% of world raw jute is grown in these two Asian countries *(Rahman 2008).* India is the largest producer of raw jute and jute products, while Bangladesh occupies the first position in the world as regards export of jute goods. China is also an important exporter of jute goods. Nepal is the other Asian country that grows raw jute, but its production volume is not very significant. Another Asian country, Pakistan, though does not grow raw jute but is an important manufacturer of jute goods, and mostly depends on Bangladesh for supply of raw jute. Myanmar, Indonesia, Uzbekistan, and Thailand are the other countries from this region engaged in production of raw jute and jute goods, mainly for their domestic consumption. The jute mills are located in different parts of these countries. The geographic locations and climatic situations of these Asian countries are the basic reasons for proliferation of jute agriculture, industry, and trade. Jute used to be an important source of foreign exchange for the Asian countries during '60s. Even in '70s, it enjoyed the same status. With the introduction of synthetic substitutes during '80s, the Asian jute sector has started losing its predominant position in the international market. Fortunately, environmental awareness among industries and creativity among the producers have created new scope and opportunities for jute, and this ancient industry is thus expecting to regain its popularity and importance thereby welcoming a *"golden era"* in terms of jute diversified products. Jute has also entered the non-woven industry in recent times. The demand for jute has made its way into the automotive and aviation industry. Jute is now being used to manufacture eco-friendly interiors for aircrafts and automobiles in countries like United States of America (U.S.A), Japan, United Kingdom (U.K), France, Germany, Italy, and South Korea.

Therefore, the present paper is organized as follows. *Section 2* sketches the objectives of the present study. Data source and methodology are discussed in *Section 3. Section 4* presents the comparative analysis in respect of jute agriculture, industry, and trade between India and other Asian countries, while the overall findings of the present study are detailed under *section 5,* and conclusions and recommendations are made in *Section 6.*

2. Objectives of the Study

The *general objective* of the study is to examine the present status of the Asian jute sector by evaluating the performances of the Asian countries engaged in jute agriculture, industry, and trade. *More specifically,* the paper attempts to:

- explore India's contribution to the Asian jute sector in comparison to the other Asian countries;
- identify the recent trend in India as regards jute agriculture;
- explore India's recent performances in respect of production and export of jute products thereby identifying the weaknesses, if any, of Indian jute industry, and
- suggest some policy measures to improve the prevailing situation in Indian jute sector, if required.

3. Data Source and Methodology

The present study is exploratory in nature and based on secondary data collected from the website of the International Jute Study Group (IJSG). To corroborate the above mentioned objectives and draw meaningful inferences, graphical representations in the form of line chats are used.

4. Jute Agriculture, Industry, and Trade in India and other Asian Countries

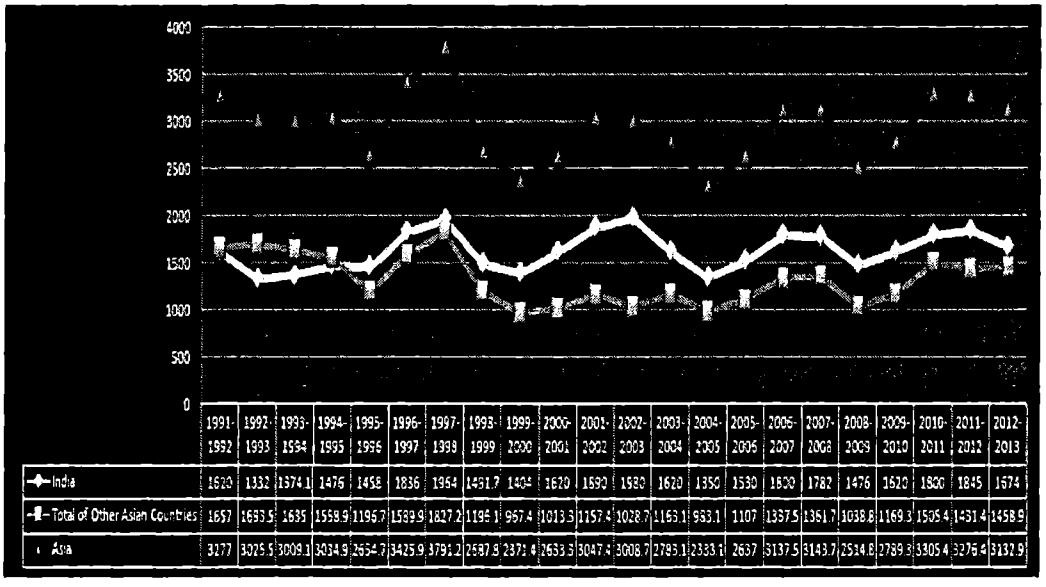
This section has been compartmentalized into three sub-parts viz. part (a), part (b), and part (c). *Part (a)* presents India's position in jute agriculture in comparison with the other jute growing countries in Asia. *Part (b)* makes a comparison between India and other Asian countries in respect of industrial output of the jute sector, while *part (c)* tries to explore India's recent trend as regards export of jute goods.

Part (a): Jute Agriculture in India and Other Asian Countries

Jute is an agricultural fibre crop belonging to a family of few other natural fibers, which are jointly called as Jute and Allied Fibre crops (JAF). The main species of jute and kenaf include Tossa jute, White jute, Kenaf, and Mesta. The jute fibre is also known as Pat, Kosta, Nalita, and Bimli etc. The two main types of jute, White jute and Dark jute or Tossa are grown in India, Bangladesh, and Indonesia. Jute is preferred in Bangladesh, India, Myanmar, and Nepal, while Kenaf is mainly grown in China and Vietnam and Mesta is preferred in Thailand. The Asian countries that take part in raw jute cultivation are India, Bangladesh, China, Myanmar, Nepal, Thailand, and Uzbekistan. India and Bangladesh are the leading producers of raw jute in the World, yet the joint efforts of the remaining Asian countries undoubtedly result in considerable volume of supply of raw jute to the world jute sector. Therefore, to understand India's present condition and its recent trend in production

of raw jute, a comparative performance analysis as regards production of raw jute between Indi and other jute producing countries from the Asian region, for the last two decades, is sketched i Figure 1 below.

Figure 1: Production of Raw Jute in India and Other Asian Countries (000' Tonnes)



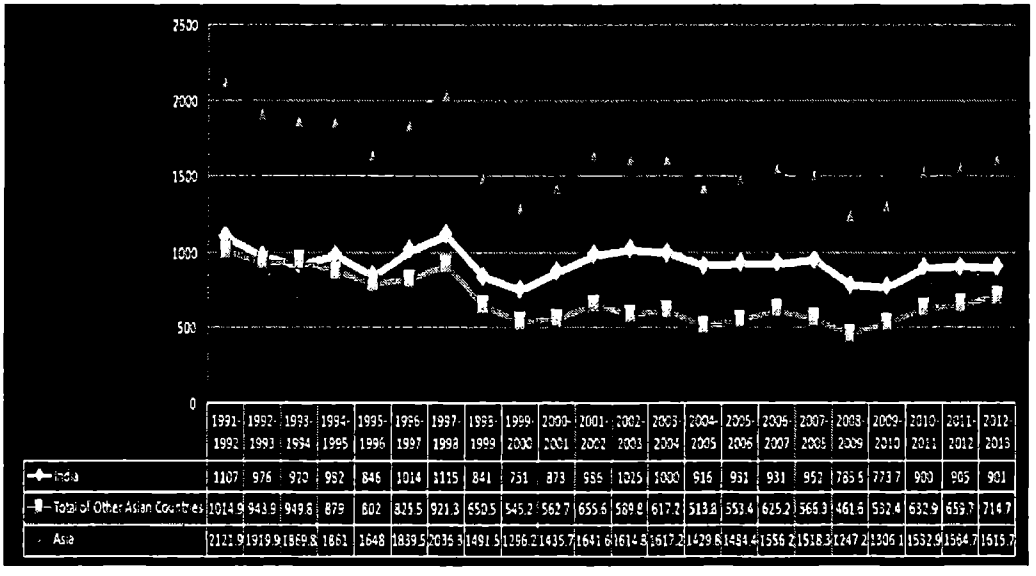
	1991-1992	1992-1993	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
India	1520	1332	1374.1	1476	1458	1836	1954	1451.7	1404	1620	1690	1583	1620	1350	1530	1800	1782	1476	1620	1800	1845	1674
Total of Other Asian Countries	1657	1693.5	1635	1558.9	1196.7	1589.9	1827.2	1195.1	967.4	1013.3	1157.4	1028.7	1163.1	983.1	1107	1337.5	1361.7	1038.8	1169.3	1505.4	1431.4	1458.9
Asia	3177	3025.5	3009.1	3034.9	2654.7	3425.9	3781.2	2587.8	2371.4	2633.3	3047.4	3008.7	2783.1	2333.1	2637	3137.5	3143.7	2514.8	2789.3	3305.4	3276.4	3132.9

Observation

India happens to be the largest producer of raw jute in the world. Its nearest competitor is Bangladesh The other Asian countries that take part in jute agriculture in considerable volume are China Myanmar, Nepal, Thailand, and Uzbekistan. The graphical representation made in Figure 1 abov demonstrates India's dominant position and its recent trend *(white line)* in raw jute production i comparison to that of the other Asian countries *(grey line),* while the combined effect of these tw lines is represented through the *black line* signifying the overall picture of the Asian jute sector a regards production of raw jute during the period of study. The line graphs *(white and grey)* mak it clear that during recent times, India's performance in terms of production of raw jute and that c other Asian countries have been unstable. There may be several reasons for such unstable trend but what is really alarming in Indian context is that in the year 2012-13 it has drastically decrease to 1674x1000 tonnes from 1845x1000 tonnes in 2011-12, while the other Asian countries hav made some progress in 2012-13 over 2011-12. As a result, the gap between the *white and gre lines* becomes narrower and as the positive effect of the other Asian countries gets offset by th

negative effect of Indian jute sector, the *black line* behaves accordingly, and moves downward. This situation could have been analyzed further had there been available data for another two or three years. However, such unstable behaviour as regards production of raw jute both by India and other Asian countries can be observed over quite a long time and hence it calls for an analysis of year-wise land use for jute cultivation in India and other Asian countries as well to throw some light onto the reasons behind such fluctuating trends. Figure 2 below depicts the same accordingly.

Figure 2: Area under jute Cultivation in India and Other Asian Countries (000' Hectares)



	1991-1992	1992-1993	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
India	1107	976	970	952	846	1014	1115	841	751	873	985	1025	1000	916	931	931	952	783.5	773.7	900	905	901
Total of Other Asian Countries	1014.9	943.9	949.6	879	802	825.5	921.3	650.5	545.2	562.7	655.6	589.8	617.2	513.8	553.4	625.2	566.3	461.6	552.4	632.9	659.7	714.7
Asia	2121.9	1919.9	1869.8	1861	1648	1839.5	2036.3	1491.5	1296.2	1435.7	1641.6	1614.8	1617.2	1429.8	1484.4	1556.2	1518.3	1247.2	1326.1	1532.9	1564.7	1615.7

Observation

Figure 2 above shows the year-wise differences between the agricultural land used for jute cultivation in India and other jute producing countries from the Asian region during the period of study. The *white line* shows that in between 1999-2000 and 2002-03 India has been able to increase its jute cultivable land in a significant manner and covered up to 1025x1000 hectares of land for jute cultivation, while from 2004-05 onwards its trend becomes quite stagnant and even experiences major downfalls in 2008-09 and 2009-10. The *grey line,* on the contrary, shows that the other Asian countries have been able to increase their jute cultivable land in recent past i.e. 2008-09 onwards. The graph further shows that till 2010-11, the *black line* representing the overall scenario of the Asian jute sector as regards usage of agricultural land for jute cultivation has been influenced by India's individual performance, but has recently changed its behaviour to be in tune with that of other Asian countries as the rise in agricultural land use for jute cultivation in other Asian countries

has outperformed the marginal increase in India. Figures 1 and 2 together clarify that though year-wise variation in land use for jute agriculture had some impact on the volume of raw jute production as it can be seen that reduction in usage of agricultural land has led to some decrements in production of raw jute especially in Indian context, but the reverse is not true as increase in use of agricultural land for jute cultivation in India and other Asian countries has failed to bring about a remarkable increase in the volume of raw jute production. Therefore, there might have been other reasons for fluctuating trends in production of raw jute in India and other Asian countries.

The next part tries to explore India's performance as regards production of jute goods in comparison to that of other Asian countries during the period of study and brings out the weaknesses if any, in the existing structure, accordingly.

Part (b): Jute Industry in India and Other Asian Countries

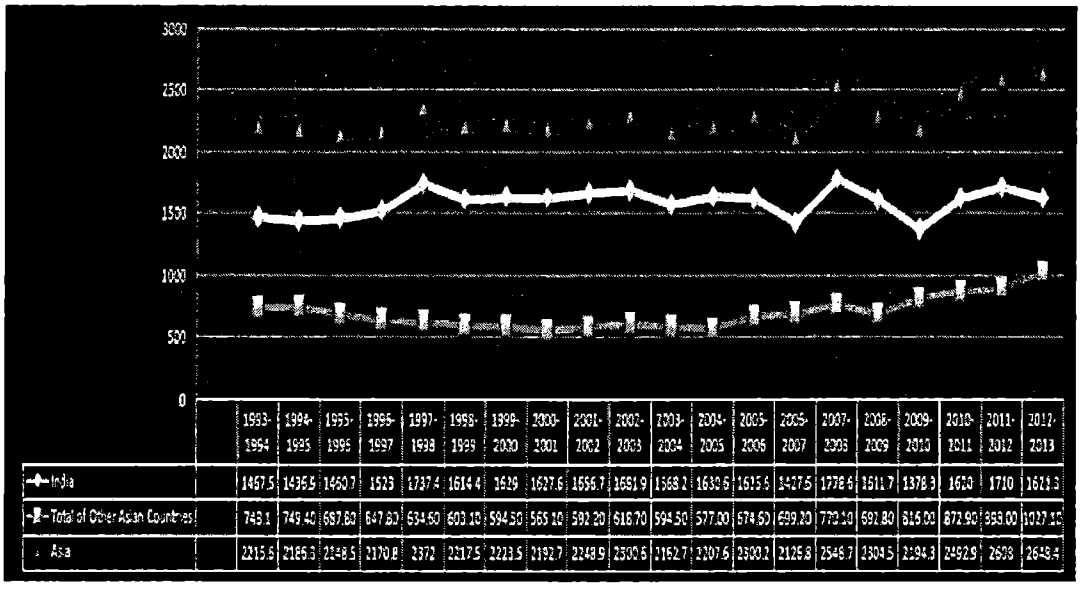
India occupies the first position in the world as regards production of jute goods, followed by Bangladesh, presently. The other Asian countries that take part in production of jute goods are Pakistan, Myanmar, and Thailand. As stated earlier that Pakistan does not grow raw jute and depends mostly on Bangladesh for supply of raw jute, its individual contribution in respect of production of jute goods in comparison to India and Bangladesh is not very significant. The contribution made by the two other Asian countries viz. Myanmar and Thailand are also small, however their joint effort in enriching the Asian jute sector in terms of production of jute industrial output has been commendable.

At present, India has 93 jute mills, located in several parts of India, producing a yearly output of about 15,26,000 tonnes and employing nearly 3.5 lakh workers. But the dismal picture is that as of 31.08.2015, 26 mills in India have been closed down and remaining jute mills are struggling. Bangladesh jute industry has grown up mainly on export orientation. It offers finished jute products at lower prices than that of India. It relies on traditional jute packaging materials such as sacking and hessian cloth mainly. The total number of jute mills in Bangladesh is 205 which are operated by three main organizations namely, Bangladesh Jute Mills Association (BJMA), Bangladesh Jute Spinners Association (BJSA), and Bangladesh Jute Mill Corporation (BJMC). The scenario of the remaining three countries engaged in production of jute goods from the Asian region is a little different from that of India and Bangladesh as they produce jute goods basically to support their domestic needs. As for example, the basic demand for jute products in Pakistan arises as packing material from its main agriculture based industries namely, sugarcane, wheat, rice, paddy and maize industry. It has 10 registered jute mills under its official jute mill association, named as Pakistan Jute Mills Association (PJMA). Myanmar and Thailand are the small participants in the world of production of jute goods in comparison to India and Bangladesh. They mainly produce jute bags, hessian carpet backing cloth, jute carpets, jute twines, jute yarns, sacking cloth, jute handicrafts, and tissue

paper etc. After meeting their domestic demands, these countries export their jute products to mainly Iran, Egypt, Sudan, and United Kingdom.

Under this part, the primary objective considered is to see whether unstable production or supply of raw jute does really impact the production of jute goods in India and other Asian countries. It is done by analyzing the pattern of consumption of raw jute in the jute mills operating in India and other Asian countries over the period of study. Secondly, a comparative analysis between India and other Asian countries engaged in production of jute goods over the period of study is done to understand India's recent trends in terms of production of jute goods and to identify the loopholes, if any, in the existing structure. The Figure 3 below meets the primary objective accordingly.

Figure 3: Consumption of Raw Jute in Jute Mills in India and Other Asian Countries (000' Tonnes)



	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
India	1467.5	1436.5	1460.7	1523	1737.4	1614.4	1619	1627.6	1656.7	1681.9	1568.2	1630.6	1615.6	1427.5	1778.6	1611.7	1378.3	1620	1710	1614.3
Total of Other Asian Countries	748.1	749.40	687.80	647.80	634.60	603.10	594.50	565.10	592.20	618.70	594.50	577.00	674.60	699.20	770.10	692.80	815.00	872.90	993.00	1027.10
Asia	2215.6	2185.9	2148.5	2170.8	2372	2217.5	2213.5	2192.7	2248.9	2300.6	2162.7	2207.6	2290.2	2126.8	2548.7	2304.5	2194.3	2492.9	2703	2641.4

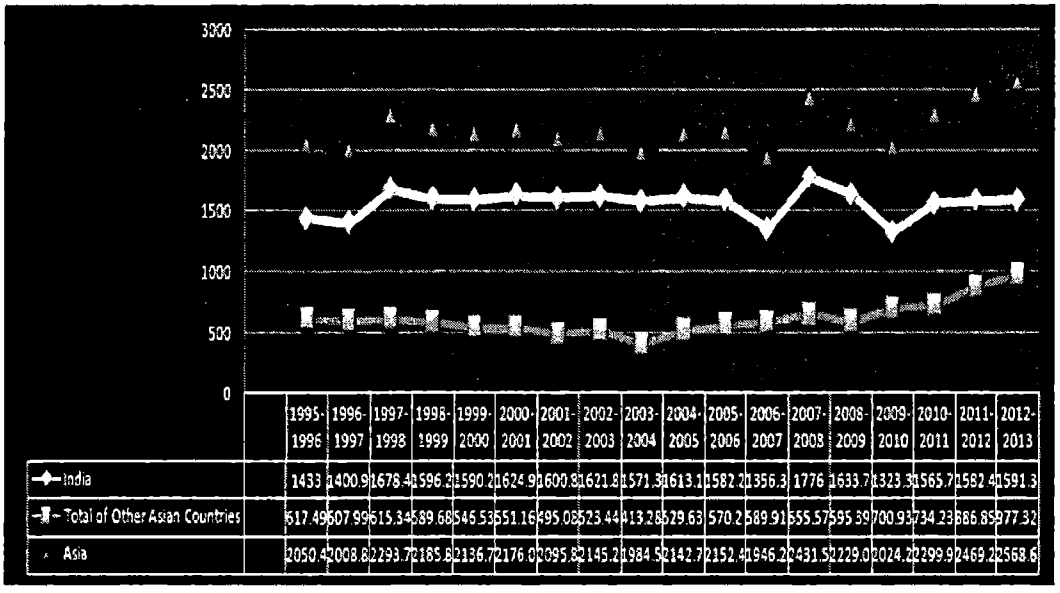
Observation

The line graphs in Figure 3 above suggest that the jute mills in other Asian countries have been able to maintain a steady upward trend in consuming the basic raw material i.e. raw jute since 2004-05 and most importantly, they have registered the highest consumption level of 1027.10x1000 tonnes of raw material in 2012-13. This fact certainly proves that the unstable production of raw jute, as shown in Figure 1 before, in these countries does not have any severe effect on the existing demand of the jute mills operating therein. In Indian context, the existing trend of the jute mills as

far as their consumption of basic raw material i.e. raw jute is concerned starts fluctuating from 2002-03 onwards, and even decreases considerably in recent years from its highest level of 1778.6x1000 tonnes during 2007-08. Furthermore, Figures 1 and 3 jointly establish the fact that fluctuating production of raw jute does not in any way affect the consumption pattern of raw jute by the jute mills operating in India, as consumption of raw jute in the jute mills has not proportionately increased or decreased with the increase or decrease in production of raw jute over the period under study.

Now, Figure 4 below attempts to satisfy the second objective of identifying the recent trends of Indian jute industry and that of other Asian countries as regards production of jute goods over the period of study and identify the problems, if any, accordingly.

Figure 4: Production of Jute Goods in India and Other Asian Countries (000' Tonnes)



	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
India	1433	1400.9	1678.4	1596.2	1590.2	1624.9	1600.8	1621.8	1571.3	1613.1	1582.2	1356.3	1776	1633.7	1323.3	1565.7	1582.4	1591.3
Total of Other Asian Countries	617.49	607.99	615.34	589.68	546.53	551.16	495.08	523.44	413.28	529.63	570.25	589.91	555.57	595.39	700.93	734.23	886.85	977.32
Asia	2050.4	2008.8	2293.7	2185.8	2136.7	2176.0	2095.8	2145.2	1984.5	2142.7	2152.4	1946.2	2431.5	2229.0	2024.2	2299.9	2469.2	2568.6

Observation

It is found from the Figure 4 above that the recent performance of Indian jute industry in terms of production of jute goods is unsatisfactory in comparison to that of other Asian countries engaged in production of jute goods. Moreover, the *white line* reveals that Indian jute industry has failed to maintain the highest level of production of 1776 x1000 tonnes of jute goods that it has achieved during 2007-08 in recent times, and most alarmingly, the production level has fallen drastically in 2008-09 and 2009-10. The picture in case of other Asian countries is quite impressive in comparison

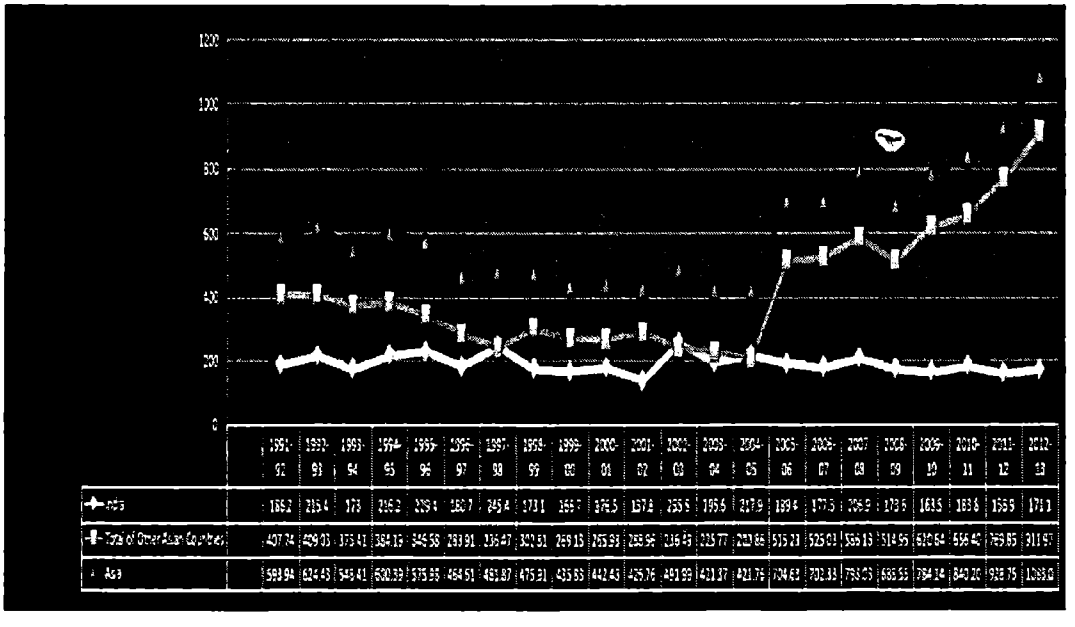
to that of India as they have managed to register a steady upward trend from 2008-09 onwards, thereby having a significant impact on the total volume of production of jute goods of the Asian jute sector and this can be clearly seen by the behaviour of the *black line* since 2010-11.

The next part describes the performance of the Asian jute sector in terms of export of jute goods and shows India's contribution therein. Among the Asian countries engaged in export of jute goods, Bangladesh occupies the leading position, while India stands at the second position. To know the recent trend of the Asian jute sector in general, and India particularly, as regards export of jute goods, comparative line graphs are drawn over the period of study. The following *Part (c)* narrates the same accordingly.

Part (c): Jute Trade by India and Other Asian Countries

Besides India and Bangladesh, the other Asian countries that take part in export of jute goods are China, Nepal, Pakistan, and Thailand. A comparison is made in Figure 5 below between India and other Asian countries in respect of export of jute goods over the period of study.

Figure 5: Export of Jute Goods by India and Other Asian Countries (000' Tonnes)



Observation

The *white line* represents the year-wise trend in export of jute goods from India, while the *grey*

and *black lines* indicate the same of the other Asian countries and Asian jute sector respectively. The *white line* shows that during the earlier years (from 1991-92 and up to 2004-05), India's individual performance was much better as compared to its recent performance since 2005-06. On the contrary, the performance of the other Asian countries as regards export of jute goods has experienced major improvements since 2004-05, which can be seen from the behaviour of the *grey line* in Figure 5 above. Furthermore, the improvements made by the other Asian countries in recent times have successfully offset the poor and fluctuating performance of the Indian jute industry as regards export of jute goods, thereby enabling the Asian jute sector to progress at an increasing trend which can be observed by the behaviour of the *black line* in Figure 5 above from 2008-09 onwards.

5. Findings of the Study

The study reveals that during the period of study, India's own contribution to the Asian jute sector in terms of agriculture of raw jute, production and export of jute goods remains undeniable, though in recent times Indian jute sector has experienced numerous ups and downs and therefore failed to maintain a steady trend. The study further reveals that India need not worry about its recent unstable trends in respect of usage of jute cultivated land and volume of production of raw jute as these are not creating any supply side constraint on the jute mills operating in India at present. Besides, it becomes evident from the present study that year-wise variation in agricultural land does not have severe impact upon the year-wise production of raw jute in India, and such fluctuations in production of raw jute may result from some other reasons like year wise variation in rainfall during the sowing season in India etc. Hence India should think of improving the present status of its jute sector by improving the consumption pattern of the existing jute mills thereby accelerating its recent trends in production and export of jute goods, as well. The study thus calls for further investigation into the basic reasons for such poor performances of Indian jute mills as it becomes evident from the present study that it is not the short supply of raw jute that is responsible for such struggling performances of the Indian jute mills, but the existence of other factors which have consistently been doing harm to the Indian jute industry thereby reducing India's relevance in the Asian jute sector in comparison to that of other Asian countries in recent times.

6. Conclusions and Recommendations

The present study successfully meets the objectives with which it was initiated. It reveals the present status and the ongoing trends of the Asian jute sector in respect of jute agriculture, industry, and trade and identifies India's role therein. It appears that India's recent performance as regards production and export of jute goods is passing through a critical stage as compared to that of other Asian countries. The study argues in favour of the unstable trend of raw jute production in India by

:stablishing the fact that year-wise variation in production of raw jute does not create any supply :onstraint to the jute mills operating in India. The study also reveals India's stumbling performance .s regards export of jute goods. In recent times, while, the other Asian countries have been able to ncrease their market share in terms of export of jute goods, Indian jute sector has suffered from nconsistent and unstable export performances. Thus it can be concluded that it is neither due to hort supply of raw jute, nor due to fluctuations in market demand of jute goods, rather Indian jute ndustry has been suffering from some other problems in recent times, and hence the following ecommendations are made for the overall improvement of jute agriculture, industry, and trade in ndia.

- In India, it may not be possible to increase the agricultural area under jute cultivation to increase the volume of production of raw jute, rather deployment of modern agricultural techniques and use of high-yielding jute seeds can mitigate the problem of unstable trend in production of raw jute in India, to some extent.
- Region-wise differences in respect of jute agriculture in India are to be analyzed to know whether any specific region or state in India is suffering from such production crisis or not.
- The present status of the jute mills operating in India should be sincerely examined to identify loopholes, if any, in the existing structure. Installation of modern tools and practising latest techniques are to be made compulsory in the jute mills for manufacturing jute goods.
- Financial performance of the mills belonging to Indian jute sector are to be analyzed under some specific parameters like capital structure, profitability, liquidity etc. over a decent time period to understand their actual financial health.
- The working conditions of the jute mills operating in India are to be examined at a regular interval and initiatives are to be taken for the overall wellbeing of the workers engaged in production of jute goods in these jute mills.
- Effective marketing and promotion policies are to be framed and implemented in order to capture the major share of the existing export market of jute goods.
- Government initiatives are to be encouraged to create social awareness for more and more use of bio-degradable products made of jute.

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Impact of Ownership Structure on Firm Performance: Evidence from India

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Abstract: This paper attempts to enquire the impact of ownership structure on firm performance. The sample is based on of BSE 200 Index companies and the study spans over a period of 15 years, from 2001 to 2015. It considers four major groups of ownership viz., Indian Promoters (IP), Foreign Promoters (FP), Non-Promoter Institutions (NPI), and Non-Promoter Non Institutions (NPNI) and three measures of performance namely, return on asset (ROA), return on equity (ROE), and Tobin's Q ratio (TQ). Panel data regression results confirm that there is a significant positive relation between ownership structure and firm performance.

Key-words: Corporate governance, ownership structure, firm performance, India, panel data regression.

1. Introduction

The issue of corporate governance has acquired substantial attention of policy makers, regulators, researchers, investors and other stakeholders since last two decades. The increased interest reflects the importance of corporate governance for social and economic development. With the opening up of economies of countries, the concern for corporate governance has also spread in many developing countries. In the Indian context, globalization on one hand made the world market accessible to Indian corporate sector, while on the other hand, it has intensified the competition in the domestic front with the advent of multinational firms. In this changed scenario, quality of governance has become a critical success factor for survival and a source of competitive advantage, improving the firm's performance and the ability of a company to raise funds from capital markets. It also affects the development and functioning of capital markets and exerts a strong influence on resource allocation. Effective corporate governance mechanisms include both internal mechanisms such as ownership structure, board of directors and its major committees and external mechanisms such as hostile takeover bids, legal protection of minority shareholders and disciplining the managers

in the external labour market. The corporate governance reforms in India have mainly focused on internal governance mechanisms. The ownership structure is one of the key internal governance mechanisms widely considered to mitigate governance problems of firms.

Ownership structure has two implications, one is concentration and the other is identity. The distribution of ownership among different categories of owners provides useful information about the corporate governance structure of a company. Again, the identity of owners has important implication for corporate governance as different category of owners (viz. Indian, Foreign, and Institutional etc.) has different goals with regard to profit & dividend, capital structure, power & control and growth of the firm. For this reason, identification of ownership structure which will enhance the performance and value of the firm and thereby economic growth, development and well-being of a country is important. The importance of analyzing the ownership structure of Indian Companies and its link to performance is due to the fact that the onus of several high profile corporate scams and debacles, both in India and abroad, has been placed on the underlying ownership and control structures.

Though there is variation in corporate governance structures and systems across countries, the existing literature has remained largely confined to the United States and other developed countries where the governance systems are quite different from those found in India and other transition economies. Research on corporate governance has remained in its infancy in India. The few known studies that have examined the relationship between corporate ownership structure and firm performance in India have also produced conflicting results. Hence, there exists a scope for additional investigations pertaining to the affects of ownership structure on performance of companies. Against this backdrop, the present study aims to examine the impact of ownership structure on performance of Indian companies.

The remainder of the paper is organized as follows: Section II contains a review of literature followed by objective of the study in Section III. Section IV explains materials and methods. Section V reports the results and provides a discussion of the results. Section V concludes the paper with policy implications. The last section gives limitations of the study and future research direction.

2. Review of Literature

There exists plethora of studies and researches globally on the relationship between ownership structure and firm performance, but the results are rather mixed. Findings of some of the notable studies are discussed below:

There are many studies around the world that examined the relationship between ownership concentration and firm performance. While Berle and Means (1932), Classens and Djankov (1999), Demsetz and Villalonga (2001), Earle et al. (2005), Ganguli and Agarwal (2009), Imam and Malik

(2007), Kapopoulos and Lazareto (2007), Lee (2008), Lin et al. (2002), Singh and Gour (2009), Al-Najjar (2015), Jandik and Rennie (2008), Chen (2012), Xu and Wang (1999) etc. found a positive relationship between ownership concentration and firm performance, other studies like Demsetz ((1983), Demsetz and Lehn (1985), Raji (2012), Fazlzadeh (2012), Karaca and Eksi (2012), Tsegba and Herbert (2011) revealed an absence of relation between the two. Again, there are many studies like Belkhir (2005), Hu et al. (2003), Roszaini and Mohammad (2006) etc. which found empirically, that a negative relationship exist between ownership concentration and firm performance. Regarding foreign ownership and firm performance, Xu et al. (2005), Imam and Malik (2007), Choi et al. (2007), Sarkar and Sarkar (2000), Unuigbe and Olusanmi (2012), Khanna and Palepu (2013), Douma et al. (2006), Dwivedi and Jain (2005) etc found a positive relationship between the two. Again, Chibber and Majumder (1999), Kumar (2004), Millet et al. (2010), Tsegba and Herbert (2011) found that there is no relation between foreign ownership and firm performance. A large number of studies found a positive relationship between institutional ownership and firm performance. Studies done by McConnel and Sarvaes (1990), Xu and Wang (1999), Irina and Nadezhda (2009), Harjoto and Jo (2008), Liang et al. (2011), Imam and Malik (2007), Choi et al. (2007), Douma et al. (2006), Fazlzadeh (2012), Al-najjar (2015) have confirmed it. On the contrary, Mizuno (2010), Mura (2007), Dwivedi and Jain (2005), Unuigbe and Olusanmi (2012), found that there exist a negative relationship between institutional ownership and firm performance. A substantial number of studies around the world, like Bhagat and Bolton (2009), Cho (2008), Chung et al. (2008), Demsetz and Villalonga (2001), Douma et al. (2006), Imam and Malik (2007), Unuigbe and Olusanmi (2012), have found a positive relationship between managerial ownership and firm performance. On the other hand, some studies like Dwivedi and Jain (2005), Belkhir (2005), Irina and Nadezhda (2009), Tsegba and Herbert (2011), Liang et al. (2008) found that there is a negative relation between managerial ownership and firm performance, but few studies such as Chang (2009), Himmelberg et al. (1999), Mohammad (2011), Roszaini and Mohammad (2006) found that there is no relationship between managerial ownership and firm performance.

The above review of literature reveals that extensive empirical literature exists globally on the relationship between ownership structure and firm performance, but the findings are not conclusive and the spectrum of results is wide. Unfortunately, the empirical assessment of studies on the relationship between ownership structure and firm performance in India has been sparse. The few known studies that have examined the relationship between a few corporate ownership structures (such as concentrated and insider/managerial ownership) and firm performance in India have also produced conflicting results and most of the studies are industry specific. Again, hardly any study has considered the categories of ownership as provided under clause 35 and 40A of the Listing Agreement of SEBI. Hence, there exists a scope for additional investigations pertaining to the effects of ownership structure on performance of companies in India. This study, therefore, proposes to bridge the above mentioned gaps.

3. Objective of the Study

The objective of the study is to examine the impact of ownership structure on performance of select private sector non-banking listed companies in India.

4. Materials and Methods

This section describes the criteria to be used for selecting the sample companies, data sources and the period to be covered by the study. It also provides definition of key variables. Finally, it describes the methodology that will be used for the empirical tests.

Sample Selection, Data Sources and period of Study

The analysis is confined to all the companies that are included in the BSE 200 Index. For the analysis, we have taken a subset of the above 200 companies. Firstly, we have excluded from the sample all the public sector companies as their performance is influenced by a large number of social obligations which might have been difficult to justify. Secondly, we have kept out all the banking and finance companies since they are governed by the Banking Regulation Act and RBI; hence these companies are different from those governed by the Companies Act. Thirdly, those companies which were not listed for all the fifteen years under consideration were excluded. Finally, the number of companies was further reduced due to non-availability of complete data for the period under study. These sample selection criteria resulted in a final sample size of 89 companies.

The data sources are the Annual Reports of the companies, corporate database Capitaline Plus, and the reports filed by companies with the BSE as part of the listing requirements.

The present study covers a period of 15 years from 2000–01 to 2014–15. Listed companies in India are required to disclose equity ownership pattern in detail as per clause 35 of Listing Agreement only since 2001. This also limits the study of data prior to this period.

Key Variables

To examine the impact of ownership structure on corporate performance in India, the following variables have been considered:

Measurement of Corporate Performance (Dependent Variable)

Three measures of performance, as supported in the finance and accounting literature are chosen for the purpose of analysis.

Tobin's Q (TQ): We shall use Tobin's Q as a market based measure of performance. TQ is computed as [Market Value of Equity Shares + Book Value of Preference Shares + Book Value of Total Debt/ Book Value of total assets] with all values computed at the year end.

Return on assets (ROA): The accounting variable chosen is calculated as the ratio of operating

income (EBIT) to total assets. Total assets include value of fixed assets, investments, and current assets.

Return on equity (ROE): ROE as provided by the Capitaline database has been used as the accounting based measure of firm performance. [ROE = PBDITA/Shareholders' Equity]

Ownership Variables (Independent Variables)

The present study is based on relevant data available from the mandatory disclosure under Clause 35 of the Listing Agreement. It considers four major groups of ownership viz., Indian Promoters (IP), Foreign Promoters (FP), Non-Promoter Institutions (NPI), and Non-Promoter Non Institutions (NPNI).

Control Variables

In order to control for the other possible determinants of performance not captured by the ownership variables, some observed company characteristics have been included as control variables. The control variables used in the study have been selected with reference to those employed in earlier studies which are Age, Size and Leverage.

- Age: Age is defined as the number of years between the observation year and the firm's incorporation year.
- Size: Firm size is measured using natural logarithm of sales revenue for each year.
- Leverage: Debt-Equity ratio as provided by the Capitaline database has been considered as proxy for firm's financial leverage. [Debt-Equity Ratio = Total Debt/Total Equity]

Research Hypotheses

Many empirical studies have tested the effects of ownership structure on corporate performance. Evidences on these effects, however, have been mixed. In spite of these discrepancies, there have been some relatively consistent findings and observations from past research, on the basis of which hypotheses have been formulated.

The study will test the following hypotheses:

Hypothesis 1a. There is a significant relationship between the ownership by Indian promoters and return on assets.

Hypotheses 1b-d. The hypotheses are on similar line as above with the words 'Indian promoters' substituted for foreign promoters, non-promoter institutions and non-promoter non-institutions respectively.

Hypothesis 2a. There is a significant relationship between the ownership by Indian promoters and return on equity.

Hypotheses 2b-d. The hypotheses are on similar line as above with the words 'Indian promoters' substituted for foreign promoters, non-promoter institutions and non-promoter non-institutions respectively.

Hypothesis 3a. There is a significant relationship between the ownership by Indian promoters and tobin's q.

Hypotheses 3b-d. The hypotheses are on similar line as above with the words 'Indian promoters' substituted for foreign promoters, non-promoter institutions and non-promoter non-institutions respectively.

Tools for Analyses

The present study specifically attempts to measure the effect of ownership structure on performance of private sector non-banking listed companies in India. For the purpose, above mentioned hypotheses will be tested by using panel data econometrics for the 2000-01 to 2014-15 periods. Panel data is a method used to estimate the economic relationship with cross section series which has time dimension. The methodology adopted is justified because it allows overcoming the unobservable, constant and heterogeneous characteristics of individual firms and also the potential endogeneity (as corroborated by earlier studies) between dependent and independent variables. There are two panel data regression models (fixed effects model and random effects model) having different assumption for error term. Kohler and Kreuter (2005) stated that the rationale behind random effects model is — that unlike the fixed effects model, the variation across entities is assumed to be random and uncorrelated with the predictor or independent variables included in the model. Zhou (2001) has argued that fixed effect estimation is not necessary in terms of ownership, as the ownership structure, in general, does not vary over time for a specific firm. Therefore, the present study employed random effect model to analyse the relationship between ownership structure and firm performance. The multivariate regression model is represented as follows:

$$y_{it} = \beta_0 + \beta_1\ IP_{it} + \beta_2\ FP_{it} + \beta_3\ NPI_{it} + \beta_4\ NPNI_{it} + \beta_5\ Age_{it} + \beta_6\ Size_{it} + \beta_7\ Leverage_{it} + w_{it}$$

In which, y is the firm performance, i.e., ROA, ROE and Tobin's Q (TQ). β_0 is the constant term, $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ and β_7 are the parameters of the explanatory variables. IP, FP, NPI and NPNI are ownership variables and Age, Size and Leverage are control variables. w_{it} represents the composite error term and i and t denotes the number of firms and years respectively.

The above equation is estimated using Generalised Least Squares (GLS). STATA Version 9.2 has been used for the analysis.

5. Empirical Results and Analyses

Summary Statistics

Summary statistics of the variables employed in the empirical analysis are displayed in Table 1.

Table 1: Summary Statistics (N= 1335)

Variable	Mean	Std. Deviation	Min	Max
ROA	0.253	0.229	- 0.500	2.222
ROE	24.360	20.814	-15.1	231.48
TQ	4.256	5.168	0.144	50.630
IP	37.606	25.389	0	96.09
FP	11.840	21.724	0	75
NPI	25.970	13.681	0	77.6
NPNI	23.233	13.784	1.64	97.42
Age	43.06742	25.25364	2	118
Size	3.381	0.603	1.324	5.591
LEV	0.6483446	0.9685783	0	8.56

Summary statistics of all the variables employed in the empirical analysis are displayed in Table 1. It indicates the mean, standard deviation, minimum and maximum values of variables for 1335 firm year observations. The analysis of mean value clearly depicts that the stake of Indian Promoters (IP) was high (37.61%) during the study period. It means that on an average, the sample companies in India were dominated by Indian Promoter holdings and their stake. While the average foreign promoter (FP) holdings was just 11.84% during the study period, the average holdings of non promoter institution (NPI) was at 25.97% and the share of non-promoter non institutions (NPNI) was 23.23%.

Pair wise Correlations

Table 2: Pair wise correlation matrix (N = 1335)

	IP	FP	NPI	NPNI	AGE	SIZE	LEV
IP	1.0000						
FP	–0.6942	1.0000					
NPI	–0.4215	–0.0914	1.0000				
NPNI	–0.2910	–0.1730	–0.1522	1.0000			
Age	–0.3282	0.1754	0.2612	0.0655	1.0000		
Size	–0.1602	0.0128	0.0128	0.4852	–0.2901	1.0000	
LEV	0.1532	–0.2083	–0.1405	0.2002	–0.1138	–0.0915	1.0000

Pair wise correlations are reported in Table 2. Pair wise correlations among the explanatory variables can serve as a warning regarding multi-collinearity and against simultaneous inclusion of heavily correlated variables in the same regression. The highest pair wise correlation is that between Indian Promoter (IP) and Foreign Promoter (FP) at 0.6942, so problems arising from multi-collinearity are not envisaged[1].

Partial Correlation

Table 3: Partial correlation matrix (N = 1335)

	ROA	ROE	TQ
IP	0.114*** (0.000)	0.118*** (0.000)	0.104*** (0.000)
FP	0.176*** (0.000)	0.149*** (0.000)	0.161*** (0.000)
NPI	0.098*** (0.000)	0.149*** (0.004)	0.077*** (0.005)
NPNI	0.107*** (0.000)	0.149*** (0.001)	0.072*** (0.008)
Age	–0.013 (0.628)	–0.047** (0.090)	0.007 (0.788)
Size	0.0702** (0.011)	0.0855 *** (0.002)	0.107*** (0.000)
LEV	–0.195*** (0.000)	–0.096*** (0.000)	–0.157*** (0.000)

***(1% significance level), **(5% significance level)

Figures in brackets are p values

Table 3 presents the Pearson Correlation Coefficient between independent variables and dependent variables. It shows that all four independent variables namely, IP, FP, NPI and NPNI have significant positive correlation with each of the three dependent variables viz., ROA, ROE and TQ. Again out of three control variables, firm size has also significant positive correlation with ROA, ROE and TQ. All the above correlations are significant at 1% level of significance. However, leverage is

[1] Rule of thumb is that if the pair-wise correlation coefficient between two regressors is in excess of 0.8, then multicollinearity is a serious problem (Gujarati, 1995).

negatively correlated with all the measures of firm performance. Lastly, age has a negative correlation with ROE at 5% level of significance.

Regression Analysis

Table 4: Results of GLS Random Effect Panel Regression

Variables	*Model 1 ROA*	*Model 2 ROA*	*Model 3 ROE*	*Model 4 ROE*	*Model 5 TQ*	*Model 6 TQ*
IP	0.003* (0.070)	0.003* (0.089)	0.402** (0.025)	0.530** (0.003)	0.091** (0.028)	0.096** (0.019)
FP	0.006*** (0.002)	0.005*** (0.004)	0.519*** (0.004)	0.483*** (0.007)	0.161*** (0.000)	0.152*** (0.000)
NPI	0.006*** (0.004)	0.005** (0.016)	0.452** (0.014)	0.376** (0.041)	0.135*** (0.002)	0104*** (0.013)
NPNI	0.003 (0.113)	0.003* (0.088)	0.298* (0.091)	0.341* (0.055)	.0396 (0.330)	0.069* (0.089)
Age	–	–0.0001 (0.641)		–0.123** (0.045)		0.024* (0.101)
Size	–	0.017 (0.232)		3.056** (0.043)		1.43*** (0.000)
LEV	–	–0.028*** (0.000)		–2.051*** (0.000)		–0.470*** (0.000)
Constant	–0.150 (0.404)	–0.145 (0.432)	–15.526 (0.375)	–16.814 (0.354)	–5.491 (0.174)	–10.989*** (0.008)
Wald chi2	Wald chi2(4) =46.45 Prob > chi2 = 0.0000	Wald hi2(7) =91.56 Prob > chi2 = 0.0000	Wald chi2(4) = 19.22 Prob > chi2 = 0.0000	Wald chi2(7) = 45.14 Prob > chi2 = 0.0000	Wald chi2(4) =102.01 Prob > chi2 = 0.0000	Wald chi2(7) =156.32 Prob > chi2 = 0.0000
R-sq: within	0.0188	0.0488	0.0074	0.0270	0.0587	0.2133
between	0.2265	0.2755	0.1273	0.1318	0.2174	0.0964
overall	0.1328	0.1699	0.0638	0.0749	0.1466	0.1611
N =	1335	1335	1326	1326	1335	1335

***(1% significance level), **(5% significance level), *(10% significance level). Figures in brackets are p values

The results of random effect panel regressions are exhibited in Table 4. In model 1, the relationship between ownership structure (each for IP, FP, NPI and NPNI) were first tested as independent variable and firm performance ROA as dependent variable. Three variables (Age, Size and Leverage) were then entered as control variables in Model 2. The control variables were entered in this way so that the stability of the regression coefficients of the main independent variables could be assessed (Tsui et al., 1992).

The result shows that all the ownership variables are positively associated with the performance variable ROA in Model 1 but controlling for three variables in Model 2, the result failed to detect any effect of NPNI on firm performance.

Using the same approach, the effects of ownership structure on firm performance as measured by ROE was tested in Model 3 and Model 4. Result shows that all the ownership variables namely IP, FP, NPI and NPNI have significant positive impact on firm performance in both the models. In Model 5 and Model 6, the effect of ownership structure on firm performance as measured by Tobin's Q (TQ) was tested. Results show that IP, FP and NPI have a significant positive effect on TQ. However, NPNI did not show any significant relation with firm performance as measured by TQ in Model 5, but when the control variables are included in the regression equation in Model 6, the result shows a positive significant impact of NPNI on TQ. The results also show that leverage has a significant negative effect on performance while size has a positive effect on ROE and TQ but it has no significant effect on ROA. Again firm age has a significant negative effect on ROE but significant positive effect on TQ.

From the above analyses it reveals that the results are robust for Indian Promoters, Foreign Promoters and Non-Promoter Institutions with all the performance measures.

Overall, the results of the analyses indicate that all the ownership variables have a consistently significant effect on both market based performance measure (Tobin's Q ratio) and accounting based performance measure (ROA and ROE).Thus the results support hypotheses 1(a-d), 2(a-d) and 3(a-d).

6. Conclusion

The study has examined empirically the relationship between the ownership structure and firm performance using a balanced panel of BSE 200 Index firms over 2001 – 2015. We document that unobserved firm heterogeneity explains a large fraction of cross-sectional variation in firm performance that exists among Indian firms. From the results obtained we can conclude that there is a significant positive relation between ownership structure and firm performance. According to the result of research studies undertaken by Lal. C Chugh et al., (2011), Arora, Akshita (2010) and Douma et al., (2006), there is significant relationship between ownership structure and firm

performance. The present study also confirm the findings. However, there are studies undertaken by Aman Srivastava (2011), Karpagam, V. et al., (2013) and Kumar, J. (2004), who found that there is no significant relationship between ownership structure and firm performance. Different conclusions regarding the relationship between ownership and performance are partially owing to model specification and estimating technique applied. Single equation model, simultaneous equation model and panel data (both fixed effects and random effects) model report different results, because of their divergence of controlling for the endogeneity of ownership and unobserved heterogeneity of data (i.e., overcoming unobservable, constant and heterogeneous characteristics of individual firms). Possible reason for this disagreement might be that the corporate governance environment in which the firms are embedded has changed over time. Moreover, variable measurements and data issues could explain partially the discrepancies. Overall, the findings of this study put forward evidences in support of ownership structure as an effective corporate governance mechanism for enhancing financial performance of Indian firms.

7. Limitations and Future Research Direction

The following are the limitations of the study:

1. The study is based on secondary data and hence it is riddled with certain limitations which are bound to be connected with secondary data.
2. This study focused only on 89 companies of BSE 200 index.
3. The study considered the private sector non-financial companies only. Public sector, banking and financial companies have been excluded.
4. All the limitations associated with various tools like Descriptive Statistics and Panel Data. Regression Test is applicable to this study also.

The following issues have been felt to be explored further and hence been suggested for future research.

1. Future studies may further explore performance in relationship to other corporate governance specific variables (e.g. Board Size, Board Composition and CEO duality etc.)
2. Given the diversity of empirical works, clearly additional research is needed to further test both the nature and the consistency of the relationship between ownership structure and performance considering a larger sample size, including more control variables and in other developing economies also.
3. The study can be conducted to find out possible relationship between family ownership and corporate performance.
4. Further research can also include unlisted companies in the sample and compare the results between listed and unlisted companies.

5. Future research may investigate the ownership-performance relationship in respect of banking and finance companies.
6. Finally, this study proposes to explore other way relationship i.e. the impact of the performance measures on the ownership structure of the companies

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An Analysis of the Influencing Factors of Internal Financing in Indian Corporate Sector

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Abstract: The paper shows the role of influencing factors of internal funds in Indian corporate sector. There are seven major factors of internal financing which are Profitability, Rate of Dividend, Leverage, Debenture Interest, Age and Size of the company. A panel data multiple regression analysis has been framed to highlight the association between such factors and internal financing of the sample companies. We have selected 32 Non- Banking and Non- Finance public Ltd companies listed in NSE. From the study, we have found that Profitability, Leverage and Size of the company are positively associated with internal financing whereas Rate of Dividend has negative association with internal financing. Debenture Interest, Corporate income tax rate and Age of the Company are not significant determinants of internal financing.

Key-words: Internal financing, leverage, market rate of interest, company's size, panel regression.

1. Introduction

Internal Financing is the addition to the existing stock of funds of a corporate sector from year to year without raising them from external agencies. It is the utilization of internally generated funds for financing growth and expansion and / retirement of debt of the firm. It involves no cost of financing like flotation costs, negotiation, and periodical cash payments etc. The focus of this paper is to examine the factors which influence internal financing in the Indian corporate sector.

Theoretically, there are mainly seven factors which influence the internal financing of Indian corporate sector namely, (i) Profitability, (ii) Rate of Dividend, (iii) Leverage, (iv) Market rate of Interest of Debt Instrument, (v) Corporate income tax rate, (vi) Age and (vii) Size of the company.

(i) Profitability

Theoretical study reveals that profit after payment of tax and depreciation is a basic determinant of internal financing in Indian corporate sector. Profit in absolute terms reflects the ability of a company

to retain and increase internal financing as much as possible. So there is a positive association between profitability and internal financing in Indian corporate sector.

(ii) Rate of Dividend

In general, there is negative relationship between internal financing and rate of dividend of the companies in India. Companies must want to maintain the payout ratio as less as possible in order to maintain more amounts of retained earnings.

(iii) Leverage

Leverage means the ratio of total debt to total assets of the companies. It is a risk-measuring tool of the company. It highlights the amount of debt capital used by the company. Theoretical study reveals that there is a positive relationship between internal financing and leverage of the companies.

(iv) Interest on Debt Instrument

Interest on debt instrument signifies cost of debt financing of the Company. Theoretical study suggests that there is positive relationship between internal funds and cost of debt financing i.e. interest on debt instrument.

(v) Corporate Income Tax Rate

Profit available for dividend is grossly affected by corporate income taxes. Larger the corporate tax, smaller the profit after tax. When taxes are rising, the payout ratio tends to rise if the management is unwilling to reduce the dividend rates.

(vi) Age of the Company

Theoretical study suggests that there is negative relationship between internal financing and age of the companies. Very old and old companies owing to the fact of their large equity base, have free accession to capital and money market. On the other hand, in case of new companies, owing to the fact of the risk of their survival, find it difficult to obtain long term funds from capital market. So they are forced to lean heavily on retained earnings for their expansion and growth.

(vii) Size of the Company

According to the theoretical study, there is also negative relationship between internal sources of financing and size of the companies. Large companies owing to the fact of their large equity base, have free accession to money and capital market. They can also afford additional cost of financing involved in external financing.

2. Review of Literature

Braj Kishor (1980) in his study on 'Corporate internal finance: A study of overall trends and retentions', examined aggregate trends and retentions and determinants of corporate savings behavior for the period 1951-52 to 1973-74. He found that average annual retentions recorded a consistently rising trend during the period 1951-52 to 1973-74. In this study, retentions played an important role on

expenditure incurred on assets expansion. Determinants of corporate savings behavior in this study were profitability, dividend, and investment opportunities.

Daniel Creamer, Sergi P.Dobrovolsky, Israel Bornstein, Mertain Bernstein (1960) in their study on 'Internal and External financing', measured the trend of long term internal and external financing and different components of debt and equity components of external financing of manufacturing and mining industry. In their study, ratio of retained earnings to assets change showed an increasing trend in 1900-1919, and in 1919 - 1929 the ratio was relatively low.

Talat Afza (2010) in his study on 'Ownership structure and cash flow as determinants of corporate dividend policy in Pakistan', showed the relationship between size of the firm in Pakistan and dividend payout ratio, and found that it was negative during the period 2005 to 2007.

B.C. Purohit (1986) in his research study on 'Corporate savings behaviour-An econometric analysis', measured that during the period 1950-51 to 1979-80 the rate of corporate savings was highest in 1978-79 i.e. 23.9% and was lowest in the year 1952-53. This study also revealed that savings of private corporate sectors was very low compared to public and household sectors.

Hui S. Chang and Cheng F.Lee (1982), in their study on 'Interactions of dividend and investment decisions under different growth opportunities: A signaling theory approach', found that highest % of dividend payout ratio was for low growth firms compared to middle and high growth firms because they were interested to retain their earnings.

John Linter (1956) in his study on 'Distribution of Incomes of Corporations among Dividends, Retained earnings and Taxes', found that corporate dividend had been highlighted which had a significant bearing on the cyclical fluctuations of the economy. He also found that investment outlays are highly correlated with current earnings, sales volume and internal fund flow.

W.A. Adesola and A.E. Okwang (2009) in their study on 'An empirical study of dividend policy of quoted companies in Nigeria', found that dividend policy of 27 quoted companies in Nigeria was influenced by earnings and previous year's dividend, and as a result position of company's internal financing was affected by the payment of dividend.

Lingesiya (2012) in his study on 'Factors influencing company's Leverage: Evidence from Srilankan panel data', identified the factors which were influencing the financial leverage of 72 selected sample companies listed in Colombo stock exchange during the period 2006 to 2010. It was found that company's internal financing position was not affected by the age and size of the firm. Assets tangibility had negative relationship with the capital structure.

Haslindar Ibrahim and Tazul Ariffin Masron (2011) in their study on 'Capital structure and firm determinants: Evidence from small and medium Enterprises Malaysia', found that capital structure position of SMEs was affected by the determinants like size, profitability and liquidity and tangibility of the Malaysian companies. Moreover, there was also a negative relationship between profitability

and long term debt and as a result high profitable firms always choose lower amount of debt capital.

Karam Pal and Monika Verma (2009) in their study on 'Corporate capital structure: The case of Indian textile firms', found that the determinants like size, assets composition, profitability, non debt tax shield influenced the capital structure position of the leading forty firms of textile sector of India.

3. Research Gap

There is hardly any published literature on the relationship between profit and rate of retention on the part of the companies in Indian context. Another research gap identified is the absence of the determinants of internal sources of financing. How factors such as interest rate, corporate tax rate, age of the company and size of the company influence internal financing has not yet appeared in published form in Indian context.

4. Objectives of the Study

The objective of this paper is to analyse the impact of each factors mentioned above on internal financing in Indian corporate sector.

5. Research Methodology

The study is both exploratory and empirical in nature. We have selected 32 Non-Banking, Non-Finance Companies listed in National Stock Exchange (NSE) over the period of 2003-04 to 2012-13. It excludes PSUs. The empirical study is based on panel data analysis of 320 observations comprising 32 sample companies over 10 years. We have used STATA 11 statistical software to perform the analysis.

Table 1: List of Sample Companies listed in National Stock Exchange (NSE)

ACC cement	Dr. Reddy's Laboratories Ltd
Ambuja cements ltd	Cipla Ltd
Ultratech cement	Sesa Sterlite Ltd
Grasim Industries ltd	Hindalco Industries ltd
Hero motors corporation ltd	Jindal steel and power ltd
Bajaj Auto ltd	Tata steel ltd
Mahindra& Mahindra ltd	DLF Ltd
Maruti Suzuki ltd	Larsen& Tubro
Tata motors ltd	Wipro ltd

Bharat heavy electrical ltd	HCL technology
Reliance industries ltd	Tata consultancy service
Tata power	Infosys ltd
Bharti airtel ltd	United spirit ltd
Sun Pharmaceutical Industries Ltd	Asian paints Ltd
Ranbaxy Laboratories Ltd	Hindustan unilever ltd
Lupin Ltd	ITC ltd

Statistical techniques used

Multiple Regressions Analysis

- Panel Data Models :
  - Pooled Regression Model
  - Fixed Effect Model
  - Random Effect Model
- Model Selection Tests :
  i. Hausman Test (to choose between Fixed Effect and Random Effect Model)
  ii. Brush-Pagan LM Test (to choose between Pooled Regression model and Random Effect Model)

6. Analysis and Findings

In this section, we are highlighting the impact of each of the above-mentioned factors on internal financing in Indian corporate sector. For this purpose, a multiple regression analysis has been shown.

$$\mathbf{RET}_{it} = ß_0 + ß_1\mathbf{prof}_{it} + ß_2\mathbf{div}_{it} + ß_3\mathbf{Lev}_{it} + ß_4\mathbf{Int}_{it} + ß_5\mathbf{Tax}_{it} + ß_6\mathbf{Age}_{it} + ß_7\mathbf{Size}_{it} + \mathbf{e}_{it}$$

Here internal financing is taken as Retention ratio. So,

$\mathbf{RET}_{it}$ = Retention ratio of ith sample company at time t.

$ß_0$ = Constant regression coefficient.

$ß_1$ = Regression coefficient of % of profitability of ith company in time t ($\mathbf{prof}_{it}$).

$ß_2$ = Regression coefficient of rate of dividend of ith company of time t ($\mathbf{div}_{it}$) .

$ß_3$ = Regression coefficient of leverage of ith company of time t ($\mathbf{Lev}_{it}$).

$ß_4$ = Regression coefficient of rate of debenture interest of ith company in time t ($\mathbf{Int}_{it}$).

$ß_5$ = Regression coefficient of income tax rate of ith company in time t ($\mathbf{Tax}_{it}$).

$ß_6$ = Regression coefficient of log of number of years since the year of incorporation of firm i in time t ($\mathbf{Age}_{it}$).

$ß_7$ = Regression coefficient of log of total assets of firm i in time t ($Size_{it}$).

e_{it} = Standard error.

Concept of panel data analysis

We have previously stated that the study is based on panel data analysis. So, we have to show the three models of panel data analysis i.e. Pooled OLS Model, Fixed Effect Model and Random Effect Model of multiple regression analysis separately and finally choose the appropriate model.

Pooled OLS Model

Here we simply pool all observations and estimate a grand regression, neglecting the cross section and time series nature of our data.

$$RET_{it} = ß_0 + ß_1 prof_{it} + ß_2 div_{it} + ß_3 Lev_{it} + ß_4 Int_{it} + ß_5 Tax_{it} + ß_6 Age_{it} + ß_7 Size_{it} + e_{it}$$

Table 1: Pooled Regression Model of Multiple Regression Analysis between Internal Financing and Factors of Internal Financing of Sample Companies

Source	ss	Df	ms	
Model	2.77676379	7	0.396680542	Number of obs = 320
Residual	16.4743413	312	0.052802376	F(7, 312) = 7.51
Total	19.2511051	319	0.060348292	Prob > F = 0.000*
				R- Squared = 0.1442
				Adj R- Squared = 0.1250
				Root MSE = 0.22979

Retentions	Coef.	Std. Err.	t	P>|t|	[95% conf.	Interval]
Profitability	0.2332559	0.1106868	2.11	0.036*	0.015469	0.4510429
Dividend	-0.0090767	0.0039938	-2.27	0.024*	-0.0169348	-0.0012186
Leverage	0.27066	0.0684593	3.95	0.000*	0.1359597	0.4053604
Debenture Interest	0.0043693	0.0171066	0.26	0.799	-0.0292895	0.0380282
Corporate income tax rate	0.0070773	0.6190033	0.01	0.991	-1.210871	1.225026
Age	-0.0715699	0.0553197	-1.29	0.197	-0.1804167	0.037277
Size	0.1409134	0.0255426	5.52	0.000*	0.0906559	0.1911709
_cons	0.1542618	0.2788	0.55	0.580	-0.3943042	0.7028277

*Significance level=5%

Pooled OLS Model ignores heterogeneity that may exist among the companies over time. So, for the time being we will not accept this model.

Fixed Effect Model

In this model, we pool all 320 observations, but allow each cross section unit (i.e. Company in our example) to have its own (intercept) dummy variable.

$$RET_{it} = ß_{0i} + ß_1 prof_{it} + ß_2 div_{it} + ß_3 Lev_{it} + ß_4 Int_{it} + ß_5 Tax_{it} + ß_6 Age_{it} + ß_7 Size_{it} + e_{it}$$

Table 2: Fixed Effect Model of Multiple Regression Analysis between Internal Financing and Factors of Internal Financing of Sample Companies

Fixed - effects (within) regression Group Variable: Company R- Sq : within = 0.1204 between = 0.1115 overall = 0.1138 corr(u_i, Xb) = -0.0929	Number of obs = 320 Number of groups = 32 obs per group: min = 10 avg = 10.0 max = 10 F (7, 281) = 5.50 Prob > F = 0.0000*

Retentions	Coef.	Std. Err.	t	P>|t|	[95% conf.	Interval]
Profitability	0.4411468	0.1152196	3.83	0.000*	0.2143437	0.6679499
Dividend	-0.0182334	0.0061009	-2.99	0.003*	-0.0302427	-0.006224
Leverage	0.1540857	0.0781184	1.97	0.050	0.0003142	0.3078573
Debenture Interest	0.0233484	0.0160342	1.46	0.146	-0.0082141	0.0549109
Corporate income tax rate	-0.1923782	0.6416509	-0.3	0.765	-1.455431	1.070674
Age	-0.0976012	0.4600325	-0.21	0.832	-1.003149	0.8079461
Size	0.1217612	0.036463	3.34	0.001*	0.0499858	0.1935365
_cons	0.3317773	0.8818916	0.38	0.707	-1.404175	2.06773
sigma_u	0.15964728					
sigma_e	0.18120906	(fraction of variance due to u_i)				
rho	0.43699446					
F test that all u_i =0: F(31, 281) = 7.12 Prob > F = 0.0000						

*Significance level = 5%

'or the time being, we cannot accept fixed effect regression model. Now we will switch over to 'andom effect model or Error Components model.

'andom Effect Model

n Random Effect Model, the intercept values are random drawing from a much bigger population 'f companies.

$$RET_{it} = ß_0 + ß_1 prof_{it} + ß_2 div_{it} + ß_3 Lev_{it} + ß_4 Int_{it} + ß_5 Tax_{it} + ß_6 Age_{it} + ß_7 Size_{it} + w_{it}$$

'able 3: Random Effect Model of Multiple Regression Analysis between Internal Financing nd Factors of Internal Financing of Sample Companies

Random - effects GLS regression	Number of obs = 320
Group Variable: Company	Number of groups = 32
R- Sq : within = 0.1189	obs per group: min = 10
between = 0.1384	avg = 10.0
overall = 0.1270	max = 10
Random effects u_i ~ Gaussian	Wald chi2(7) = 5.50
corr(u_i, X) = 0 (assumed)	Prob > chi2 = 0.0000*

	Coef.	Std. Err.	z	P>|z|	[95% conf.	Interval]
Profitability	0.4009937	0.1090993	3.68	0.000*	0.187163	0.6148245
Dividend	-0.0156035	0.0051859	-3.01	0.003*	-0.0257676	-0.0054394
Leverage	0.1857354	0.071115	2.61	0.009*	0.0463526	0.3251182
Debenture Interest	0.0204768	0.0155739	1.31	0.189	-0.0100475	0.0510011
Corporate income tax rate	-0.1029976	0.5351729	-0.19	0.847	-1.151917	0.945922
Age	-0.0555865	0.1167017	-0.48	0.634	-0.2843177	0.1731447
Size	0.128086	0.0305981	4.19	0.000*	0.068115	0.1880571
_cons	0.2049428	0.3379733	0.61	0.544	-0.4574728	0.8673583
sigma_u	0.1521558					
sigma_e	0.18120906	(fraction of variance due to u_i)				
rho	0.41350565					

*Significance level= 5%

Table 4: Selection between Fixed Effect and Random Effect Model: The Hausman Tes

	Coefficient			
	Fixed	Random	Difference	S.E.
Profitability	0.4411468	0.4009937	0.0401531	0.0370525
Dividend	-0.018233	-0.0156035	-0.0026299	0.0032137
Leverage	0.1540857	0.1857354	-0.0316496	0.0323287
Debenture				
Interest	0.0233484	0.0204768	0.0028716	0.0038145
Corporate income tax rate	-0.192378	-0.1029976	-0.0893805	0.3539856
Age	-0.097601	-0.0555865	-0.0420147	0.4449838
Size	0.1217612	0.128086	-0.0063249	0.0198321

chi2 (7) = 3.89

Prob>chi2 = 0.7925 (Level of Significance = 5%)

Since p value is not significant at 5% level of significance, so we accept Random Effect Model t Fixed Effect.

Now, we will move to Breusch and Pagan Lagrangian Multiplier Test to choose Pooled OLS Model and Random effect Model.

Table 5: Selection between Pooled Regression Model and Random Effect Model

Breusch and Pagan Lagrangian multiplier test for random effects

Retentions [Company] = Xb + u [Company] + e [Company]

Estimated results:

	Var	sd = sqrt (Var)
Retentions	0.060348	0.2456589
e	0.060348	0.1812091
u	0.023151	0.1521559

Test: Var (u) = 0

chi2 (1) = 185.55

Prob > chi2 = 0.0000 (Level of Significance = 5%)

Since p value is significant at 5% level of significance, so we will finally accept the Random Effect Model.

Table 3 exhibits that Random Effect Model is significant at 5% level of significance. Wald chi2 (7) = 5.50 which is also significant. The R square value is 12.7%, which signifies only 12.70% of Internal Financing is affected by the factors. Moreover, we have also observed that out of 7 factors of Internal Financing, only 4 factors are significant at 5% level of significance.

Since the regression coefficient between Internal Financing and Profitability is 0.4009937 which is significant at 5% level of significance, so there is positive association between Internal Financing and Profitability of sample companies.

Moreover, the regression coefficient between Internal Financing and Rate of Dividend is -0.0156035 which is significant at 5% level of significance, so there is negative relationship between Internal Financing and Rate of Dividend of sample companies.

Regression coefficient between Internal Financing and Leverage is 0.1857354, which is significant at 5% level of significance, so there is positive association between Internal Financing and Leverage of sample companies.

Regression coefficient between Internal Financing and Size of the company is 0.128086 which is significant at 5% level of significance, so there is positive association between Internal Financing and Size of the sample company.

Finally, we have observed that Debenture Interest, Corporate Income Tax Rate and Age of the company are not significant determinants of internal financing.

7. Conclusions

On the basis of our study, it is to be concluded that out of seven influencing factors of internal financing considered in our study, only Profitability, Rate of dividend, Leverage and Size of the company have significant impact on internal financing in Indian corporate sector. Rest of the factors are not significant determinants of internal financing.

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Real Estate Investment Trusts – Towards a New Era in Indian Real Estate Sector

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Abstract: Indian capital market has seen a considerable number of reforms in recent times. But the one that has attracted the attention of many academicians and market players is the much expected launch of Real Estate Investment Trusts (REITs). REITs are being considered to be the oxygen for the capital starved real estate sector in India apart from creating a new class of investment product with numerous benefits. In this article, a sincere effort has been made to assess the worth of such speculations by a careful analysis of the conceptual aspects of REITs along with its current state and recent performance worldwide. The article has also tried to summarize the recent regulatory changes in this respect to justify how far they can be helpful in promoting the REITs. Additionally, the article has also attempted to analyze the scope and challenges of REITs in India.

Key-words: Real Estate Investment Trust (REIT), sponsor, special purpose vehicle (SPV), dividend tax.

1. Introduction

Indian capital market has seen a considerable number of reforms in recent times. But the one that has attracted the attention of many academicians and market players is the much expected launch of Real Estate Investment Trusts (REITs). REITs are being considered as the oxygen for the capital starved real estate sector in India apart from creating a new class of investment product with numerous benefits. In this article, a sincere effort has been made to assess the worth of such speculations by a careful analysis of the conceptual aspects of REITs along with its current state and recent performance worldwide.

2. Concept of REIT

REITs are basically companies/ trusts that own or finance and, in most of the cases, operate large income producing real estate. Designed in line with mutual funds, REITs provide the investors with a more or less stable income stream in form of dividends as well as long term capital appreciation, apart from offering adequate diversification for their portfolio. REITs sell their units to investors and build portfolios of large scale income producing properties. The investors, in turn, get a share of such income without actually owning the properties. Thus REITs allow the investors to enjoy the

high return potential of the rapidly growing real estate sector at a moderate level of risk as compared to any direct investment in the same sector.

3. Origin and Evolution of REITs

The origin of REITs can be traced back in 1960 in United States when President Dwight D. Eisenhower signed into legislation REIT Act under the Cigar Excise Tax Extension. REITs were created by the Congress with the intention of providing the investors better opportunities to enjoy the benefits of real estate investments in a manner which combines the best attributes of real estate and stock based investment. During its early days, REITs primarily consisted of mortgage companies only. Subsequently the industry saw significant expansion and growth in the late 1960s and 1970s thanks to the use of mortgage REITs in land development and construction deals in US. Another catalyzing factor was the US Tax Reform Act of 1976 which allowed REITs to be established as companies in addition to business trusts. Among the early adopters of this concept was Australia. The first REIT launched in Australia was General Property Trust in 1971. In 1990s a number of developed countries of Asia, Europe and North America joined the bandwagon. Canada (1993), Brazil (1993), Belgium (1995) were some of them who experimented with REITs during this period. Even Ghana of Africa also tried with the concept of REITs in those days. In the early years of this century REITs were further adopted by Nigeria, Hong Kong, Japan, UAE, Saudi Arabia, Bulgaria, France, Germany and most importantly UK (2007).

Table 1: A Few among the First Movers:

Country	Legislation Introduced	First REIT /Launched by	Launched In
Australia	1971	General Property Trust	1971
Ghana	1993	Home Finance Company	August 1994
Belgium	1995	Bemheim Comfi (Now AG Real Estate)	1995
Hong-Kong	2005	Link REIT	2005
Nigeria	2007	Union Home Hybrid REIT	September 2008

4. Types of REITs

REITs can be classified into three types – Equity REITs, Mortgage REITs and Hybrid REITs.

- *Equity REITs*: Equity REITs invest their corpus to own, develop and then operate income producing real estate. Since their operation primarily includes leasing or tenancy services, they earn revenues from property rentals.
- *Mortgage REITs*: These REITs do not own properties. They either lend money directly to the real estate owners and operators or extend credit indirectly by purchasing existing

mortgages or mortgage backed securities (MBS). Hence their revenues primarily come from the interest they earn on such mortgages or mortgage backed securities.

- *Hybrid REITs*: These REITs are a combination of both Equity and Mortgage REITs. They combine the investment strategies of both forms.

5. Purpose of REITs

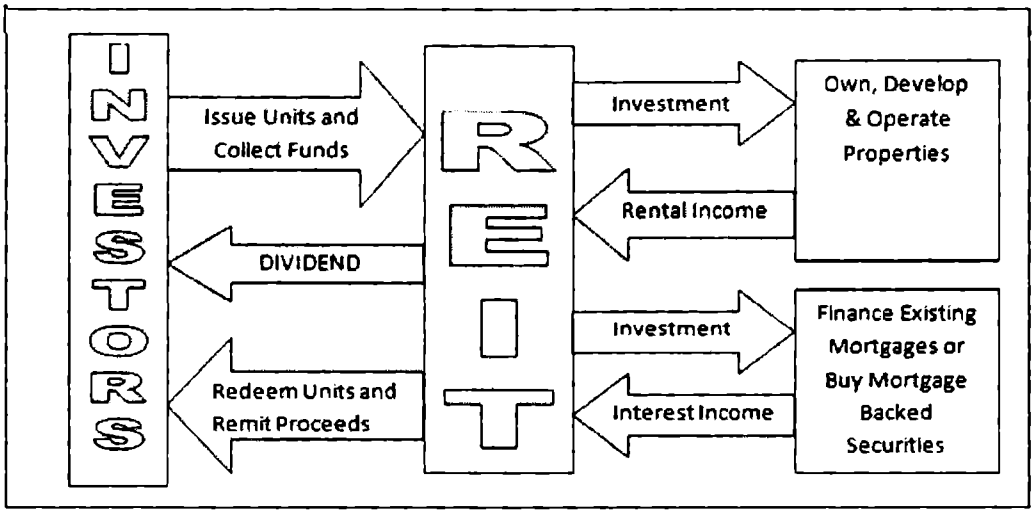
REITs serve twofold purposes as follows:

- In every economy real estate sector including infrastructure is considered to be a vital agent of growth. However this sector often requires large investments which may be difficult to arrange for a single corporate house even after significant debt syndication. REITs are an appropriate solution for the capital starved real estate sector.
- REITs provide an attractive investment opportunity by offering stable regular income in the form of dividend along with long term capital appreciation and adequate scope for portfolio diversification. In addition it insulates the investment portfolio form inflation.

6. Modus Operandi of REITs

REIT largely resembles a mutual fund in its operation. It issues shares or units to investors and collect funds. Such corpus is then invested to buy and develop income producing real estate (in case of Equity REIT) or to finance existing mortgages and mortgage backed securities (in case of Mortgage REIT). The revenue earned from the above investments is distributed to the unit holders in form of dividend. The operation can be schematically shown in the following diagram.

Figure 1: Operation of REITs



7. Basic Structure of REITs

The structure of REITs differs from country to country. However the following basic features can be seen in all the REITs:

- These are typically established as corporations and managed by a team of executive managers under the guidance of the Board of Directors. However in some countries REITs are allowed to be established as trust.
- They primarily invest in domestic real estate sector. However in some cases they may be allowed to hold foreign assets.
- They invest majority (even 80% in some cases) of their corpus in specified categories of real estate properties.
- The principal component of revenue must be income related to real estate.
- They must distribute most of their taxable income to shareholders or unit holders in form of dividend.
- They normally enjoy a pass through tax structure. Hence they are exempted from tax. However dividend from REITs may be taxable in the hands of the unit holders.
- The shares or units of REITs are transferable. Hence they ensure adequate liquidity of investment.

8. Major Attributes of REITs

Apart from ensuring steady flow of large capital for the real estate sector to catalyze growth, REITs have a number of other attributes that has made it a popular investment vehicle across the world.

- ***Regular Income*:** REITs offer a stable and regular source of income for the investors. REITs' reliable income is derived from its investments in real estate either through long term lease agreements or from financing long term mortgages and MBS. So, with increasing property occupancy rates and rents over time, REITs may produce higher levels of income which is regularly distributed to the investors.
- ***Diversification*:** Diversification reduces risk of the portfolio by combining assets which behave differently across the market conditions. REITs show significantly low correlation with other investment alternatives and hence qualify as a better option to ensure effective diversification of the investment portfolio.
- ***Complementary to Direct Investment*:** Direct investment in real estate sector is considered to be hazardous by investors due to various regulatory compliances. REITs provide an indirect approach to invest in real estate sector with better asset allocation based on expert advice. Hence these are complementary to direct investment in real estate.

Inflation Protection: Investing in commercial real estate provides a natural protection against inflation. This is because rents are also likely to increase when price level increases. Thus REITs, especially Equity REITs, whose revenue comprises mostly rental income, can be a good investment alternative to insulate the portfolio from inflation.

Liquidity: Most of the REITs across the world are public REITs listed in a recognized stock exchange of the concerned country. Shares or units of REITs can be easily bought and sold in the stock market like any other ordinary stock.

Tactical Asset Allocation: Tactical asset allocation requires investors to capitalize on short term market movements by either increasing or lowering investment in a particular asset class or employ a sector specific strategy by targeting a particular property type. Highly liquid REITs allow investors the right kind of flexibility to engage in tactical asset allocation.

Portfolio Rebalancing: Portfolio rebalancing is the process of aligning the actual allocation with the target allocation at times when actual allocation deviates from the desired target due to market fluctuations in the specific asset class. Due to its high liquidity REIT investment is the easiest way to efficiently rebalance real estate allocation in the event of unfavourable market conditions.

Transparency: REITs are highly transparent in their operation. This transparency issue can be taken up in three ways namely tax, market operations and corporate governance.

- Normally, REITs are exempt from tax in exchange of paying strong and consistent dividend to investors and in turn taxes are paid by the investors. So REITs need not undertake any tax minimizing activities and hence are tax transparent.
- Public REITs are compulsorily listed in stock exchanges and consequently subject to strict market regulations. Moreover they are also to abide by local GAAP/IFRS in accounting and specific reporting requirements. All these make REITs extremely transparent so far market operations are concerned. Thus REITs are valued close to their intrinsic value, which in turn guides the investors in taking appropriate decisions.
- Since REITs are generally promoted as corporations, they are subject to corporate governance norms of the host country. Hence REITs are reported to be less prone to organized frauds and interest of all stakeholders is well protected.

Performance: Historically, REITs are found to yield healthy long term returns. In many situations, they are found to beat the broad indices. Moreover, they often exhibit higher Sharpe Ratio which means they have higher risk adjusted returns as compared to other market alternatives.

9. Current State and Performance of REITs across the World

As reported by European Public Real Estate Association (EPRA), currently, publicly listed REITs exist in more or less 37 countries spread over all major continents. Apart from public REITs there are also private REITs which exist in many countries including a few of the countries already mentioned (e.g. USA). However, details relating to the private REITs are not available. In spite of that, the information regarding public REITs is enough to understand the reach and success of REITs across the world.

***REITs in Europe*:**

Current State and Structure: According to EPRA[1] Global Survey, REITs exist (or just initiated) in 16 European Countries. These are Netherland, Belgium, Greece, Turkey, Bulgaria, France, Germany, Ireland, Italy, United Kingdom, Finland, Hungary, Israel, Lithuania, Luxemburg and Spain. All these 16 countries together have around 200 listed REITs of which Bulgeria is in a leading position with 53 REITs followed by UK (36) and France (32). However UK has the highest number of REITs (23) featuring in the FTSE[2] EPRA/NAREIT[3] Global Index with 4.58% of index weights. UK also leads the chart in terms of market capitalization of listed REITs (EUR 56.585 million) followed by France (EUR 49.357 million).

Regarding structure, European REITs share a few common characteristics.

- In most of these countries REITs are allowed to be established only as Joint Stock Companies or Public Limited Companies except France and Belgium which allows Limited Liability Partnerships (LLPs) and Netherland and Lithuania which allows both LLPs and mutual funds.
- In all these countries REITs must conform to the minimum capital requirement.
- Except Lithuania and Netherland listing is also mandatory in all other countries.

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[1] Founded in 1999, EPRA (European Public Real Estate Association) is a not-for-profit association registered in Belgium. The association is governed by an Advisory Board, which delegates some of its functions to a Board of Directors. EPRA activities reflect its mission to promote, develop and represent the European public real estate sector.

[2] FTSE and Russell Indexes are global indices. FTSE Russell indexes are trusted by investors in every corner of the world to measure and benchmark markets across asset classes, styles or strategies.

[3] NAREIT®, the National Association of Real Estate Investment Trusts®, is the worldwide representative voice for REITs, or Real Estate Investment Trusts, and publicly traded real estate companies with an interest in U.S. real estate and capital markets.

- All of these countries require REITs to distribute 80% to 90% of their current income to the shareholders. Even Netherland requires 100% distribution.
- Capital gain is also distributable either separately (in France, Germany, Israel and Spain) or as a part of current income (in Bulgaria, Hungary and Turkey).
- Except Greece, everywhere REITs are exempt from tax on eligible operating income and on any capital gain arising on sale of asset. In turn, dividend received from REITs is taxable in the hands of the shareholders.
- REITs of almost all countries are compulsorily required to invest in real estate. Direct real estate investment outside the domicile is also allowed except in Bulgaria. However, Netherland allows only portfolio investment.
- Except for France, Spain, Turkey, Lithuania, Germany and Finland all other countries require REITs to follow IFRS for accounting. REITs of these countries follow local GAAP.

Table 2: Structure of REITs in Europe (Top 6 Countries based on Market Capitalization)

Specifications	Countries					
	UK	**France**	**Netherland**	**Belgium**	**Turkey**	**Italy**
REIT Code	UK-REIT	SIIC	FBI	SICAFI/SIR	REIC	SIIQ
Enacted Year	2007	2003	1969	1995/2014	1995	2007
No. of REITs	36	32	5	17	30	3
Participant in EPRA/NAREIT Index	23	8	5	7	4	2
Sector Mkt Cap.(in Million)	EUR 56.585	EUR 49.357	EUR 29.124	EUR 11.027	EUR 6.763	EUR 2.172
% of Global REIT Index	4.58	1.93	2.64	0.57	0.19	0.08
Legal Form	Listed Co.	Joint stock co., LLP	Ltd. Co., Mutual Fund	Ltd. Co, LLP	Joint Stock Co.	Joint Stock Co.
Mandatory Listing	Yes	Yes	Yes	Yes	Yes	Yes

Minimum Share Capital	50000 lbs.	EUR 15 million	EUR 45000 million (for Public Ltd. Co.)	EUR 1.25 million	TRY 30 million	As per listing requirement
Distribution of Current Income	90% of rent, 100% of Dividend	95% of tax exempt profits, 60% of capital gain	100% of profits	80% of profits	Left to REICs	70% of leasing income, 50% of capital gain
Frequency	Within 12 months from year end	Profit within next tax year, capital gain within second tax year	Within 8 months from Financial Year end	Annually	Annually or Quarterly	Annually for profit, two years for capital gain
Tax at REIT Level	Rental Income and Cap. Gain-Exempted	Income and Cap. Gain-Exempted	Income and Cap. Gain-Exempted	Income and Cap. Gain-Exempted	Income and Cap. Gain-Exempted	Income-exempted, Cap. Gain-Taxable
Accounting Rule	IFRS	French GAAP	IFRS	IFRS	Local GAAP	IFRS

Source: EPRA Global Survey on REITs (September 2016)

Performance of REITs: The overall performance of publicly listed REITs is quite impressive during the last 5 years. Both FTSE Europe and FTSE EPRA/NAREIT Europe index show 10-15% returns during 1-5 year time horizon. The 3 year return is however below 10% on both indices whereas last 12 months return was 16.5% on FTSE Europe index. Among last 5years the return was the highest in 2012. The volatility of returns is unfortunately quite significant.

Table 3: Return on FTSE EPRA/NAREIT Europe and FTSE Europe

Indices	Return %			Year on Year Total Return%					Volatility	
	12 M	3 YR	5 YR	2012	2013	2014	2015	2016	3YR	5 YR
FTSE EPRA/ NAREIT Europe	1.8	9.9	14.7	29.3	9.8	24.7	18.1	-4.4	18.8	13.5
FTSE Europe	16.5	7.4	13.3	18.6	19.3	6.4	9.0	4.1	18.3	11.3

Source: FTSE Factsheet (as on 31.05.2017)

***REITs in Asia-Pacific*:**

Current State and Structure: The EPRA Global Survey identified significant presence and /or potential of REITs in 13 countries including Australia in the Asia-Pacific zone. These are Australia, Dubai, Hong-Kong, Japan, Malaysia, Singapore, South Korea, Taiwan and Thailand, Pakistan, India and Philippines (though market is yet to take off in India and Philippines). Together these countries (excluding India) have more than 260 REITs of which 62 REITs are part of the EPRA/ NAREIT® Global Index. In terms of market capitalization of listed REITs, Australia holds the leading position with a market capitalization of EUR 106.458 million, followed by Japan (EUR 102.695 million) and Singapore (EUR 51.236million.). Australia also shares 7.47% weight in global index followed by Japan (7.43%) and Singapore (1.68%).

Regarding structure, one important deviation is seen among Asia-Pacific REITs. Except Philippines, South Korea and Japan (which allow only companies) all other countries in this zone requires REITs to be established as a trust. Thailand also allows mutual fund structure for REITs. Another important deviation is that Thailand, Australia, Malaysia, Japan, Taiwan and New Zealand do not require compulsory listing of REITs. Other aspects are, however, similar to that of European REITs.

Table 4: Structure of REITs in Asia-Pacific (Top 4 Countries based on Market Capitalization)

Specifications	Countries			
	Australia	Japan	Singapore	Hong-Kong
REIT Code	Unit Trust	J-REIT	S-REIT	HK-REIT
Enacted Year	1985	2000	1999	2003
No. of REITs	61	56	44	13

Participant in EPRA/NAREIT Index	13	33	9	3
Sector Mkt Cap. (in Million.)	EUR 106.458	EUR 102.695	EUR 51.236	EUR 28.828
% of Global REIT Index	7.47	7.43	1.68	1.58
Legal Form	Trust	Corporation	Trust	Unit Trust
Minimum Share Capital	$1	JPY 100 million.	SGD 300 million	Not specified
Mandatory Listing	No	No	No	Yes
Distribution of Current Income	100%	More than 90%	At least 90%	90%
Frequency	Annual/ Semi Annual	Same tax year	Annual/Semi-Annual/Qtrly	Annually
Tax at REIT Level	Income - Taxable Capital Gain- Exempted	Income and Capital Gain- Taxable	Income and Capital Gain- Exempted	Income and Capital Gain- Exempted
Accounting Rule	IFRS	J-GAAP	GAAP	Local GAAP

Source: EPRA Global Survey on REITs (September 2016)

Performance of REITs: Asia-Pacific REITs exhibit moderate long term performance. Five year return on both EPRA Asia and FTSE Asia Indices are just below 10% whereas 3 year returns are 4% and 5.7% respectively. Year on year comparison shows that the returns were the best in 2012 and were negative in 2015. In 2013 also the return on EPRA index is not impressive (1.3% only). Volatility also seems to quite high.

Table 5: Return on FTSE Asia Pacific and FTSE EPRA/NAREIT Asia Pacific Index

Indices	Return %			Year on Year Total Return%					Volatility	
	12 M	3 YR	5 YR	2012	2013	2014	2015	2016	3YR	5YR
FTSE EPRA/ NAREIT Asia-Pacific	14.4	4	9.3	48.1	1.3	2.1	-4.6	3.7	13.7	14.4
FTSE Asia-Pacific	21.3	5.7	9.5	17.5	11.8	0.7	-0.8	5.6	14	11.8

Source: FTSE Factsheet (as on 31.05.2017)

REITs in North and South America:

Current State and Structure:

- USA: As of September 2016, USA has 220 publicly listed REITs of which 130 are part of the EPRA/NAREIT® Global Index. The number includes both equity and mortgage REITs. The market capitalization of all these listed REITs amounts to EUR 986.770 million and its share in the Global index is 65.19%.

  So far as the structure is concerned, USA allows only companies to form REITs. However REITs may be public or private and listing is not mandatory. Moreover there is no minimum capital requirement.

- Other Countries: Among other countries of America are Brazil, Canada, Mexico, Costa Rica, and Puerto Rico. Among these 5 countries Brazil tops the list with 198 REITs. Canada has 46 REITs of which 17 are included in the Global index. Mexico has only 13 REITs. In terms of market capitalization, however, Canada is the leader with a capitalization of EUR 41.180 million followed by Mexico with EUR 14.261 million.

  Regarding structure, Brazil allows REITs to be set up only as Mutual Funds whereas Mexico requires REITs to be trust only. Costa Rica and Puerto Rico allows both the forms. Except Canada and Costa Rica, others do not require mandatory listing of REITs. The tax structure is pass-through type and REITs mostly follow local GAAP.

Table 6: Structure of REITs in America (Top 3 Countries in Market Capitalization)

Specifications	Countries		
	USA	**Brazil**	**Canada**
REIT Code	REIT	FII	MFT
Enacted Year	1960	1993	1994
No. of REITs	220	198	46
Participant in EPRA/ NAREIT Index	130	N/A	17
Sector Market Cap. (in Million.)	EUR 986.770	BRL 68	EUR 41.180
% of Global REIT Index	65.19	N/A	2.95
Legal Form	Company	Fund	Unit Trust
Mandatory Listing	No	No	Preferable
Minimum Share Capital	No minimum capital	Not Specified	No
Distribution of Current Income	90%	At least 95%	100%
Frequency	Annual	Every six months	Annual
Tax at REIT Level	Income and Capital Gain exempted if distributed	Income and Capital Gain-exempt	Income and Capital Gain-Exempted
Accounting Rule	US GAAP	Local GAAP	IFRS

Source: EPRA Global Survey on REITs (September 2014)

Performance of REITs: Returns on REITs in America, are not quite remarkable during the last few years. The 3 and 5 year returns are well below 10% for EPRA America Index. For FTSE America Index the figures are relatively lucrative i.e., 8.7% and 13.9% respectively. The year on year performance shows that except for 2013 EPRA index produced positive returns in all the years and the performance was pretty impressive in 2014. Similar results are available for FTSE index except for the year 2015. Unfortunately 3 and 5 year volatility are quite high indicating that the returns were not stable.

Table 7: Return on FTSE America, FTSE EPRA/NAREIT America and FTSE USA

Indices	Return %			Year on Year Total Return%					Volatility	
	12 M	3 YR	5 YR	2012	2013	2014	2015	2016	3 YR	5 YR
FTSE EPRA/ NAREIT Americas	1.8	6	8.3	17.7	-0.7	26.2	0.7	8.2	15.0	13.5
FTSE Americas	17.5	8.7	13.9	15.4	28.2	11.6	-1.3	12.8	12.2	9.6

Source: FTSE Factsheet (as on 31.05.2017)

***REITs in Africa*:**

Current State and Structure: Though Ghana was the first among African countries to launch REITs way back in 1994 followed by Nigeria in 2008, REITs were not very successful in Africa, until 2013 when South Africa came up with REITs. Currently South Africa has 34 REITs of which 10 are the part of EPRA index. The market capitalization of these REITs is EUR 26.797 million with 1.46% share of the Global Index. REITs in Africa are set up as a company or a trust with a minimum capital of R 300 million in case of company REITs. These are required to be compulsorily listed and must adhere to specific investment restrictions. Moreover, they are required to distribute at least 75% of the current taxable income. Both REITs and shareholders are taxed separately for income. Undistributed income is taxable @ 28%, though capital gain is exempt.

Performance of REITs: The return on REITs in Africa is also not remarkable. The three year return is only 2.1% on FTSE EPRA/NAREIT Middle East and Africa index and even negative on FTSE Middle Eass[4] and Africa. However, the five year returns are relatively well placed. However, the associated volatility is also significant. The year on year performance shows that except for 2015 EPRA index produced positive returns in all the years. The performance of immediately previous year was also pretty impressive. Similar results are available for FTSE index except for the year 2015.

[4]FTSE EPRA/NAREITIndex is available for Africa and Middle East in a combined form only.

Table 8: Return on FTSE EPRA/NAREIT Middle East and Africa and FTSE Middle East and Africa

Indices	Return %			Year on Year Total Return%					Volatility	
	12 M	3 YR	5 YR	2012	2013	2014	2015	2016	3 YR	5 YR
FTSE EPRA/ NAREIT Middle East and Africa	20.4	2.1	11.7	33.2	10.5	15	-15.3	25.1	24.5	21.6
FTSE Middle East and Africa	14.5	-1.6	4.4	17.6	0.8	8.6	-17.4	8.6	21.1	15.8

Source: FTSE Factsheet (as on 31.05.2017)

Thus, globally REITs are struggling a bit during the last few years as evident by its mixed results across the world. This is mainly due to the Greece debt crisis, China's subdued economic situation and the gradual recovery in the USA. However that does not outweigh its potential as an alternative investment product for the investors or a successful investment vehicle to help the real estate sector to procure its capital at ease.

10. Problems of Indian Real Estate Sector and REITs as a Game Changer

Indian real estate sector has traditionally been unorganized. It is only after the reform measures in nineties that the sector is moving towards being an organized one. Unfortunately the transition is far from satisfactory for a number of reasons. In India, there is lack of clear land titles, in many states land holdings are fragmented, brokers often buy and sell properties out of their own investment causing unnecessary surge in property prices, approval process is too cumbersome and time consuming and input costs are too high. What adds to this is the lack of structured financing options for the developers which, perhaps, is the biggest concern for the players in this sector.

Truly speaking, in Indian real estate sector, bank financing is sporadic in nature due to the high risk involved in projects. Thus there is severe shortage of risk capital in the sector and most of the capital that comes in is in the nature of mezzanine finance which involves high cost of servicing. As a result, the profits of the large players in this sector are subject to high volatility, especially during economic downturn. It is in this juncture REITs can be a saviour for the sector.

REITs, being pure equity capital, can surely help the developers to maintain a debt-equity balance in financing new projects. These will also provide the developers with institutional capital and liquidity of investment. Developers can be able to sell their assets to REITs and utilize funds

either for new projects or to pair off bank financing. Moreover, the developers can have the access to public markets through IPOs and FPOs with long term finance option. Moreover capital allocation towards REITs is gaining momentum internationally. With efficient tax framework in favour of non-residents and foreign investors, if this global capital can be channelized into India, it will be of great help for this capital starved industry. However, for this, investment in REITs must be attractive and with regular income flow, opportunity of price appreciation with surge in property prices and additional option for diversification, the product is believed to be best suited for most of the investors.

11. Launching REITs in India

Considering the benefits of REITs and the hardships faced by Indian real estate sector to meet financing requirements, Indian regulators were also interested to introduce REITs in India. Consequently SEBI issued draft guidelines in 2008. However, due to certain structural limitations and rigid tax rules the regulations were never finalized. Finally SEBI came up with a revised set of guidelines in 2013 which are in line with the global practices. With adequate and prompt response from the Central Government, this revised guideline has finally been notified as SEBI (Real Estate Investment Trust) Regulations 2014 (effective from the date of notification on 26.09.2014). Unfortunately, lack of conducive tax rules and other regulatory clarifications play the spoilsport again and not a single REIT could emerge in spite of sincere efforts on the part of the government. Finally, in November 2016, SEBI came up with a revised set of guidelines and now the picture is really looking attractive with a number of national and international players gearing up to initiate their presence in this segment. The salient features of the Regulations after recent amendments are as follows —

(i) Registration of REITs: Every REIT must register itself with SEBI through an application with requisite fees.

(ii) Eligibility Criteria:

- The applicant must be a trust with a registered deed and main objective to carry on activities as REIT.
- Each sponsor shall hold less than 5% of the units of REIT individually on post initial offer basis. The sponsors must have net worth of at least Rs. 20 crores individually and Rs. 100 crores collectively with at least five years experience in real estate sector.
- There shall be a manager for each REIT who can be either a company or an LLP with at least Rs. 10 crore net worth, five years of experience in fund management and property management in real estate industry, two key personnel with at least five years of experience and at least half of its directors or governing board members as independent directors or members.
- The trustees of the REIT must be registered with SEBI.

- There shall be only one class of units without any preferential voting rights. However, subordinate units may be issued only to the sponsors and its associates, where such subordinate units shall carry only inferior voting or any other rights compared to other units.

(iii) Issue and Allotment of Units:

- The initial offer of units must be made through public offer which must not be open for subscription for more than 30 days and the units shall be issued in dematerialized form only.
- Before making any initial offer the REIT must hold assets of at least Rs. 500 cr.
- Minimum number of unit holders shall not be less than 200.
- The units offered to the public should not be less than 25% of the outstanding units of REIT if the post issue capital at offer price is less than Rs. 1600 cr.; Rs. 400 cr. if the post issue capital at offer price is between Rs. 1600 cr. and Rs. 4000 cr. and 10% of the total outstanding units if the post issue capital at offer price is above Rs. 4000 cr.
- The offer size must be of at least Rs. 250 cr.
- Any subsequent issue of units by the REIT may be by way of follow-on offer, preferential allotment, qualified institutional placement, rights issue, bonus issue, offer for sale or any other mechanism and in the manner as may be specified by the Board.
- The REIT may invite for subscriptions and allot units to any person, whether resident or foreign.
- The REIT shall not accept subscription of an amount less than two lakh rupees from an applicant.

(iv) Listing and Trading of Units:

- Within a period of twelve working days from the date of closure of the offer the REIT will mandatorily list the units in a recognized stock exchange with nationwide trading terminal in accordance with a listing agreement.
- The units shall be traded, cleared and settled in accordance with the bye-laws of concerned stock exchanges and the trading lot for this purpose shall be one lakh rupees.
- The REIT shall redeem units only by way of a buy-back or at the time of delisting of units.

(v) Investment Restrictions:

- The investment of REIT shall only be in a SPV (Special Purpose Vehicle) or Properties or securities or TDR in India. REITs shall not invest in vacant land or agricultural land or mortgages other than MBS.
- At least eighty per cent of value of the REIT assets shall be invested in completed and

rent generating properties.

- At least fifty one per cent of the revenues of the REIT and the SPV, other than gains arising from disposal of properties, shall be, at all times, from rental, leasing or any other income incidental to the leasing.
- Not less than seventy five per cent. of the value of the REIT assets proportionately on a consolidated basis shall be rent generating.
- A REIT shall not invest in units of other REITs and shall not undertake lending.

(vi) Distribution to Unit holders:

- At least ninety per cent. of net distributable cash flows of the SPV shall be distributed to the REIT. Similarly, at least ninety per cent. of net distributable cash flows of the REIT shall be distributed to the unit holders. The proceeds from sale of any property shall be distributed to the extent of 90% unless there is any reinvestment proposal.

(vii) Leverage:

- If the aggregate borrowings and deferred payments of the REIT net of cash and cash equivalent exceed 25% of the value of the REIT assets, the REIT will have to take unit holders' approval and a credit rating from an agency for further borrowings. Moreover the above borrowings shall never exceed forty nine per cent. of the value of the REIT assets.

(viii) Valuation:

- The assets held by the REIT shall be valued by an independent valuer with at least five years of experience. There shall be full valuation annually and semi-annually and before every new issue. Valuation shall be done following international and domestic standards (issued by ICAI).

(ix) Manager's Responsibility:

- The manager shall submit an annual report to all unit holders with respect to activities of the REIT within three months from the end of the year. In addition, a half-yearly report to all unit holders shall also be made. The reports shall contain disclosures as specified in the regulation. The manager shall disclose to the designated stock exchanges any information having bearing on the operation or performance of the REIT as well as price sensitive information.

(x) Inspection:

- The Board (SEBI), *suo moto* or upon receipt of any complaint, may appoint one or more persons as inspecting officers to undertake inspection of the books of accounts, records and documents of the REIT. The Board may after consideration of the inspection report

and after giving reasonable opportunity of hearing to the REITs, issue orders to safeguard the investors which may include delisting, sale of all assets or prohibiting the access of capital market.

In addition to the SEBI Regulations, the Finance Act 2014, 2015 and 2016 also incorporated important provisions relating to tax structure of REITs as follows-

Table 9: Tax Structure of REITs in India

Particulars	**Taxation in the hands of REIT**	**Taxation in the hands of Investor**
Interest income received from SPV	Exempted from the tax under Section10 (23FC).	If distributed by REIT to unit holders: Taxable; REITs to make TDS @ 10% in case of resident unit holder and @ 5% in case of non-resident holder [Section 194LBA (1) and (2)].
Dividend received from SPV	Exempted if already charged to DDT	If distributed by REIT to unit holders: Exempted if already charged to DDT
Sale of shares allotted by SPV to REIT*	Taxable as LTCG or STCG u/s 111A or 112.	If distributed by REIT to unit holders: Taxable u/s 10(23D)
Capital gain on sale of assets by REIT	Taxable as LTCG or STCG	If distributed by REIT to unit holders:Taxable u/s 10(23D)
Rental income	N.A	When distributed by REIT to unit holders: Taxable; REITs to make TDS
Any other income	Taxable at the maximum marginal rate of tax	If distributed by REIT to unit holders: Taxable u/s 10(23D)
Sale of units of REIT	N.A	LTCG exempted u/s 10(38), STCG taxable u/s 111A.

Note: * Shares allotted by a special purpose vehicle to any REIT in exchange of units allotted by that trust to the transferor will not attract capital gains [Section 47(xvii)].

12. Scope and Challenges of REITs in India

In India, REITs seem to have a great potential for a number of reasons.

- In a recent estimate by JLL India, it is identified that as much as 229 million square foot of office space in India is REIT compliant. Even if half of this space gets listed in the next few years, the total REIT listing could be of Rs.1.25 trillion.
- The central government is on a very positive note right from the introduction of REIT Regulations in 2014. Since then, every effort has been made to encourage establishment of REITs by easing the business norms and applicable tax structure. In a recent move, the government has removed a major hiccup in the path of successful listing of REITs - the Dividend Distribution Tax (DDT). DDT was exempted on special purpose vehicles (SPVs). Moreover, rules for REITs were relaxed and the investment cap in under-construction projects was raised from 10% to 20%. SPVs are now allowed to have holdings in other SPV structures and the limit on number of sponsors has also been removed.
- Due to a number of government initiatives including smart cities, India's stock of Grade A (i.e. highest quality) commercial properties is constantly growing. This presents a great opportunity for the REITs as they mostly prefer investment in this kind of properties due to their higher rental yields.
- REITs have the potential to attract institutional as well as retail investors because of its inherent nature to provide regular dividends at relatively low-risk levels.
- REITs will offer additional option to the Indian investors for diversification by including a slice of real estate investment in their existing portfolio.
- As per the regulation, at least 80% of assets of REITs must be completed and rent generating properties. Thus they entail relatively low risk which will attract the Indian risk averse investor community.
- REITs will provide the developers another avenue to exit from completed projects easily. This will help the real estate sector to maintain a steady growth in future.
- In India, most of the REIT compliant projects are either office buildings or shopping malls that have already been developed and leased out. As a result, REITs are ensured about a healthy and steady return on their investment in these properties. The rental yield in commercial asset class across the country is usually in the range of 8-11% which is comparable to long term equity returns.

In spite of the above opportunities, the journey of REITs in India may not be that smooth. This is because, all the above speculation is based on the assumption that REITs will be highly accepted by the investors. However, given the fact that average rental yield in India is around 8-10%, REITs

will barely be able to provide 6-8% returns even if management is assumed to charge a modest 2% fees on investment. This return is comparable to returns on bank FDs. Thus, it is doubtful as to whether the retail investors will be eager to invest in REITs given other safer modes like FDs generating similar yields.

Return from price appreciation of REIT units also may not be that promising. SEBI regulations require all REITs to get their portfolios valued twice a year and to disclose the NAV to investors. Unfortunately in India, property prices vary even between neighboring areas. As a result, it is hardly possible to obtain marked to market REIT portfolio. Hence, there is a high chance of large swings in valuation every six months.

Minimum investment size of Rs. 1 lakh is also likely to keep a sizable portion of retail investor community out of the REIT ambit.

In addition to the above, capital gain and other income is still taxable at REIT level and this can potentially be a spoilsport.

13. Conclusion

REITs are constantly making the headlines for the past few months. Everybody including the policymakers, developers and the investors are hoping that it will bring the much waited push and transparency to the real estate sector and help it to participate in the growth story of Indian economy. With the first REIT listing expected by end of this year, it will be quite interesting to watch how REITs actually perform in Indian market.

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Patients' Perception towards Service of Public Hospitals: A Study of Selected Hospitals in Kolkata

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Abstract: The Indian healthcare sector has undergone insightful changes during the last decade. Indians now need not go abroad for treatment. Increase in the service providers' strength to keep pace with the changing need of the patients for further improvement in the quality of healthcare service is now essential. In this sector, public hospital delivers indispensible services to a significant number of patients in India. West Bengal is leading in this respect. Many public hospitals in Kolkata, capital of West Bengal, are known for their reputation and for huge services towards the society, particularly to poor and lower income group patients who are in the greatest need of it. There are many constraints in public hospitals, but still they provide many services at the lowest cost including medicine. Patients' inflow is increasing day by day; but infrastructure is limited. To review the hospital performance a patients' survey is necessary to analyse its present status for further improvement. Under the above scenario the objective of the current study is to measure the healthcare service of selected public hospitals in and around Kolkata. The study period is 2014-2016. Apart from that, present study highlights the perception of patient on public hospitals regarding admission, comfort, food services, overall care and discharge within the existing situation, and the need of survival strategy for coming years in healthcare sector.

Key-words: Health care services, public hospitals, hospital performance, patients.

1. Introduction

A sound healthcare system makes our community healthier and continues to improve the quality of care. To achieve it, we need to reform our system to make it sustainable and more responsive to the increasing needs of the community. Health is one of the fundamental issues of every society and all nations. It is evident from different literature and empirical studies that health contributes significantly in human development. So, people in sound health not only can accelerate the pace of

economic progress but also ensure social development. Health means a state of being well in body or mind. The constitution of World Health Organization (WHO) says, *Enjoyment of the highest standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic and social condition.* As health is of utmost importance for any individual and society, it becomes a priority or a subject that has to be given full attention and focus. Health has been considered as one of the most significant aspects of human life. According to the *Right to Health* in the Universal Declaration of Human Rights, *Everyone has the right to a standard of living, adequate for the well being of himself and his family.* The health care system in India is as old as Indian civilization. In fact, before the advent of the western system of medicine each nation had its own indigenous medicine system, which offered medical care to their citizens. These systems expanded independent of one another. Each system developed its own underlying principle of treatment. The existence of Ayurveda in India most likely dates back to the period of Indus Valley Civilization. It was also India that offered the world the first hospital service around 320 B.C., when the great ruler Ashoka built the first hospital. It was specially planned to treat diseases (Prasad, 1992). In a developing country like India, it is the obligation of welfare state to pay proper attention to the health care and services provided to its people. Great emphasis has been laid on the health sector in post-independent India. That is reflected with the improvement of major health indicators in a positive direction, which is given below:

Table 1: Major Health Indicators of India

	Indicators	**1947**	**2014**
1.	Birth Rate *(per1000 population)*	41	20
2.	Death Rate *(per1000 population)*	27	7
3.	Infant Mortality Rate *(per1000 live births)*	146	39
4.	Life Expectancy at birth *(years)*	32	68

Source: Sample Registration System 2002, July 2016 Volume 50 No 1 and Health on the March, 2010-11, World Bank.

In post-independent India, systematic health care arrangements have been planned and implemented by setting up different kinds of hospitals along with teaching hospitals. The importance of health services and the concern of the government were reflected not only in the Government of India's National health policy 2002, but also in the allocation made by the Planning Commission. In eighth plan period, 1992-97, the total health sector allocation was 3.2 %, it was hiked to 4.09 % in next plan period and again it is increased to 6.49% in 2007-2012 during the eleventh plan period. Now, budgetary support for central departments under Ministry of Health and Family Welfare Government of India in Eleventh Plan (2007-2012) and Twelfth Plan (2012-2017) projections (Rs. in Crore) is given below:

Table 2: Budget Allocation of Government of India in Eleventh Plan (2007-2012) and Twelfth Plan(2012-2017) Projections (Rs. in Crore)

Ministry of Health and Family Welfare Government of India	Eleventh Plan Expenditure	Twelfth Plan Expenditure
Dept. of Health & Family Welfare	83,407	2,68,551
Dept. of AYUSH	2,994	10,044
Dept. of Health Research	1,870	10,029
Aids control	1,305	11,394
Total	**89,576**	**3,00,018**

Source: Draft Twelfth Five Year Plan, Planning Commission, Yojana February, 2014.

Health sector is one of the most significant service sectors in India. This sector comprises two segments - 1) public health sector and 2) private health sector. In India, the public health sector's share in the healthcare delivery market is 20% while 80% is with private health sector (ICRA Report, 2005). The reliance on private health sector is increasing day by day despite the fact that the cost of accessing private health services is roughly double than public health sector and much higher in urban area than rural areas. There are various constraints in public health sector but it is a fact that the state hospitals are more accessible to the common people of this country. The health services from public and private sector are not same in different states of India, which are shown below:

Table 3: Public and Private Hospitals in Different States (Indoor)

State	Public (%)	Private (%)
Andhra Pradesh	30	70
Karnataka	35	65
Kerala	36	64
Maharashtra	20	80
Tamilnadu	39	61
West Bengal	**73**	**27**
India	**40**	**60**

Source: 60th National Sample survey, 2004

From the above table, it is evident that West Bengal is the leading public health service provider in our country. The state has a fairly large health infrastructure and it has achieved improvement in health indices of the population (Health Report, 2006-07). To achieve this, not only the various

medical institutions were established in different districts of West Bengal, but also a number of sanctioned beds were increased during the last few years. In 2005 the figure of sanctioned beds in West Bengal was 58,312, but as on 31st December 2015 it was 1,21,033 representing an increase of 107.56% (Health Report, 2004-05 & 2014-15, published on 30.03.16). Along with the change in infrastructure demand for health services also has increased during the last few years. Demand for quality health care has increased due to better health awareness and population expansion. Demand for quality healthcare and growing number of patients in different cases during last two decades are reflected in Table 4.

Table 4: Growth in Health Services in West Bengal

Services	1997	2005	% of Change	Average Growth Rate (%)
Outdoor Patient (in lakhs)	148	225	+ 52%	6.50
Indoor Patient(in lakhs)	15	24	+ 60%	7.50
Major Surgery(in thousands)	55	144	+162%	20.25
Maternity(in thousands)	281	392	+40%	5.0
Ultrasonography(in thousands)	2	120	+5900%	737.5
X-ray(in thousands)	400	855	+114%	14.25
Pathological Test(in lakhs)	11.3	35.2	+212%	26.50

Source: Monthly Journal of Government of West Bengal, October 2006

Despite the improving health indicators and increasing health infrastructure, West Bengal has a long way to go toward achieving best performance in health sector. Kolkata (formerly known as Calcutta), the capital of West Bengal, is safeguarded by a variety of Medical and Healthcare institutions. Major part of health infrastructure of West Bengal is also located in this city. Total number of hospital beds (sanctioned) in West Bengal was 1,21,033 in 2014-15, out of which 32,216 are available in Kolkata alone. At present, total number of medical college hospitals in West Bengal is 13 [www.wbhealth.gov.in], out of which 5 are in Kolkata. Total number of hospitals in Kolkata is 398 [including 351 private hospitals] out of which 32 State Government hospitals and other hospitals under the Department of Health and Family Welfare are in Kolkata. For complicated surgeries and advanced treatment, huge numbers of patients gather everyday in different city hospitals (super/ multi specialty) from all the districts of the state. The city hospitals not only served health care facilities and services to districts patients, but also patients from the North-Eastern region of India and neighbouring countries like Bangladesh, Nepal, Bhutan etc. To meet the huge requirements of healthcare services in this city, a large number of hospitals are run by the state and private health

care providers. So, it is clear that major pressure and infrastructure for health services of the state lie primarily in Kolkata. But existing facilities available in the public hospitals are not adequate to meet the present demand for health services. Public hospitals serve a huge number of patients with its limited capacity and different constraints. Public healthcare services in Kolkata are overburdened with the pressure of patients. The public health sector faces different types of troubles increasingly throughout the world, not only in Kolkata (Flynn, 1994). Private health sector is, therefore, taking the chance to explore the vast field of health care, understanding the demand of population and need in the society. In Kolkata, private hospitals are rising day by day and number of private hospitals has increased to 351 in 2015, which was 288 in 2006. But in line with the National Health Policy of India (NHP-2002), the state government has now embarked on a *mission, Health policy 2004–13*, in 2004, to improve the health status of all the people in the state, especially the poorest and those are in greatest need. Again in plan of action 2011-2015, Government of West Bengal focused on various attributes like rendering responsive, compassionate and prompt service to patient, performance as the only career advancement criteria for service providers and no compromise in ensuring medieal services to all patients. To achieve this goal, performance appraisal and expansion of public hospitals [major health service provider of the state] are essential. To maintain parity with the rising demand, healthcare services must be at par with quality and patient-need based. Under the present situation, public hospitals need more infrastructure, equipment, technological advancement, modernization in various department and efficient manpower. Under this alarming situation, patients' perception analysis of public health sector is necessary to review its present situation and performance, which will also help us to find out the strengths, weaknesses, opportunities and threats of public health sector. SWOT analysis is a simple framework which helps to identify the problem and prospects of health sector. It also helps to maximise positive attitude and minimise negative attitude. Health sector is associated with two important aspects, health service provider and service recipient or patient. To understand the current status and to know internal and external factors which have significant influence on health sector, health service recipients' perception study is being undertaken in the public health sector.This will have an impact on better performance and sustainability of the sector. In the present day competitive global market, the study will have great social and economic impact.

2. Literature Review

In spite of extensive search for literature in the field of health sector and public health sector few literature has been found.

Coe (1970, 1988) explained in detail the various aspects of modern healthcare system and development of the modern hospitals. He also identified 5 A's in patient's expectation, which are- *Availability:* the factual presence of the full range of health services – preventive, curative and

rehabilitative; *Accessibility:* providers of services are distributed geographically so that time, distance and lack of transportation are not bars for utilization; *Accountability:* providers are responsible for assuring the quality of services rendered both technically and organizationally, to monitor continually the scientific competence and the continuity of services provided; *Affordability:* cost of services is reasonable for care, and no one is deprived of services because of inability to pay for them; *Acceptability:* services must be provided in a way that will maintain the dignity of the patient of his or her situation (Rodney Coe,1988; p. 413). Yesudian (1988) concluded that according to the planning commission of India, 20 percent of the population living in urban areas have the facilities of 70 percent of the total hospital beds and 80 percent of the doctors in the country. However, though all varieties of health services are available in our cities, not all sections of the community are benefited by these facilities. There is a wide gap in the utilization of health services between the various sections. Rao (1992) illustrated health scenario and hospital administration in India. Barnum and Kurzin (1993) investigated different issues of healthcare provided in public hospital. Duggal (1995) investigated the trends in public health budget in India and its impact on health sector. Roy (1998) narrated the history of public health sector in colonial Bengal during 1921 to 1947. Francis and de Souza (2000) explained the hospital administration in India and India's health policies. They also observed that new pressures require better responses from improved private administration. They also indicated that the cost of providing hospital care is increasing with alarming speed. The healthcare system needs change; it is a challenge and an opportunity as well. Srinivasan (2002) explained the profile and future of healthcare in India and managerial aspects of it. Kunders et al. (2003) emphasized on the privatization of the health sectors with quality healthcare facility along with modern planning facilities and management in this field. Kunders (2005) explained the need of the planning in hospitals and health sectors and different managerial aspect of it. Ghosal (2006) described the need of public sector in health care through health policy 2004-2013. She noted that the presence of private sector and its increasing trends is inevitable. E-management in health sector, public private partnership and other issues are to increase quality of health service considering the huge demand of the people of the state. Paul (2007) explained the concept of performance measurement in his article. Performance measurement involves quantification of the efficiency and effectiveness of the past activities on the basis of collected data. Effectiveness implies accomplishment of a task while efficiency implies accomplishment with minimum utilization of input resources. Determining indicators (units in which performances are expressed) is an important function in performance measurement. Sharma (2007) explained that government expenditure in health care sector is declining; it is private sector investment that will drive the sector's transformation. He observed that the government alone would not be able to cope with the demand; private sector investment will be needed. In fact, it will be needed more than ever. Singh and Sharma (2011) clarified various issues like healthcare and social development, healthcare system, healthcare

economics and finance in lucid style. They also pointed out hospital functions, organization, classification and components to understand hospital as well as health sector. Govindarajan and Rammurti (2013) observed that innovative hospitals in India are pointing toward the technique of delivering world class healthcare affordably. Innovations at Indian hospitals result not from a grand design but from constant experimentation, adaptation and necessity. Indian hospitals, doctors, and administrators have traditionally looked to the west for advances in medical knowledge, but it is time for the West to look to India for innovations in healthcare delivery. Singh (2013) investigated about hospital administrators perception towards healthcare services of speciality hospitals in north India and highlighted shortcomings of government hospital with respect to better service. Shukla et al.(2013) analysed an image of corporate hospitals by measuring their customers' satisfaction. They revealed that medium and low income group patients need more access, and irrespective of profession, patients always demand quality services at reasonable cost.

Nagpal (2014) explained that the increased commitment to strengthen the magnitude of public health spending, and the initial lessons from the current generation of Universal health coverage programs, together augur well, with great potential to catapult forward India's march toward Universal health coverage. Bansod and Pedgaonkar (2014) observed that there are always some differences among health status of different people and different communities. To monitor these inequalities, generation of high quality reliable data regarding health status and health care utilization by periodic surveys is mandatory. Jain et al. (2015) interpreted NSSO 71st Round of Household survey on "Key indicators of social consumption in India: Health" in the light of new definitions and explanations. They also reviewed public healthcare providers' performance and government expenditure on healthcare. Das and Datta (2015) studied the health sector of India predominantly private hospital dominated, but found that public hospitals are delivering indispensible services to a significant number of patients in India. West Bengal is leading in this respect, so to review the services from public hospitals, its performance analysis is essential. Sundararaman et al. (2015) investigated the public health outlay, private and public expenditure on healthcare in the light of NSSO 71st Round data to understand the present scenario.

World Bank (2003) studied the need and trend of Corporatization of Public Hospitals and innovations in health sectors. India Social Development Report (2004) examined several socio-economic developmental issues relating to India. FICCI and Ernst & Young (2006) report on health sector highlighted that various opportunity prevails within the health sector in India. West Bengal Development Report (2010) published by Planning Commission of India, an edited volume which highlighted several socio-economic developmental issues relating to West Bengal. Annual Administrative Report (2011) of health and family welfare department, Government of West Bengal, states the present status of health planning, finance, human resource, organization, health facilities available and many significant issues. Healthcare infrastructure in India operations and challenges,

Indian chamber of commerce, PWC, (2012) studied the need and trend of Indian hospitals, innovations in health sectors, feasibility of PPP, different health indicators and future challenges. Manual of health statistics in India (2015), a report segregated in 8 Chapters, presented a comprehensive picture of the country and its health system and inter and intra state comparison with quality and reliable health data.

3. Research Objectives and Methodology

The main objective of the present study is to analyze and examine the performance of public hospitals in Kolkata. More specifically, the major research objectives are to:

- Analyse the demographic profile of the patients of selected public hospitals to understand their present status.
- Evaluate the performance of public health sector with the help of patients' preference study to identify present status of public health sector in Kolkata and its problems and prospects.
- Find out cost and care of health services provided by public health sector at different hospitals which helps to measure efficiency and shortcomings of hospitals and the extent to which patient is satisfied.

The study period is 2014 - 2016. The study covers 11 public hospitals (5 public medical colleges and 6 general public hospitals). The primary data for the study are collected through structured questionnaires. Respondents' degree of satisfaction is recorded on five point Likert Summated Scale. The secondary data is collected from published reports, magazines, newspapers, journals, websites of the hospital, medical colleges and different institutions. The collected data are coded, tabulated and analyzed by using SPSS package.

4. Data Analysis and Findings

At present, to identify the health scenario in Kolkata we interviewed 520 health service recipients or patients on a 5 point scale,1 being strongly disagree and 5 being strongly agree about different relevant issues relating to patient comfort and care. In the patient preference study, opinion and preference of patients obtained particularly in relation to Admission, Comfort, Food services, Care and Discharge about different stages of hospital services offered to patients, or public expectations from hospitals as suggested by Rodney Coe in his 5 A's [availability, accessibility, accountability, affordability, acceptability]. In patient perception study, general demographic profile of patients, their opinion and perception about different tiers of hospital services offered are sought. The detailed statistical analysis and their interpretations are given below:

Table 5: Gender Distribution of Patients Interviewed

Gender	Number of Patients	Percent
Male	268	51.5
Female	252	48.5
Total	520	100.0

520 patients were interviewed, out of which 51.5% are found to be male and rest are female as shown in Table 5 and regarding educational qualifications of patients in the Table 6, it is found that only 11.9% are illiterate, 18.8 % primary, 13.5 % junior high, 22.7% secondary, 12.3% higher secondary, 16.5% graduate and around 4.3 % are having post graduate or equivalent professionals degrees.

Table 6: Educational Qualifications of Patients Interviewed

Education	Number of Patients	Percent
Illiterate	62	11.9
Primary	98	18.8
Junior High	70	13.5
Secondary	118	22.7
Higher Secondary	64	12.3
Graduate	86	16.5
Post Graduate	16	3.1
Professionals degrees	6	1.2
Total	**520**	**100.0**

Table 7: Occupation of Patients Interviewed

Occupation	Number of Patients	Percent
Service	108	20.8
Business	42	8.1
Self employed	96	18.5
Student	30	5.8
Nothing	244	46.9
Total	**520**	**100.0**

In Table 7, it is observed that occupation of 20.8 % patients is service and 8.1% of those are

business. Around 18.5% of patients are self employed, 5.8 % are students and 46.9 % are doing nothing. No farmer is found within the respondents.

Table 8: Monthly Family Income Distribution of Patients Interviewed

Family Income (Rs)	Number of Patients	Percent
Less than 1,000	42	8.1
1,001 - 5,000	256	49.2
5,001 - 10,000	128	24.6
10,001 - 20,000	62	11.9
20,001 -30,000	30	5.8
Above 30,000	2	0.4
Total	**520**	**100.0**

The survey reveals that the monthly family income level of 57.3% patients is less than Rs.5000 42.3% patients are between Rs.5001 to Rs 30,000 and of 0.4% patients is above Rs. 30,000, a given in Table 8. Again, it is apparent from the analysis of family income pattern of the patient the majority of the respondents are poor. It is also observed from the analysis of occupational outline o the patients that majority of the respondents are economically backward.

Table 9: Family Size of Patients Interviewed

Family size	No. of Patients	Percent
1	18	3.5
2	42	8.1
3	60	11.5
4	144	27.7
5	120	23.1
6	56	10.8
7	34	6.5
8	8	1.5
10	4	.8
11	22	4.2
12	12	2.3
Total	**520**	**100**

From the Table 9, we find that family size of the 50.8% patients is 1 to 4, 41.9% between 5 to 8 and

9 to 12 for rest of the patients. So it is observed that patient family size is quite high with respect to their family income and occupation.

Table 10: Religion of Patients Interviewed

Religion	Number of Patients	Percent
Hindu	458	88.1
Muslims	60	11.5
Sikh	2	0.4
Total	**520**	**100.0**

The survey also reveals in Table 10 that the religion of 88.1% patients are Hindu, 11.5% patients are Muslims and only 0.4% of patients are Sikh. Out of the total patients, dominance of poor economically backward Hindu patients is evident from the survey.

Table 11: Caste of Patients Interviewed

Caste	Number of Patients	Percent
General	318	61.9
S C	128	24.9
S T	18	3.5
O B C	50	9.7
Total	**514**	**100.0**

Regarding caste of patients in Table 11 in the survey, it is found that 61.9% are general, and around 38.1 % are belonging to Scheduled caste, Scheduled tribe and other backward caste.

Table 12: Age Distribution of Patients Interviewed

Age(years)	Number of patients	Percent
Up to 20	40	7.7
21 – 40	256	49.2
41 – 60	134	25.8
61 – 80	78	15
81 & above	12	2.3
Total	**520**	**100**

In Table 12, we observed that majority of the patients i.e. 49.2% of the patents are within the age group of 21 to 40, and between 41 and 60 age group 25.8% of the patients prevail. Study reveals that 15% of the patients are within 61 to 80 age group, and up to age of 20, we find only 7.7% of the

patients, and 2.3% of the patients are above 81 age. In other words, we can say that 17.3 % of the total sample represents senior citizens and rest of the respondents is 82.7 % belonging to less than 60 years.

Table 13: Residence of Patients Interviewed

Residence	Number of Patients	Percent
Kolkata	336	64.6
Other Districts	184	35.4
Total	**520**	**100.0**

Table 14: Geographical Distributions of Patients Interviewed from Kolkata

Kolkata	Number of Patients	Percent
North	154	29.6
South	278	53.5
East	44	8.5
West	44	8.5
Total	**520**	**100.0**

Out of total patient interviewed, 70% are from Kolkata and rest from other districts. In Kolkata, patients belong to different parts of the city, shown in Table 13 and 14. It is to be noted that for complicated surgeries and advanced treatment, huge number of patients gather everyday in different public hospitals from all the districts of the state. It is one of the major pressures on public hospitals of Kolkata, and infrastructure of health services of the state lie primarily in Kolkata. But existing facilities available in the public hospitals are not adequate to meet the present demand for health services. Public hospitals serve a huge number of patients with its limited capacity and different constraints. In Table 15, hospital -wise distribution of respondents has been given below.

Table 15: Hospital-wise Distribution of Patients and Key Informants Interviewed

Hospitals	No. of Patients	No. of Key Informants
Medical college	75	35
N.R.S Medical college	69	27
S.S.K.M/P.G hospital	77	36
National Medical college	67	23
R.G. Kar Medical college	58	21
Vidyasagar hospital	34	24

M.R Bangur hospital	41	28
S.N.Pandit hospital	31	21
Lady Victoria hospital	23	26
Abinash Datta hospital	21	19
Baghajatin hospital	24	20
Total	**520**	**280**

The patients expressed their opinion on about 49 total major questions relating to hospital performance on a five point Likert Summated scale: 1 being strongly disagree and 5 being strongly agree. The detailed statistical analysis based on primary data and their interpretations are given below:

Table 16: Overall Response to Admission Process of Patients

Patients' Opinion	Number of Patients	Percent
Highly dissatisfied	4	0.7
Dissatisfied	162	31.2
Satisfied	344	66.2
Highly satisfied	10	1.9
Total	**520**	**100.0**

From the above Table 16 it is evident that 66.2 % of the total respondents are satisfied, 1.9% highly satisfied with the overall admission process. But it is also alarming that 31.9% are not at all satisfied. Total admission response includes reason, cost, time, process, information, promptness and nature of admission.

Table 17: Descriptive Statistics of the Important Attributes Under the Admission Characteristics of the Respondents

Attributes	Frequency					Mean	S.D.	Skew	Kurt
	1	2	3	4	5				
Admission decision taken by other than	178	76	58	182	26	2.62	1.387	.043	-1.579
family or relatives									
Cost of admission is very high	310	94	16	8	0	1.35	.645	2.047	4.326
Time taken for admission is high	162	202	78	78	0	2.14	1.022	.568	-.780
Admission is smooth and patient friendly	14	122	168	120	96	3.31	1.103	.069	-.951
Assistance received during admission	6	84	154	186	90	3.52	.995	-.195	-.744

Sufficient information available for admission	12	188	172	96	52	2.98	1.020	.484	-.619
Admission process needs to be improved	20	50	206	92	152	3.59	1.119	-.214	-.722
Promptness of admission	32	100	206	146	36	3.10	.994	-.162	-.348
Admission process is overburden	66	22	192	122	118	3.39	1.242	-.462	-.512
Admission process is under staff	54	16	158	200	92	3.50	1.436	-.767	.115
Admission process is mismanaged	54	20	182	192	72	3.40	1.104	-.685	.090
Admission process is well organized	212	164	64	12	68	2.15	1.334	1.104	.066

At present, 520 patients were interviewed out of which 70.8 % have availed free bed and rests are in paid bed. This again establishes that most of the patients are socially backward. It also fulfils the objective of the government to reach the poorest, and who are in greatest need of it.

Table 18: Type of Bed Availed by the Patients

Type of Bed	No. of patients	Percent
Free	368	70.8
Paid	152	29.2
Total	**520**	**100.0**

Out of the total respondents, 34.2% patients decided to admit to hospital themselves, but relatives' suggested only 14.6% and private practitioner advised 11.2% to admit in public hospitals. Government doctors recommended 35% of patients for admission and 5% are referred by others as given in Table 19.

Table 19: Admission Decision Driver of Patients

Decision Taken	No. of Patients	Percent
Own	178	34.2
Relatives	76	14.6
Private	58	11.2
Govt. Doctors	182	35.0
Others	26	5.0
Total	**520**	**100.0**

Apart from that, we also identified that 61.5% of patients' selected public hospital due to availability of free care, 47.7% selected for its location, 4.6% opted public hospital because no private hospital is available in their area, 45.8% selected for reputation of the hospital, and 41.9%

opted because existing private hospitals are very costly. Regarding cost of admission, in the survey only 428 patients were able to give the information. It is found that only 72.4 % of 428 patients spent up to Rs. 500, 22 % spent between Rs.501 to 1000 and rest spent Rs.1001 to 10000. Minimum cost borne by patient at large is again evident form Table 20 shown below.

Table 20: Cost of Admission of Patients

Cost (Rs.)	No. of Patients	Percent
Up to 500	310	72.4
501-1000	94	22.0
1001-5000	16	3.7
5001-10000	8	1.9
Total	**428**	**100.0**

Table 21: Time required for Admission Process of Patients

Time (in Hr)	No. of Patients	Percent
Less than 0.5	162	31.2
0.5 -1	202	38.8
1 – 2	78	15.0
2 - 3	78	15.0
Total	**520**	**100.0**

It is revealed from the survey that 70 % of patients are admitted within an hour, but for the rest it was time consuming and painful. Finally, about admission process, around 83% of the patients feel that it is overburden, under staffed and mismanaged. 72.3% of respondents said it is not well organized. In second tier, we collected the responses from the patients regarding overall comfort in public hospitals.

Table 22: Overall Comfort for Patients

Patients' Opinion	No. of Patients	Percent
Highly dissatisfied	58	11.2
Dissatisfied	202	38.8
Satisfied	194	37.3
Highly satisfied	66	12.7
Total	**520**	**100.0**

From Table 22, it is evident that 37.3 % of the total respondents are satisfied, 12.7% are highly satisfied with the overall comfort offered. But it is also worrying that 50 % are not satisfied at all. Total comfort response includes room facilities, cleanliness, pollution and comfort.

Table 23: Descriptive Statistics of the Important Attributes Under the Comfort Characteristics of the Respondents

Attributes	Frequency					Mean	S.D.	Skew	Kurt
	1	2	3	4	5				
Rooms are comfortable for stay	54	98	166	120	82	3.15	1.202	-.104	-.827
Room & toilet cleaned daily	44	146	130	112	88	3.10	1.226	.078	-1.044
Room & treatment-equipments are fine	58	100	174	130	58	3.06	1.155	-.113	-.724
Pollution during hospital stay	56	22	122	256	64	3.48	1.109	-.965	.329
Maximum pollution during the day	46	136	90	174	74	2.97	1.129	-.041	-.740
Duration of your stay	8	456	24	18	14	1.10	.475	3.885	19.070

It is also observed that different types of pollution are identified by respondents in hospitals. These are Noise pollution -47.7%, Air pollution-25%, Water pollution-19.2% and others 8%. It was also found that during 9am-12noon and 3-6pm, pollution level is highest as observed by 26.2% and 32.7% of the patients respectively in Table 24. It was also observed that during 6pm to 6am, minimum pollution was reported in public hospitals.

Table 24: Maximum Pollution during a day in Hospitals

MaximumPollution	No. of patients	Percent
6-9am	46	8.8
9am-12noon	136	26.2
12noon-3pm	90	17.3
3-6pm	170	32.7
6-9pm	10	1.9
9-12am	10	1.9
Unknown	58	11.2
Total	**520**	**100.0**

Table 25: Duration of Stay Decided by a Person

Person	No. of patients	Percent
Doctor	456	87.7
Other staff	24	4.6
Own	16	3.0
Relatives	24	4.7
Total	**520**	**100.0**

87.7% of the patients said that, duration of the stay in a hospital is determined by doctor. 4.6 % of the patients stated that duration of stay is determined by other staff, and according to 3% of the patients, they had taken decision at their own risk. But 4.7% of the patients stated that they had taken decision at their relatives' suggestion with respect to hospital stay and its duration. Now, we move to the third stage. In the third stage, we measure response relating to Over All Food Services for Patients.

Table 26: Over All Food Services for Patients

Patients' Opinion	No. of patients	Percent
Highly dissatisfied	50	11.6
Dissatisfied	150	34.9
Satisfied	176	40.9
Highly satisfied	54	12.6
Total	**430**	**100.0**

From the Table 26, it is evident that 40.9 % of the total respondent's are satisfied, 12.6 % are highly satisfied with the overall food services for patients offered by the public hospitals. But 46.5 % is not at all satisfied with the food supplied in hospitals.Total food services related response includes quality, proper service, cleanliness, time, delivery process and type of food. 90 patients out of 520 took their food from home and they do not respond about food served by the hospital.

Table 27: Descriptive Statistics of the Important Attributes Under the Food Services Characteristics of the Respondents

Attributes	Frequency					Mean	S.D.	Skew	Kurt
	1	2	3	4	5				
Patient on a special diet with guidance	324	104	02	0	0	.21	.415	1.606	1.066
Supply of food in hospital is satisfactory	306	114	10	0	0	1.26	.480	1.618	1.688
I eat properly the served foods	20	102	170	90	48	3.10	1.035	.149	-.827

Foods are hygienic & served properly	42	34	194	112	48	3.24	1.040	-.342	-1.044
Served hot and in time to the patient	36	34	182	140	38	3.29	.986	-.483	-.724
Food trays are removed within time	42	46	176	120	46	3.22	1.058	-.332	.329

Table 28: Over All Care for Patients

Patients' Opinion Avg. Score	No. of patients	Percent
Highly dissatisfied	4	0.8
Dissatisfied	164	31.5
Satisfied	292	56.2
Highly satisfied	60	11.5
Total	**520**	**100.0**

From the Table 28, it is evident that 56.2 % of the total respondents are satisfied, 11.5% are highly satisfied with the overall care for patients offered by the public hospitals. But it is also alarming that 32.3% are not at all satisfied.

Total patient care response includes drug availability, cleanliness, doctor visit, clinical tests, performance of service providers and information about progress. To understand the real situation, we tabulated hospital expenses of every patient, shown in the Table 29; here we also notice that majority or 57.4% of the patients spend up to Rs. 2000 for their treatment and 30.3% of the patients spend Rs. 2001 to 10,000. So, rest 12.3% of the patients spends more than 10,000 for hospital treatment. So, we can say that public hospitals are not expensive and easily accessible.

Table 29: Expenses on Hospitals as Incurred by Patients

Expenses in Hospitals (in Rs)	No. of Patients	Percent
Up to 2000	299	57.4
2001 - 4000	60	11.6
4001 - 6000	21	4.1
6001 - 8000	50	9.6
8001 - 10000	26	5.0
10000 -12000	14	2.6
12001- 14000	00	00
14001- 16000	12	2.3
16001- 18000	00	00

18001-20000	6	1.2
Above 20000	32	6.2
Total	**520**	**100**

Table 30: Descriptive Statistics of the Important Attributes Under the Overall Care Characteristics of the Respondents

Attributes	Frequency					Mean	S.D.	Skew	Kurt
	1	2	3	4	5				
Satisfied with the medicine supply and availability	52	140	184	122	22	2.85	1.1026	-.091	-.615
Satisfied with other hospital facilities	50	98	202	132	38	3.02	1.059	-.156	-.467
Satisfied with cleanliness	70	128	156	130	36	2.87	1.139	-.016	-.839
Regular doctor visits	12	12	160	190	122	3.77	.977	-.826	1.376
Doctor spent sufficient time and proper attention	48	48	178	164	78	3.32	1.162	-.532	-.156
Paid for different services	56	62	128	170	100	3.38	1.232	-.478	-.682
Hospitals give receipt for payment	56	156	138	132	22	2.82	1.077	.042	-.866
Prescriptions to buy materials from outside	26	48	96	264	74	3.62	1.022	-.858	.470
Tests ordered to be conducted elsewhere	44	100	176	158	32	3.07	1.049	-.257	-.553
I am able to bear health expenses	126	74	136	126	54	2.82	1.325	-.032	-1.180
Patient informed about daily progress	0	30	198	240	42	3.58	.726	-.083	-.251
Doctor behaviors are pleasant	4	20	138	204	134	4.26	3.481	8.186	70.115
Nurse behaviors are polite	10	60	194	144	102	3.87	3.316	7.898	67.218
Behaviors of other staff are nice	22	108	222	96	68	3.16	1.035	.171	-.443
Overall nursing care	10	20	264	204	22	3.40	.720	-.394	1.241
Enough attention was given	10	64	222	188	32	3.33	.842	-.243	.040
Illegal gratifications never paid	64	80	168	152	56	3.11	1.166	-.269	-.702
Interference of outsiders never observed	22	80	232	138	48	3.21	.956	-.089	-.120
Expected treatment received	8	56	280	156	20	3.24	.753	-.098	.487
Hospitals are functioning efficiently	4	20	274	176	46	3.46	.741	.218	.358

Finally in fifth tier we collected the responses from the patients regarding overall care in public hospitals.

Table 31: Overall Response for Patient Discharge

Opinion	No. of Patients	Percent
Highly dissatisfied	12	2.3
Dissatisfied	152	29.2
Satisfied	298	57.3
Highly satisfied	58	11.2
Total	**520**	**100.0**

From the Table 31, it is evident that 57.3 % of the total respondents are satisfied 11.2% are highly satisfied with the overall patient–discharge procedure existing at the hospitals. But it is also upsetting that 31.5% are dissatisfied. Total response for patient-discharge includes discharge experience, hassle and time taken during discharge.

Table 32: Descriptive Statistics of the Important Attributes Under the Discharge Characteristics of the Respondents

Attributes	Frequency					Mean	S.D.	Skew	Kurt
	1	2	3	4	5				
Satisfie									
A discharge is a pleasant experience	60	22	168	160	110	3.46	1.205	-.604	-.303
No hassles at the time of discharge	20	12	128	190	170	3.92	1.003	-.894	.709
Wait for a long time after the doctor released	90	120	128	88	94	2.95	1.348	.103	-1.149
Waiting time during discharge	178	200	104	38	0	2.0	.914	.569	-.546
Causes of delayed discharge	6	22	8	2	0	2.42	1.154	.872	-.330

5. Conclusions

This study has made an attempt to show, based on the health service recipients' perception study, the usefulness of public hospitals in Kolkata. Most of the poor people of the society select public hospitals for their treatment. This is only the sector where the free healthcare facilities are offered till today to the poorest and those who are in the greatest need. Through the data analysis on health service recipients', respondents identified various issues in admission, care, food, comfort and discharge of patients.

Public hospitals in Kolkata charge the patients a nominal rate for different types of healthcare facilities. The survey revealed that 70% of the patients has availed free bed with minimum cost of healthcare expenses of Rs.2000/- and cost of admission include Rs.500/- only. The survey of 520 patients reveals that most of the patients are secondary or less by qualification, poor-class by

earning and occupation, equally distributed in gender, Hindu by religion and having family size of 6 and above, general by caste and within 50 by age and having free healthcare in public hospitals. We have identified few important observations, which are given below:

- Given the population of the city, the severe demand on health services is expected. From the primary data analysis, the perception of patients about different significant issues of public hospitals in Kolkata are outlined. It is found that on an average 60% of the patients are satisfied with the health care offered to them.
- These hospitals actually serve poor population who have no other option than public hospitals. If we go through the objective of the Government of West Bengal then we will find that these services are offered to poorest and those who really need it.
- Private hospitals outnumber public hospitals drastically in different cities including Kolkata but the demand for the services of the public hospitals is high despite the availability of private health care options.
- One of the primary reasons for the excess demand on public hospitals is the difference in the cost of services compared to private health care institutes. While services in government hospitals are largely subsidised, private healthcare is largely profit oriented and hence much more expensive.
- The facilities in the public hospitals are of poor quality, there have been reports on the irregularity of doctors and medical staff, inadequate equipments and non maintenance as some of the factors which limit the desired efficiency of these hospitals. Despite these facts, one must take into account the pressure of providing healthcare to masses on everyday basis as a mammoth task, and above all fulfilling their health needs.
- The teaching hospitals in Kolkata are of the largest referral hospitals in West Bengal, hence medical cases which cannot be solved due to lack of equipments or expertise in a state or district hospital in the state, the patient is asked to visit public hospitals in the city. This is a regular phenomena despite the fact that all public hospitals in the city themselves do not have enough infrastructure to cater the people of the city alone.
- Therefore, the poor of the city and the state have no other option than to undergo the painstaking long waiting periods in medical college hospitals at the cost of their health since they simply can't afford to pay for private services. This in turn creates an impossible demand on the medical college hospital and one walk through a hospital corridor where sick patients lie on the floor instead of beds and where people, inches away from death, are asked to wait for their turn, is not a rare sight.
- It is observed in the analysis that majority of the patients are satisfied with admission process, comfort, food services, patient care and discharge procedure. 80% of the

respondents agreed that overall position and functioning of medical staffs are good. Apart from that 94.3% agreed that doctors are available for OPD and IPD. It may be noted here that Government of West Bengal introduced OPD tracking system in recent years. 60% feel that number of doctors at present is not sufficient.

World Development Report (1993) indicated that different indicators can help us measure health status. It is also argued that, in case of underdeveloped countries health status is low compared to developed countries. The reasons cited are: income level, higher population growth, industrialization which also exist and are relevant in current study. Growing industrialization is a major cause of environmental pollution, which is also observed in different form and at different times in the city hospitals in current study. So, under this complex situation public health sector is providing free healthcare to large number of poor patients. Though there are some severe limitations, but at minimum cost best healthcare facilities are served to the needy patient. We believe, with necessary fund and human resource allotment, along with appropriate management, these hospitals will serve more efficiently for the enhanced service towards the society.

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Sustainable Supply Chain Management: A Study Based on Large Format Retailers in Kolkata

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Abstract: Globalisation in India has led to intense competition on a global scale. Companies are continuously looking for ways to reduce waste and disposable surplus, and to preserve environmental equilibrium and in turn improve their position and image in the market place. Integrating sustainability in supply chain is one such innovative strategy that companies are implementing worldwide. Though sustainable supply chain management (SSCM) has been studied in developed and developing countries, there is lack of information about the adoption of SSCM in Indian companies particularly in Kolkata based companies. The paper presents survey of SSCM practices in large format retail companies based in Kolkata. It has been observed that the status of implementation of SSCM practices in large format retail companies in Kolkata is still in its infancy, the awareness of SSCM practices is low among customers and the regulatory framework is not so stringent in terms of implementation of SSCM practices. Results of data analysis show that adoption and maintenance of SSCM practices has positive impact on economic and environmental performance of the company, viz., distribution and transportation cost reduction, production efficiency and sound corporate image. Two dimensions of sustainability – economic and environmental have been primarily focused in this study. Social dimension has not been considered since there are many aspects of this dimension such as dignity, diversity, human rights, education, indiscrimination, sanitation, healthcare, social security, food security, infrastructure, living condition and so on, which are very broad in concept and may have no direct link with supply chains. We conclude the paper by indicating directions for future research for SSCM.

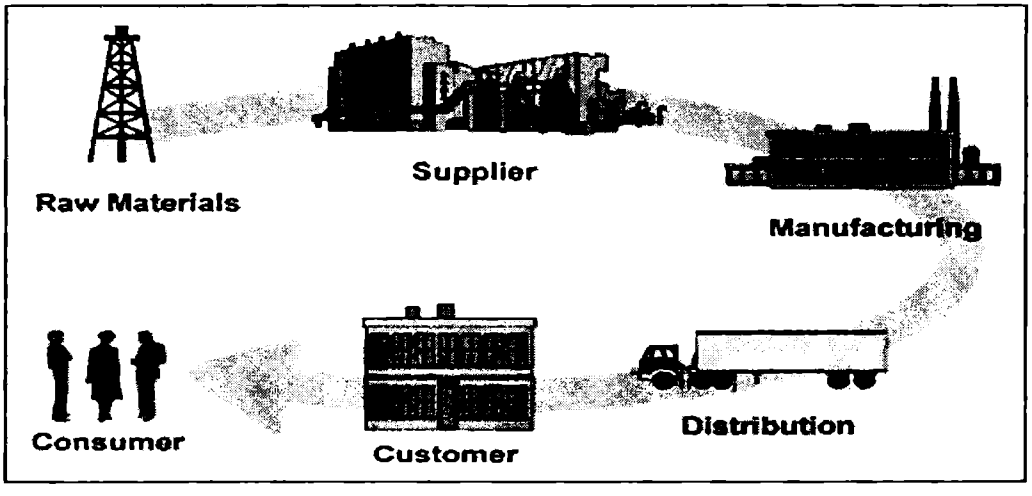
Key-words: Sustainability, supply chain management, large format retailers, survey, economic performance, environmental performance.

1. Introduction

As the name shows, Supply Chain Management (SCM) is a Chain. A Chain has many links. Similarly, SCM has also several links which are connected to make a loop. Although SCM is very

suitable for FMCG, it is a general Model for managing all businesses, which are repetitive. The Chain therefore moves in a circle: Sourcing Raw material – movement – storage – production/ processing – finished inventory – distribution and logistics – retailer – sale – proceeds and the cycle is complete. Therefore, in short, the supply chain is a comprehensive cyclic movement of all links with the aim of getting the right thing to the right places at the right time, for profit. The supply chain encompasses all the activities involved in the transformation of goods from the raw material stage to the final stage, when the goods and services reach the end customer. Supply chain management involves planning, design and flow of material, information and finance along the supply chain to deliver superior value to the end customer in an effective and efficient manner. As can be seen from the definition, the supply chain not only includes manufacturers, suppliers and distributors but also transporter, warehouses and customers themselves. The term *chain* is a little misleading because it gives the impression that there is only one entity each stage of the supply chain. In reality, multiple entities are involved at each stage: a manufacturer receives material from several suppliers and, in turn, distributes the products through distributors. The more appropriate term probably will be either *supply networks* or *supply web.*

Figure 1: Supply Web



Source: www.futurepublishing.com

Evolution of Supply Chain

The evolution of supply chain management has been gradual process. Over the last century, there have been three major revolutions in the field of supply chain management (Janat Shah, 2015):

(a) The First Evolution: The first major revolution was staged by the Ford Motor Company

where they had managed to build a tightly integrated chain. The Ford Motor Company owned every part of the chain- right from the timber to the rails. Through its tightly integrated chain, it could manage the journey from the iron ore mine to the finished automobile in 81 hours. However, as the famous saying goes, the Ford supply chain would offer any colour, as long as it was black; and any model, as long as it was Model T. Ford innovated and managed to build a highly efficient, but inflexible supply chain that could not handle a wide product variety and was not sustainable in the long run.

(b) The Second Evolution: Towards the end of the first revolution, the manufacturing industry saw many changes including a trend towards a wide product variety. To deal with these changes, firms had to restructure their supply chains to be flexible and efficient. The supply chains were required to deal with a wider variety without holding a too much inventory. The Toyota Motor Company successfully addressed all these concerns, thereby ushering in the second revolution. The Toyota Motor Company came with the ideas that allowed the final assembly and manufacturing of key components to be done in-house. The bulk of these components were sourced from a number of suppliers who were a part of the *keiretsu* system. *Keiretsu* refers to a set of companies with interlocking business relationships and shareholdings. These suppliers were located very close to the Toyota assembly plants. The combination of low set-up times and long-term relationships was the key feature that propelled the second revolution-and it was a long journey from the rigidly integrated Ford supply chain. The principles followed by Toyota are more popularly known as the lean production systems. In actual practice, the Toyota supply chain also had certain rigidities, such as a permanent relation with the suppliers, which could become a liability over a period of time. This, in turn, led to the third revolution spearheaded by the Dell Computers, which offered its customers the luxury of customisation with loosely held supplier networks.

(c) The Third Evolution: With advances in information technology(IT), Dell Computers allowed customers to customize their computers. Dell allowed the customers to configure their own PCs and track the same in their production and distribution systems. Unlike the Toyota supply chain, Dell did not believe in long term relationships with suppliers. Dell believed in working with world-class suppliers who would maintain their technology and cost leadership in their respective fields. Dell maintained medium-term relationships with suppliers, where the suppliers were always on the test. Because of these advances in IT, Dell could integrate the suppliers electronically, even if they were partners in the medium-term. At Dell, the trigger for supplier orders was the actual orders by the customers, and for forecasts. This helped Dell in reducing the inventory significantly, allowing them to respond to any changes in the market place. Essentially, on the product-variety front, firms have progressed from a single product to a wide variety and from a wide variety to customization. Similarly, on the chain-ownership front, firms have progressed from vertically integrated firms to long-term partnerships with the chain partners and from long-term partnerships to loosely held

networks. Advances in IT have fuelled the third revolution; the exact contours of the third revolution are still being defined.

Concept of Sustainability

Sustainability is a complex concept. The most often quoted definition comes from the *UN Brunt land Commission (World Commission on Environment and Development, 1987):* "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

"The environment must be protected... to preserve essential ecosystem functions and to provide for the wellbeing of future generations; environmental and economic policy must be integrated; the goal of policy should be an improvement in the overall quality of life, not just income growth; poverty must be ended and resources distributed more equally; and all sections of society must be involved in decision making" (The Real World Coalition 1996, a definition based on the work of the World Commission on Environment and Development)[1]. The concept itself comprehends economic, social and environmental processes while considering the two things; the finite amount of resources and the high rate of human growth and consumption where there are urgent needs to compromise both growth and resources.

Though the concept was acceptable, the implementation is different for different organization. Furthermore, sustainable developments have focused primarily on the environmental and economic dimensions while the importance of social, political and cultural factors have been neglected (International Panel on Climate Change (IPCC) (http://www.ipcc.ch/publications_and_data/ar4/wg3/en/ch12s12-es.html accessed on 08 October 2012).

The concept of the 3BL or "Triple Bottom Line" was introduced in the mid-1990s, when a management think tank focused on accountability coined and began using the term in its work (Williard, 2002).

Piotrowicz *et al.* (2011) pointed that sustainable development includes economic, social and environmental dimensions. According to them, while economic viability is necessary for an organization to survive, it is not sufficient to sustain in the long run, if it causes irreversible damages to the ecosystem by emitting greenhouse gases and toxic wastes and depleting non renewable resources or it fails to ensure safety, security, dignity, healthcare, minimum wage, indiscrimination and better working conditions for its employees, the community and the society in general. Therefore it has been imperative for any organization to behave in a socially and environmentally responsible manner while trying to achieve economic goals.

[1] The Real World Coalition 1996, a definition based on the work of the World Commission on Environment and Development

Sustainable supply chain management

Since the Rio Summit in 1992 the focus of corporate environment responsibility has gradually shifted from complying with environmental regulation to taking up proactive initiatives by a few world-class companies. There are multiple reasons, not least of which is that the business and financial performance of companies may depend directly on socially and environmentally responsible business practices. Thus companies are under competitive pressure to continuously search for new ideas and methods to achieve or maintain environmental sustainability. Integrating sustainability in supply chains is one such idea that is fast gaining popularity in the industry. Companies have realized that they have to replace traditional internal measures of implementing waste-reduction strategies, with pollution-control techniques, and replacing hazardous inputs with environmentally friendly alternatives. Moreover, customers and other stakeholders do not distinguish between a company and its suppliers (Sarkis, 2006). According to Bacallan (2000), 'although they may have nothing to do at all with the problem, companies are often held accountable for the labour practices and the environmental liabilities of their suppliers'. Thus integrating sustainability in the supply chains helps companies to avoid potential environmental problems and gain corporate image over other competitors.

2. Objectives of the Paper

The purpose of this paper is

i) To examine the present situation and status of using sustainable supply chain adopted by large format retailers, based in Kolkata.

ii) To find out if the voluntary adoption of SSCM affects companies' productivity.

iii) To ascertain if sustainable purchasing practices is leading to sustainable logistics practices.

iv) To examine if collaborative relationship with suppliers increases retailers' productivity, efficiency and corporate image.

3. Methodology

The study is both explorative and empirical in nature based on primary and secondary material. The explorative part was mainly on secondary material, such as Articles in Journals, Magazines, Periodicals, Dailies and any special surveys conducted earlier. For empirical or primary survey, interviews, questionnaire method have been used. Questionnaire has been issued to respective departmental heads of the selected companies. Interviews have been arranged by appointments with concerned senior executives or departmental heads of the selected companies. Based on information collected and material available appropriate statistical and analytical tools have been used for analysis and interpretation of the data.

Sample Selection

For my survey I have selected 10 large format retailers based in Kolkata according to their market capitalization rates in the bourses. Those are:

Sl No.	Rank	Name	Market Capitalization (in crores) (Rs.) (as on 31-12-2014)
1.	61	**Titan Company**	29,274
2.	101	**Big Bazaar**	18,830
3.	201	**Pantaloons India (Aditya Birla Fashion & Retail Ltd.)**	13,173.86
4.	259	**Trent (Westside)**	3,813.74
5.	278	**Shoppers Stop**	3,450.83
6.	326	**Future Retail**	2,692.76
7.	418	**V-Mart**	1729.76
8.	460	**Future Lifestyle Fashions**	1,480.10
9.	399	**Bata India**	534.30
10.	816	**Reliance Fresh**	334.80

Source: bt500.businesstoday.in/?year=2014

A brief overview of large format retailers in India

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. A T Kearney, a US Based global management consulting firm has ranked India as the fourth most attractive nation for retail investment among 30 flourishing markets. The Indian retail industry has emerged as one of the most dynamic and fast-paced industries due to the entry of several new players. It accounts for over 10 per cent of the country's Gross Domestic Product (GDP) and around 8 per cent of the employment. India is the world's fifth-largest global destination in the retail space. India's retail market is expected to nearly double to US$ 1 trillion by 2020 from US$ 600 billion in 2015, driven by income growth, urbanization and attitudinal shifts. While the overall retail market is expected to grow at 12 per cent per annum, modern trade would expand twice as fast at 20 per cent per annum and traditional trade at 10 per cent.

India's Business to Business (B2B) e-commerce market is expected to reach US$ 700 billion by 2020. Online retail is expected to be at par with the physical stores in the next five years. India

is expected to become the world's fastest growing e-commerce market, driven by robust investment in the sector and rapid increase in the number of internet users. Various agencies have high expectations about growth of Indian e-commerce markets. Indian e-commerce sales are expected to reach US$ 120 billion! by 2020 from US$ 30 billion in FY2016.Further, India's e-commerce market is expected to reach US$ 220 billion in terms of gross merchandise value (GMV) and 530 million shoppers by 2025, led by faster speeds on reliable telecom networks, faster adoption of online services and better variety as well as convenience.

The retail market, (including organized and unorganized retail), was at Rs. 23 lakh crore in 2011-12. According to the study, organized 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. In terms of sheer space, the organized retail supply in 2013 was about 4.7 million square feet (sq ft). This showed a 78 per cent increase over the total mall supply of just 2.5 million sq ft in 2012. Favourable demographics, increasing urbanization, nuclearization of families, rising affluence amid consumers, growing preference for branded products and higher aspirations are other factors which will drive retail consumption in India.

4. Analysis and Findings of the Study

The number of large format in the sample is 10. The sample size is small, since the concept of SSCM is still new in Kolkata and we required responding firms to have adopted at least some of the listed SSCM practices, many firms felt they were not yet ready to respond to the questionnaire.

Data collected were collated in Microsoft Excel, and analyzed by using mean, standard deviation and coefficient of variance (descriptive analysis) and Pearson's correlation coefficient (inferential analysis).

(i) Drivers of SSCM for large format retailers

Items 8a-8d in the questionnaire relate to the drivers of SSCM for large format retailers. Table 1 shows the descriptive statistics:

Table 1: Descriptive Statistics related to the drivers of SSCM

Questionnaire item	Mean	Standard Deviation
8a	4	0.71
8b	3.1	1.72
8c	2.6	1.50

The following observations can be made from Table 1:

- Most of the large format retailers adopted SSCM practices voluntarily as the item 8a. It has a mean score of 4 and respondents differ from the average value by 0.71 units, which shows the degree of homogeneity or consensus in their responses.
- Few adopted SSCM practices to comply with regulation with a mean score of 3.1. this shows that in Kolkata, environmental norms are still not stringent.
- A adoption under pressure from customers is not relevant in the Kolkata based retailers context as they have a very low means score. This shows customers are not much aware of the SSCM and there is lack of external pressure on retailers to adopt SSCM practices. Customers of Kolkata are still not sensitive towards environmental degradation and do not demand environment-friendly practices from their retailers.

(ii) Sustainable purchasing and logistics practices:

Items 9a-9d and 10a-10v in the questionnaire relate to the sustainable purchasing and logistics practices (product and process design, packaging, storage and transportation). Table 2 shows the descriptive statistics.

Table 2: Descriptive statistics relating to sustainable purchasing and logistics practices

Questionnaire item	Mean	Standard Deviation
9a	4.5	2.1
9b	2.9	0.71
9c	3.1	0.87
9d	2.3	0.82
10a	4.5	0.70
10b	4.5	0.80
10c	4.4	0.84
10d	4.4	0.82
10e	3.2	0.72
10f	2.7	0.83
10g	3	0.92
10h	3	0.74
10i	2.3	1.02
10j	3.2	0.85
10k	3.4	0.78

10l	3	1.02
10m	2.3	0.94
10n	3.2	0.91
10o	2.9	0.85
10o	4	0.87
10p	3.8	0.69
10q	3.9	0.85
10r	4	0.68
10s	3	0.98
10t	3.9	0.64
10u	2.3	0.69
10v	3	0.72

The following observations are made from Table 2:

- Except 9a, all other items, 9a-9d relating to product design and process, have very low means score. Though retailers in Kolkata are using environmental process, a very small percentage of the respondents agree or strongly agree with the fact since the respondents vary by 2.1 units. This shows heterogeneity in their responses.
- Large format retailers in Kolkata are using environment-friendly packaging and eco labelling, since their mean score is very high. (items 10a-10c and 10p-10r). Thus green packaging and labelling is the high priority to the sustainable process design of retailers.
- Among the items 10d-10f, only 10d has very high mean score implying that large format retailers in Kolkata are selecting or choosing suppliers as per environmental criteria. But they are not pressurizing the suppliers or incentivizing them to adopt sustainability in their operation.
- Regarding optimization of process, using alternative transportation and use of alternative source of energy, very low mean score indicates that Kolkata based retailers are still lagging in this respect.

(i) Collaboration with suppliers

Items 12a-12g in the questionnaire relate to the retailers collaborative relationship with suppliers to maintain sustainability in supply chains. Table 3 shows the descriptive statistics.

Table 3: Descriptive statistics relating to collaboration with suppliers

Questionnaire item	Mean	Standard Deviation
12a	2.9	0.80
12b	3	1.72
12c	3.2	0.85
12d	3.1	0.92
12e	2.3	0.65
12f	2.8	0.96
12g	2.1	0.69

The following observations are made from Table 3:

- All the items above have very low mean score. This shows that large format retailers are selecting the suppliers according to environment criteria though they are voluntarily implemented SSCM. But sustainability in supply chain for large format retailers in Kolkata restricts to adopting green packaging and eco labelling. It is not extended to helping the suppliers with funding, knowledge, guidance, monitoring and appraising from retailers point of view.

(ii) Firm performance

Items 14a-14f in the questionnaire relates to the performance of the large format retailers after implementing sustainability in supply chains. Table 4 shows the descriptive statistics.

Table 4: Descriptive statistics relating to performance of the retailers

Questionnaire item	Mean	Standard Deviation
14a	4	0.82
14b	4.2	0.78
14c	4.4	0.78
14d	4.2	0.82
14e	4.5	0.77
14f	4.1	0.69

The following observations are made from Table 4:

- All the items in the questionnaire 14a-14f have very high mean score, above 4 (representing 'Agree' on the scale). And the retailers agree on these points. This indicates that although the adoption of SSCM practices in Kolkata is at initial stage, the respondents feel that doing so they will get benefit in the long run. Large format retailers feel that their production and process efficiency will go up, cost savings in production and distribution will be achieved and the company will get huge corporate image.

Inferential Analysis

Correlation coefficient

Items 14a-14f in the questionnaire relate to firm performance. These can be analysed using Pearson's Correlation Coefficient in the Table 5. The correlation coefficient is statistically **significant** at 5% level.

Table 5: Firm performance using correlation coefficient

Questionnaire Items	14c	14d	14a	14f
	Pearson Correlation Coefficient (p-value)	Pearson Correlation Coefficient (p-value)	Pearson Correlation Coefficient (p-value)	Pearson Correlation Coefficient (p-value)
SSCM	.802 (.005)	.786 (.007)	.791 (.003)	.542 (.006)

The following observations have been made from these tables:

- From the table it is observed that with the sustainable supply chain management, the cost of production and distribution and ultimately the overall cost of retail companies or large format retailers are going down. All the respective correlation coefficients are 0.802 and 0.786
- With the Sustainable supply chain management retail companies or large format retailers' production efficiency and productivity has been hugely improved. And the companies' production capacity has also been improved.
- With the implementation of sustainable supply chain management retail companies or the large format retailers enjoy corporate image to the outside world. The result is robust because all correlations are statistically significant.

5. Major findings

- The concept of sustainable supply chain management in Kolkata based large format retailers are still in its infancy. The rate of adoption of SSCM is still very low.
- The regulatory environment does not enforce the adoption of SSCM practices this sectors. Also there are not enough external pressures from customers and competitions for making supply chains sustainable. The retailers adopting sustainability for regulatory compliance are not found to engage in SSCM practices to a significant extent.
- Also, there are not enough external pressures from customers and competitors for making supply chains sustainable. As mentioned before, the awareness of sustainability among Kolkata's customers is low.
- The retailers who had adopted some form of SSCM were the respondents to the survey, and most of them adopted SSCM practices voluntarily, not for regulatory compliance or under customer and competitive pressure. As Flint and Golicic (2009) note, in the short term regulations may be appropriate for compliance, but in the longer term it is necessary to rely on market pressures for implementation of SSCM.
- Firms that have adopted SSCM voluntarily are not found to engage in SSCM practices to a significant extent. However, had they done so, they would have been better off since results show that supplier collaboration is positively related to sustainable product design and logistics, which in turn has a positive impact on competitiveness and economic performance.
- It seems that since the majority of the respondent firms adopted SSCM practices voluntarily, and not under regulatory, customer and competitive pressure, as evidenced by their mean scores (See Table 1), the motivation towards innovation, patenting and influencing as a consequence of the adoption of SSCM practices has been low. As observed in practice and also from the examples cited in the academic literature, firms are more likely to innovate, patent and influence under regulatory compliance and external pressure from customers, competitors, investors, shareholders, environmentalists, public interest groups and other stakeholders (Porter and Van der Linde, 1995).
- With respect to packaging and storage, large format retailers are well ahead in terms of environment-friendly packaging and storage.
- There is no direct impact of supplier collaboration on firm performance. Rather sustainable logistics has a mediating effect on the relationship between the two. Retailers who have adopted SSCM practices voluntarily are more likely to develop collaborative relationships with suppliers and engage in sustainable logistics practices. Supplier collaboration also has no effect on productivity, probably because of the early phase of implementation of

SSCM in Kolkata. With the increase in adoption of SSCM practices, it is expected that productivity may be increased not only in the short term, but also in the long term through the development of competitive advantages. However, voluntary adoption of SSCM has significant impact on productivity, reinforcing once again the importance SSCM practices to a significant extent for retailers that have voluntarily adopted SSCM.

- It has been also observed that the retailers who have adopted SSCM voluntarily have reaped benefits in terms of productivity, efficiency, and corporate image (Table 5).
- The non-existence of reverse logistics or closed-loop supply chains in India, and particularly in Kolkata, can be attributed to the lack of legislations, awareness, infrastructure and technology, as also observed by Zhu and Sarkis (2004) in the case of China. Like in developed countries, there is no legislation in India that holds retailers responsible for collection/recovery/disposal of their products and packaging after use. The level of awareness of environment-friendly products is also low. The less stringent regulatory norms in India made investments in advanced technologies uneconomical, e.g. the clean fuel the company used worldwide for its engines for fuel efficiency and reduced carbon emissions were not available in India, and importing the same would have been cost-prohibitive. There are evidences that recovery of used products and packaging not only reduces environmental pollution by eliminating the need for disposal and additional resource consumption, but also adds to corporate profitability and enhances corporate image.
- More government intervention and assistance is required to implement sustainability in supply chain.

6. Limitations

Two dimensions of sustainability – economic and environmental have been primarily focused in this study. Therefore, SSCM, as it has been referred to throughout this paper, may as well be referred to as Green Supply Chain Management (GSCM) (Zhu and Sarkis, 2004; Zhu et al., 2005; Giovanni (2012); Zhu et al., 2012; Shi et al., 2012). The reason for dropping the social dimension of sustainability is that there are many aspects of this dimension such as dignity, diversity, human rights, education, indiscrimination, sanitation, healthcare, social security, food security, infrastructure, living condition and so on, which are very broad in concept and may have no direct link with supply chains per se. As noted by Giovanni (2012), it has been extremely difficult to identify the relevant items and measure social sustainability in supply chains. Although research has proposed some general indicators, till date it has not been able to develop a measurement scale to investigate the social bottom line. According to Shi et al. (2012), social aspects depend on the preferences and values of the people involved, and hence are more complex and less clear than environmental issues. Similar observation was made by Hollos et al. (2012), who found that the environmental dimension was

more observable than the social dimension. It has also been observed that while many companies have made progress in terms of environmental and economic issues, significant progress is generally lacking in social issues. Many supply chain managers, who took part in the survey, expressed difficulty in linking the SSCM practices of their firms with the social initiatives and achievements. Customers have not been included in the supply chain which have not been able to draw adequate responses since during the questionnaire design phase of the survey, discussions with the prospective respondents revealed that Indian customers and particularly customers of Kolkata were still lagging behind their U.S. and European counterparts in terms of their awareness towards sustainability and as such there was little or no involvement of customers with manufacturers towards collaborative product and process design, packaging, transportation and distribution of finished goods.

7. Scope of further research

Further studies may include more suppliers and customers and explore a dyadic relationship between suppliers and the manufacturers (Hollos et al., 2012). Only environmental dimensions have been focused here. Further studies may include social sustainability for which relevant factors may have to be identified. More comparative studies between India and other developed and developing countries with respect to SSCM may be taken up by future studies, especially from the point of view of regulatory and cultural differences.

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Appendix

I. QUESTIONNAIRE (for Companies)

1. Name of the company: Division:
2. Address and contact information:
   Phone: Fax: e-mail:
3. Main Product lines:
4. Ours can be best described as an Indian / Multinational company. (Please encircle your response)
5. We are ISO 9000 certified: Yes / No (Please encircle your response) If 'Yes', which year:
   We are ISO 14000 certified: Yes / No (Please encircle your response) If 'Yes", which year:
7. We have implemented Environment Management System (EMS): Yes/ No (Please encircle your response) If 'Yes', which year:
8. We have adopted SSCM practices (Please encircle your response)
   (1: Strongly disagree, 2: Disagree, 3: Neither agree nor disagree, 4: Agree, 5: Strongly Agree)

(a)	Voluntarily	1	2	3	4	5
(b)	To comply with regulations	1	2	3	4	5
(c)	Under pressure from customers	1	2	3	4	5

9. While designing our processes, we do the following (Please encircle your response)
   (1: Strongly disagree, 2: Disagree, 3: Neither agree nor disagree, 4: Agree, 5: Strongly agree)

(a)	use environmental-friendly process	1	2	3	4	5
(b)	use less use of paper	1	2	3	4	5
(c)	increasing use of automation	1	2	3	4	5
(d)	decrease in energy consumption vehicle	1	2	3	4	5

10. In packaging, storage, transportation and distribution of raw materials and finished products, we focus on the following (Please encircle your response)
(1: Strongly disagree, 2: Disagree, 3: Neither agree nor disagree, 4: Agree, 5: Strongly Agree)

(a)	Use of environment-friendly packaging	1	2	3	4	5
(b)	Use of recyclable packaging materials	1	2	3	4	5
(c)	Use of environment-friendly storage	1	2	3	4	5
(d)	Choice of suppliers by environmental criteria	1	2	3	4	5
(e)	Urging/pressurising supplier(s) to take environmental actions	1	2	3	4	5
(f)	Helping suppliers to establish their own EMS	1	2	3	4	5
(g)	Change for more environmental-friendly transportation	1	2	3	4	5
(h)	Use of alternative transport mechanism	1	2	3	4	5
(i)	Optimazation of process to reduce solid wastes	1	2	3	4	5
(j)	Optimization of process to reduce water use	1	2	3	4	5
(k)	Optimization of process to reduce air emission	1	2	3	4	5
(l)	Optimization process to reduce noise	1	2	3	4	5
(m)	Recycling of materials internal to the company	1	2	3	4	5
(n)	Use of alternative source of energy	1	2	3	4	5
(o)	Recovery of the company's end-of-life products	1	2	3	4	5
(p)	Eco-labeling	1	2	3	4	5
(q)	Environmental improvement of packaging	1	2	3	4	5
(r)	Taking back packaging	1	2	3	4	5

(s)	Providing customer with information on environmental Friendly products and/or production methods	1	2	3	4	5
(t)	There is a market for our recovered products	1	2	3	4	5
(u)	Pricing for our recovered products is competitive	1	2	3	4	5

11. The product recovery option(s) that best describe(s) our recovery operation(s) is (are) the following:
Refurbishing/ remanufacturing/ cannibalization/ recycling. [Please encircle your response(s)]

12. With regard to our suppliers, we do the following (Please encircle your response(s))
(1:Strongly disagree, 2: Disagree, 3: Neither agree nor disagree, 4: Agree, 5: Strongly agree)

(a)	Holding awareness seminars for suppliers/contractors	1	2	3	4	5
(b)	Guiding suppliers to establish their own environmental programs	1	2	3	4	5
(c)	Bringing together suppliers in the same industry to share their Know-how and problems	1	2	3	4	5
(d)	Informing suppliers about the benefits for cleaner production and technologies	1	2	3	4	5
(e)	Urging/pressuring suppliers to take environmental actions	1	2	3	4	5
(f)	Arranging for funds to help suppliers to purchase equipment for pollution prevention, waste water recycling etc	1	2	3	4	5
(g)	Sending in-house company auditors to appraise environmental performance of suppliers.	1	2	3	4	5

13. Have you adopted any changes in terms of supply chain management in keeping with the objective of making our planet more green
(a) Yes (b) No.

14. If yes, has there been any improvement in the following. . (Please encircle your response(s))
(1:Strongly disagree, 2: Disagree, 3: Neither agree nor disagree, 4: Agree, 5: Strongly agree)

(a)	improvement in the production capacity and efficiency	1	2	3	4	5
(b)	improvement in sales	1	2	3	4	5
(c)	reduction in cost	1	2	3	4	5
(d)	economy in transaction or distribution cost	1	2	3	4	5
(e)	improvement in prompt delivery	1	2	3	4	5
(f)	improvement in corporate image	1	2	3	4	5

15. Whether you have adopted any means to promote your company's image. (Please encircle your response(s))

(1:Strongly disagree, 2: Disagree, 3: Neither agree nor disagree, 4: Agree, 5: Strongly agree

(a)	Advertising your achievements and activities	1	2	3	4	5
(b)	Sponsoring any events that is promoting social responsibility	1	2	3	4	5
(c)	Participate in any campaign	1	2	3	4	5
(d)	Exhibition of achievements and activities	1	2	3	4	5

16. Any other comments:

Thank you for taking your precious time off to fill out the questionnaire

Name of the respondent: _____ Designation: _____

Mobile: _____ Email: _____ Signature with date: _____

Issues in Management of Intangible Assets in State-Aided Universities

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Abstract: Higher Educational Institutions (HEIs) exist to create and share knowledge. Due to the financial and social pressures, universities are being transformed into more autonomous and competitive organizations to face the challenges of the knowledge based economy. Intangible Assets in HEIs purposely in state-aided universities are needed to be identified, measured and valued for visualizing their hidden value. The present paper attempts to explore the conceptual discussion on the intangible assets and adopts management strategy of the state-aided universities in West Bengal. It also focuses on quality, components, classifications and measurement techniques of intangible assets. The paper deals with patents and copyrights, computer software & e-journal in university arena and underlines challenges of existing management practices in their measurement.

Key-words: Higher Educational Institutions (HEIs), intangible assets, intellectual capital, market capitalization, human capital, relational capital, structural capital.

1. Introduction

Intangible Assets are the long term resources of an entity but have no physical existence. They derive their value from the value they add to other assets. Intangible Assets lack of physical substances and usually are very hard to evaluate. Although Intangible Assets do not have a physical form or financial embodiment they are expected to provide future benefits. "Intangible Assets are all the elements of a business enterprise that exist in addition to working capitals and tangible assets. They are the elements, after working capital and tangible assets, which make the business work and are often the primary contributors to the earning power of the enterprise. Their existence is dependent on the presence or the expectation of earnings." (Valuation of Intellectual Property and Intangible Assets by Gordon V Smith and Russell L Parr, 1994, page 83)

Intangible Assets have been argued to be one possible contributor to the disparity between the value as per accounting records and that as per market capitalization. Considering this argument, it is very important particularly in the present market scenario, to know intangible assets in depth.

The global economy challenges are before business corporations as well as Higher Educational Institutions (HEIs). We will concentrate our discussions for HEIs. Environmental changes, such as privatization, deregulation, diversification, decentralization, internationalization and increased competition, outsourcing is common to all HEIs, and Education is a service which is also intangible in nature. Higher education leaders may derive guidance to manage intangible assets more effectively what may be most important. Intangible Assets in a college or University or HEI owns- its long term image. In the recent years, massive changes in policy, and governance, structure and status of higher education have been taken place all over the world. The management of intangible asset has increased in popularity and credibility as a management tool, as well as research discipline, over the past decade.

2. Literature Review

Itami (1991) described intangible assets as invisible assets and includes technology, consumer trust, brand image, corporate culture as well as management skills. Many other classifications have followed over the past decades after this study.

Richard Hall (1993) introduced the concept of the intangible asset to the strategy management field. Intangible assets are defined as those key value drivers whose essence is an idea or knowledge and whose nature can be defined and recorded in some way. The author splits them into intellectual property (those assets for which the organization has property rights) and knowledge assets (those assets for which the organization does not have property rights).

Nonaka and Takeuchi (1995) first proposed the concept of explicit and tacit knowledge. Explicit knowledge is the knowledge that can be written down, processed by information systems, codified or recorded, and archived and protected by the organization. Tacit knowledge represents knowledge that cannot be written down, exists in people's heads and is extremely difficult to transfer. Both explicit knowledge and tacit knowledge are the intangible assets any organization holds to provide excellent service to their customers.

One of the earliest frameworks for developing intellectual capital used in practice is the Skandia navigator (Edvinsson, 1997). This is a five faceted network, developed by the Swedish Insurance and Financial Services Company, Skandia. It consists of a financial focus, a customer focus and process focus, a renewal and development focus plus an integrating human focus-rather like a Balanced Scorecard with a fifth human perspective, in fact.

Lev (2001) one of the primary advocates for reform of accounting practices around intangible assets, suggests that such assets are now the primary drivers of modern economic activity. As a consequence, their absence from traditional financial statements leaves investors with insufficient information on which to make informed decisions about the (past and future) performance of a business. Indeed Lev goes further, claiming that the lack of accurate reporting on intangibles has probably led to the systematic undervaluation of intangibles, and as a result, also to insufficient levels of investment in these core assets.

Warden (2003) proposes another component which is Cultural Capital. There was very little information from India and almost none from Kolkata. The area remains shrouded in mystery and beyond the reach of many. Most were limited to indirect references to Intangible Asset management or discussed it as a part of larger topic.

Nurnberg, Schapiro and Zimmerman stressed upon educational goodwill which is to be taken to manage effectively. Student satisfaction variables likely indicate the consumption value of different institutions while variables measuring perceived investment benefits are aimed at capturing the job market advantages provided by different institutions. In today's higher education landscape, college & university leaders may well consider principals of brand management to assure their positions vis-à-vis their competitors (Andreea Muntean, 2009).

Intellectual Capital management models provide an efficient methodology to identify measure, manage and spread knowledge; that it is to say, a proper way to improve internal management and transparency at Universities (Ramirez 2013).

The teaching staff and the employees have the obligation to assimilate the values like quality, excellence, innovation, leadership, stability and social responsibility and to promote them in their activity, in shaping students and in their relationships with other people when they are representing the university. Paul Herr in the University of Colorado discusses issues related to brand management and present strategies for developing and extending brands in Higher Education.

3. Research Gap

Intangible assets management is a well accepted in the corporate world as the success of this world depends on the effectiveness and efficiency of the corporate leaders and the pattern of their management and personal skill in context with the management of their intangible assets. The Companies Act, The Income Tax Act etc. are there to guide the management of intangible assets in the corporate form of business entity. In the light of the above mentioned discussions, the paper will attempt to undertake a study on the issue with considerable details in HEIs. There are no existing data or theoretical models to support or disapprove the relationship between the leadership styles and the effectiveness of Intangible Asset Management in HEIs.

4. Significance of the Study

The present paper will focus on management of intangible assets in higher educational institutions and issues associated with their recognition and measurement problem. The results of the study are expected to be very significant in various aspects. The findings would provide the perception about intangible assets in HEIs, the development in Indian higher education over the period of time and the present scenario of intangible assets management in higher educational institutions. It will also highlight problems and prospects in management of intangible assets of HEIs. Thus the paper will try to suggest some measures to develop and improve the mechanism of managing intangible assets in Higher Educational Institutions.

5. Objective of the Study

Effective management of Intangible Assets within the higher educational institutions in a positive manner is called for creating a favorable image of the institution with the aim of attracting intake of students, investments and obviously of valuing the institutions. The present paper will make an attempt to achieve the following specific objectives:

- To explore the conceptual and theoretical framework of intangible assets and their management in state-aided universities.
- To identify the issues associated with the measurement and recognition of the intangible assets.
- To focus on classifications of intangible assets and measurement techniques used in the state-aided universities and present a reasonable conclusion out of the discussion made.

6. Research Methodology

In this article mainly a conceptual discussion on the intangible assets has been made in respect with the higher educational institutions in general and state-aided universities in specific. In the present study mainly secondary data have been used. Necessary data have been collected from different journals, local dailies, annual reports and various circulars, Government Orders, Memorandum etc. issued from the Ministry of Human Resource Department, Govt. of India, University Grants Commission, Department of Higher Education, Government of West Bengal from time to time are also likely to help in assessing the strengths and weaknesses in the intangible assets management of HEIs.

7. Conceptual and Theoretical Framework of Intangible Assets

Generally, assets refer to anything that will produce future cash flows. The most well-known asset types are tangible in nature. Tangible assets only refer to the physical and financial assets of the

organization. Most remarkable feature of tangible assets is that it has physical existence - anyone can see it and touch it. The value of such assets is disclosed periodically, so they can be traced easily from the financial statement of the entities. For example, Physical assets indicate land and building, machinery, inventory, plants, trucks, etc. whereas financial assets refer to the equity, retained earnings, working capital, prepaid expenses, accounts receivables etc.

On the other hand, ***Intangible Assets*** mean which has no such physical appearance but its existence can be felled by the inner-sense and obviously, it has the earning potentiality such as the skills of the workforce and its institutions. Although they are not properly reflected into the financial statements due to difficult determination and translation into monetary figure; but they are increasingly becoming important particularly for determining the higher grade amongst the universities. Thus, these types of assets neither visible to the external world nor to insiders.

The terms intangible assets, knowledge assets/capital or intellectual assets/capital are often used as synonyms (M. Ulmer, 2003). When the term knowledge assets are used in the literature of economics and intellectual capital is used in the management and legal literature, accounting literature has often used the term intangible assets. But all refers essentially to the same thing - the intangible value contained in the heads and relationships of employees, management staff, customers and other stakeholders.

Intangible assets are usually recognized as non-current (long-term) assets because they extend benefits over several years. They do not have a hard shape like property, for example, or plants and equipment, nor do they have obvious financial value, as do receivables and short-term investments. Indeed, intangible assets have been characterized as hidden assets because they are sometimes difficult to identify and to assign an economic value to. One way that has been used to uncover and derive the value of these hidden, intangible assets is to compare the market value of stock to its book value. In fact, the difference between a firm's market value and the replacement value of its physical and financial assets has been used as a value of intangible assets. This market premium has also been used to measure intangible assets. Examples of intangible assets are: trademarks, copyrights, patents, franchises, customer lists, computer software, E-journal and goodwill. Anything should be taken as an intangible asset if it has fulfilled the three criteria which have very rightly specified in accounting standard 26 for intangible assets by the Institute of Chartered Accountants of India – a) identifiable, b) control over resource, c) expectation of future economic benefits.

In this era of sudden changes, success very much depends upon the ability of organizations for efficient use of available intangible assets. Although, various researchers provided a lot of definitions related to intangible assets management, but most of such definitions integrate three emerging constructions: creation of the value, extraction of the value and maximization of the value. So, all definitions show a positive relationship between intangible assets managements and competitive advantage.

7.1 Quality of Intangible Assets

Although both intangible and tangible assets have the earning potential but intangible assets are different from the tangible assets due to its unique features. Some of qualities of the intangible assets are given below in respect of universities

- Unlike physical assets intangible assets can be used for many purposes at a time. For example, a customer support system can provide support to thousands of customers at a time. This unique capacity makes intangible assets more superior to tangible assets. In case of universities, students are customers.
- Although intangible assets cannot be owned, but it can be shared with various stakeholders and for growing this kind of assets it is required to careful nurturing.
- Customers (here, students) do not care about the structural assets of the suppliers as they like to deal with human being directly rather than any technological system.
- Sometime intangible assets perform as a substitute of tangible assets like structural facilities ensures the just-in-time procurement processes and real time inventory control systems without any storage warehouses.
- The knowledge economy has extended the opportunity to rely upon inexpensive intangible assets instead of costly physical assets for achieving any predetermined objective.
- Although intangible assets can be owned and managed to some extent but cannot be traded easily because there is no such market.
- High margin of profit can only be reached if any entity leverage their intangible assets instead tangible assets, thus intellectual capital extends more profit than mass-produced solutions.
- Human, structural and relational assets often work together - their inter dependency ensures the core competencies of the entity. So, it is not sufficient to invest in these assets separately, but utmost care to be given upon their judicial mix which will produce the end value.

7.2 Components of Intangible Assets

Intangible assets essentially have two components – intellectual asset it-self like skills, talent, experiences, and expertise of individuals etc. and the output of intellectual assets like brand, copyright, goodwill etc. So, intellectual asset is the main component of the intangible assets which again be reclassified into three distinct types of assets – Human Assets, Structural Assets and Relational Assets.

- Human assets refer to the availability of collective capabilities derived from, skills, talent, experiences, and know-how, expertise of the human resources of the universities particularly required to perform the tasks which have been asked by the university's strategy.

- Structural assets refer to organizational competences such as information systems, networks, technology, knowledge applications, databases, processes routines, policies, culture and other infrastructure required to support the university's strategy.
- Relational assets refer to the external linkage with knowledge users, other customers, suppliers, partners and stakeholders, which have been developed by organizations for procuring and selling goods and services in an easy manner.

The loosest and broadest definition of an intangible asset is that it is an asset that we can neither see nor feel. Using this definition, though, we can come up with a broad range of intangible assets including: patents & copyrights, E-Journals, Computer Software. To this list, we can consider others like Top-notch management, Loyal and well-trained workforce, Technological know-how.

7.3 Classifications of Intangible Assets

According to the procurement, it can be classified into two types:

- Purchased intangibles are recorded at the cost incurred to purchase an intangible asset from another entity, which includes the acquisition costs as well as expenditures made to get the asset ready for its intended use (e.g. legal fees).
- Internally created intangibles are often not recorded on the balance sheet: most costs incurred to internally develop an intangible asset have to be expensed (including Research and Development costs), and only certain costs (e.g. legal costs) might be capitalized (e.g. debit Patent for the cost of defending the patent).

According to the life span, it can be classified into two types:

- Limited-life intangibles are intangible assets which have a limited useful life (e.g. copyrights, patents). Limited-life intangibles are systemically amortized throughout of its useful life using either units of activity method or straight-line method. The amortization amount equals to the difference between cost and residual value of the assets. The owner of the intangible asset, in this case, either credits the appropriate intangible asset account or the appropriate accumulated amortization account.
- On the other hand, indefinite-life intangibles are not amortized because there is no foreseeable limit to the cash flows generated by the intangible asset. Such intangible assets have no legal, contractual, regulatory, economic, or competitive limiting factors. Indefinite-life intangibles, nevertheless, are subject to an impairment test that should be performed at least annually. Examples of indefinite-life intangibles are: goodwill, trademarks, perpetual franchises, etc.

According to the nature, it can be classified into following types in universities:

- *Artistic-related*: Artistic-related intangible assets involve ownership rights to plays, literary works, musical works, pictures, photographs, video and audiovisual material, E-Journals.
- *Consumer-related*: Customer-related intangible assets occur as a result of interactions with outside parties. For example, customer lists contractual customer relationships etc. Here, consumers are students.
- *Contract-related*: Contract-related intangible assets represent the value of rights that arise from contractual arrangements. For example, franchises, licensing agreements, broadcast rights, construction permits, exploration permits, import and export permits, service contracts etc. There are many MOUs between the universities to fulfil, perform research work jointly during a specific period.
- *Market-related*: Marketing-related intangible assets are those assets primarily used in the marketing or promotion of products or services. For example, trademarks, brand names, internet domain names, magazine mastheads etc. The grade which has been given by the peer team may be considered in this context.
- *Technology-related*: Technology-related intangible assets relate to innovations or technological advances. For example, patents & copyrights, trade secrets, computer software programs, product formulas etc.

Amongst many intangibles, only patents & copyrights, computer software and E-Journal have been chosen in our discussion. These three items are more considerable for discussion in case of the state-aided universities. The University Grants Commission, the Higher Education Department, Govt. of West Bengal all has given more impetus on those items.

8. Patents, Copyrights, Computer Software and E-Journal in University Arena

The University should take policy to encourage the development of inventions, and where its resources permit, to reduce these inventions to practice and develop their full potential to the point of practical application. The University is a nonprofit educational institution devoted to teaching, research, and other scholarly activities in the public interest. The University's faculty, staff, and students, as part of their normally assigned duties and scholarly activities, carry on research which may be supported in part, or in whole, by the University from its own resources, or by grants or contracts with outside sponsors. The respective rights and obligations of the University, its sponsors, and its inventors relative to inventions resulting from research at the University are defined by this policy.

An electronic journal is a periodical publication which is published in electronic format, usually on the Internet.

Electronic journals have several advantages over traditional printed journals:

- One can search the contents pages and/or the full text of journals to find articles on a certain subject.
- One can read journal articles on his/her desktop; they need not to be in the Library.
- One can e-mail articles or download them for printing.
- The article will always be available, even when the Library is closed.
- Hypertext links allow anyone to move to different sections within individual journals or articles and can link them to interrelated resources on the Internet.
- Journals can include more images and audio-visual material.
- Journals can be interactive - one can e-mail the author or editor with their comments.

One of the main functions of the university is the creation of new knowledge by research. The university library through its reading materials and services helps in the successful conduct of research programs of the university. In this context, among all the reading materials, periodicals are playing an important role in informing the latest research findings and avoiding the duplication of research work. An increasingly important function of academic libraries today is the provision of right information to their users at the right time. Latest advances in computer applications during the past few decades have brought radical changes in the way information is generated, stored, organized, accessed, retrieved and consumed.

8.1 Measurement Techniques

The academic world has only maintained the distinguished reputation of the senior researchers who had contributed in past but not bother about the meaningful contribution within recent years. This bogus habit could not found in the business world where present standing only depends upon current results. This over reliance upon past achievements may lead to the discrimination of younger researchers in favor of senior staff particularly for allocating the research grants. In this way so many reasons are there which demanded the proper measurement and reporting of the intangible assets particularly in state-aided universities as they run by the public fund – some of these reasons explained hereunder:

- To address the society's demand regarding the comprehensive information about the utilization of public fund, it is very much urgent to report the intangible assets; and it should also improve the transparency in reporting practices of public institutions.
- Measurement of intangible assets allows the university itself to understand current situation and accordingly can adopt and apply any new methods of learning for the betterment of the readers, if feel necessary.

- It should strengthen the relation between university and industry through introducing the common language for developing mutually beneficiary relationship.
- It should explore the present status of research and behind story of any verbosity of senior researchers. Thereby it should have extended the scope to the younger researcher through proper allocation of the research funds.

There are several methods for measuring the Intangible assets in the literature. A thorough revision of all these methods for measuring intangible assets developed in recent years beyond the scope of this paper. Some of these methods were used by different universities for their internal use. Although no one taken as a universal measurement method, but still they exist as a basis to create new methods. According to Luthy (1998) and Williams (2000) all methods can be divided into four main groups:

- **Direct Intellectual Capital Methods (DICM)** – estimate the monetary value of intangible assets by identifying its various components. Once these components are identified, they can be directly evaluated, either individually or as an aggregated coefficient.
- **Market Capitalization Methods (MCM)** – calculate the difference between a company's market capitalization and its stockholders' equity as the value of its intellectual capital or intangible assets.
- **Return on Assets Methods (ROA)** average earnings before tax of an entity and divide them by the average tangible assets of the entity. The result is the entity's ROA which is required to compare with its industry average. Then the difference is to be multiplied by the entity's average tangible assets to calculate average annual earnings from intangibles. By dividing the above-average earnings by the entity's weighted average cost of capital or an interest rate, one can derive an estimate of the value of its intangible assets or intellectual capital.
- **Scorecard Methods (SC)** – identify various components of intangible assets or intellectual capital and indicators and indices are generated and reported in scorecard. SC methods are similar to DIC methods, except that no estimate is made of the monetary value of intangible assets.

The above four main approaches for measuring intangibles have their own advantages and disadvantages. So, the entity has to choose the best one according to the prevailing situations.

There is a strong and positive correlation between universities' expenditure on electronic journals and the volume of downloads of articles per capita. Per capita expenditure and use of e-journals is strongly and positively correlated with papers published, numbers of PhD awards, and research grants and contracts income. These correlations are independent of institutional size.

8.2 Difficulties in Measurement

Usually the management of science is based on the tacit knowledge of senior academics who have served the university for a few decades. The codification of organizational knowledge requires a change of attitude. It takes some skill to recognize, measurement and reporting an intangible asset in the published report. Intangible assets reports are valueless for those who cannot read and interpret them. If the progress of the knowledge-based economy is required to continue, a universally accepted model for measuring the intangible assets and format for proper reporting must require to be developed. The understanding of the idea of intangible assets management is very low among the administrative staff, even though they are the main source of raw data. As a result, required information are not collected in proper form and insufficient human resources databases may also restrict the collection of such information. It is also to be noted that in its infant stage, it is being threatened by several cultural barriers. Some of these cultural barriers to the measurement of intangible assets particularly at universities are explained hereunder:

- **Uncompetitive remuneration** – It creates the eagerness among the employees for seeking extra opportunities such as consulting and training activities outside the university. Another important fact is that, even if the salaries of researchers are increased, the culture of seeking extra employment aside from the university will remain in force as it becomes a habit.
- **Weak leadership** – The chancellor is elected for a five-year tenure which reduces the likelihood of taking any radical decisions. Sometime the high qualified employees of the university are not obeying the leader - they think no one is there to control themselves.
- **High societal status** – A university professor may be discouraged him from 'trying harder,' as there is no threat of unemployment, which is usually an important motivating factor in the labor market.
- **The self-replicating** – Older generations of researchers tend to hire 'people like them'. Similarly, individuals who do not fit the old culture are unlikely to be hired.

When designing an intangible assets measurement tool, one should be aware of the following potential challenges:

- Too many metrics, excessive detail can make complex metrics which very difficult to use;
- Generally, employees tend to do well on what is measured rather than what is not as a result metrics aimed at long-term consequences instead of short-term performance;
- Careful identification of in-process and end-process metrics. In-process metrics are used to help understand what is working. End-process metrics measure process effectiveness. Indicators can measure effects(end-process), activities (in-processes) and resource mix;

- Quantitative metrics often not/less care about the important subjective matters (i.e., qualitative factors);
- Cultural barriers - fear of measurement and new systems, lack of understanding;
- Lack of common definitions and terms;
- Visions and strategies are defined poorly as a result these are not understandable at all and have no such implication upon the individuals' activities.

8.3 Management of Intangible Assets

Asset management, broadly defined, refers to any system that monitors and maintains things of value to an entity or group. When this management tool is applied to intangible assets such as intellectual property, copyright and goodwill etc. the situation is defined as intangible assets management. Intangible asset management is a systematic process of operating, maintaining, upgrading, and disposing of intangible assets cost-effectively within an organization or institution. We lack meaningful performance indicators for intangibles such as the information an institute holds, its image and reputation, its core expertise or its customer relationships. All of them can be vital to the institute's current and future performance, but, if we haven't got relevant performance information, we can't adequately measure them. Intangible asset is an abstract issue. Hence its management is not easy to understand. In fact, very few sources were found which were devoted to intangible asset management.

Intangible assets include patents, copyrights, franchises, goodwill, trademarks, and trade names etc. which are not new but now they have become increasingly important in recent years. Collectively, these intangible assets are referred to as intellectual capital. These can be split into three groups:

- Human Capital,
- Relational Capital and
- Structural Capital

Human capitals are, naturally, its people's skills and their depth and breadth of experience. Human capital includes employees' know-how in certain fields that are important to the success of the enterprise, plus their aptitudes and attitudes.

Relational capital covers all the relationships that exist between the organization and other parties. These can include customers, intermediaries, employees, suppliers, alliance partners, regulators, pressure groups, communities, creditors or investors. Relationships tend to fall into two categories: those that are formalized through contractual obligations with big customers and partners, for example; and those that are less formal.

Structural capital covers a broad range of vital factors. Foremost among them are usually the

institute's essential operating processes; the way it's structured; its policies; its information flows and the content of its databases; its management style and culture; and its incentive schemes. It can also include intangible resources that are legally protected. Structural capital can be sub-categorized into practices and routines, organizational culture and intellectual property.

Intangible assets and intellectual capital are the sources of value and the levers for sustainable institutional performance in today's global competitive environment.

8.4 Management Practices

Different approaches have been developed by researchers in the field of intangible assets management. Most of these models suggest management activities that help to promote the value of intangible assets and to generate wealth through enhancement of competitive advantages. The most important models for intangible assets management are - Meritum model and Wissensbilanz model. Both of these models explain hereunder in brief:

- **Meritum Model**

It has developed by the group of researcher from the European countries for increasing the efficiency of management and helps the entity to disclose relevant and comparable information on timely basis so that prospective shareholders can effectively estimate risk-return profile of the investment opportunity and accordingly take the investment decisions. There are three main stages:

Stage I: Identifications of Intangibles – first of all, the entity must identify all available intangibles that are critical to strategic objective. A final list of intangibles required to be prepared, so that entity should able to undertake the proper actions for maintaining and developing such intangibles for creating the value.

Stage II: Measuring Intangibles – in this stage some industry and entity specific indicators have to be identified for measuring the intangibles. The indicators must have certain specific features like comparability, objectivity, reliability, verifiability and feasibility.

Stage III: Action on Intangibles – in this stage an assessment should be made for judging the effects of previous investment in intangible assets. SWOT analysis may be undertaken for each activity and accordingly new activities related intangibles can be developed and implemented for further value creation. The entity must also be assessed its effects upon both internal users and external users.

- **Wissensbilanz Model**

In the year 2004, it has developed by the Federal Ministry of Economics and Labour in Germany for guiding the management for proper managements of intangibles particularly addressing to the small and medium enterprises. Mainly this guide extended the advice on the principles and methods

which are useful for the development of intellectual capital statements. For applying this model entity must has to formulate its objective explicitly relevant to obtaining performance. There are four distinct stages:

Stage I: It is composed of three steps – first step is to evaluate the initial situation relating to intangible assets, the company's strategy and business. Second step is to recognition of intellectual capital and third step is to evaluate of intellectual capital to get a quick overview of the strength and weakness of available intellectual capital of the entity.

Stage II: its objective is to propose some relevant indicators that are measurable in terms of numbers, so that intellectual capital can be numerically determined.

Stage III: in this stage most important information relating to intellectual capital have to be reported in a structured form.

Stage IV: it is the final stage of preparation of intellectual capital statement which includes correlation analysis and assessment about how it leads to organizational performance.

According to the contingencies approach to the management, there is no single best management solution for a given problems to every entity; rather the solution should be varied from situation to situation. So, in this infant stage of intangibles management, it is worthless to search out the better strategy to manage the intangibles, but it is urgent to develop any generalized approach for proper utilization of available intangibles so that the sustainable competitive advantage can be achieved. Composing of various models, a generalized approach for management of intangible assets has given hereunder as an easy reference which may not be sufficient to manage the intangibles in an efficient manner but intended to provide the basic understanding of the management process of intangible assets. To ensure the proper management of intangible assets some steps have to be followed by the manager in a sequence manner- which has been explained hereunder:

- **Identify intangible assets** – is a step in that intangible resources are determined and described which have an impact on organizational competitiveness. They can be identified at the organizational level, department level even at the individual level. Online questionnaires, focus groups or interview can be used as tools for collecting data on intangible assets. This step is aimed at recognizing the available intangibles of the entity.
- **Measuring intangible assets** – this phase is started just after recognition of intangible resources available to the entity, department or individual. The measurement is made for each intangible asset to see the extent of its implementation in the entity. Measuring intangible assets aims at extracting the value created.
- **Action plan** – This step involves searching the best way to improve the outcomes obtained from the available intangible assets. Starting the action plan is a proposal process and

determining the correct strategy involving the implementation of corrective actions and reduces the risks associated with the management of intangible assets. The effectiveness of this step contributes to achieving the objectives and maximizing the value.

- **Monitoring of intangible assets** – once the action plan has been implemented, the targets set by the manager must be achieved. The purpose of this step is to proper execution of the action plan so that targeted value must be generated.
- **Report** - in this step, a final report upon the performance of intangible assets are to be presented before the stakeholders so that everyone can understand the stock position of intangibles and their contribution towards the achievements of organizational goal. Management can also follow it for developing the future course of actions and to ensure a *"true and correct picture"* of the state of their affairs. The Institute of Chartered Accountants of India, led by President G Ramaswamy, has recommended that "... accounting standards issued by the ICAI should be made mandatory to educational institutions..." All educational institutions should follow a common format for presentation of its general purpose financial statements (GPFS) to ensure proper accountability, financial discipline, end-use of funds and to meet the needs of stakeholders.

9. Practices in State-Aided Universities in West Bengal

West Bengal is the 4th most populated state located in the eastern part of India. It is one of the largest contributors to the gross domestic product of the country. West Bengal is a pioneer state in providing modern education to the students. The state has many reputed educational institutions, which provide space for higher education. There are 32 universities in the state of West Bengal that are listed under the UGC. After making pilot survey, the following information has been received:

The University of Calcutta (CU) takes initiative to prepare Balance Sheet from the financial year 2011-12 onwards. CU has prepared only one Balance Sheet for 2011-12 and no intangible asset has separately been reported to the Balance Sheet even if there is huge volume of – (1) Patent & Copyrights, (2) Computer Software, and (3) E-Journals.

The Jadavpur University and the Presidency University both have prepared their Balance Sheet up to 2013-14 and 2015-16 respectively. They showed the intangible asset in the same format. The Jadavpur University considered the matter since 2012-13 whereas the Presidency University continues it since its inception.

The Rabindra Bharati University has prepared the Balance Sheet up to 2014-15. Schedule for the intangible asset has not been prepared separately by the institution.

The University of Kalyani has prepared the Balance Sheet up to 2015-16. No schedule for the intangible asset has prepared by them. Equipment and software, E-Journals are separately shown under "Fixed Assets" in the Balance Sheet.

10. Conclusion and Suggestions

Nowadays universities around the world have found that measuring and managing intangible assets can provide them the sustainable competitive advantage. Estimating the value of intangible asset is a very difficult proposition. Although there are several measurement methods but most of the methods are difficult to apply, require too much information, indicators or are not completely described. Some other methods are not numerical at all, only provide the conceptual reference. Intangible assets of different entities can be valued in different ways by different indicators or index. Each entity must select a method depending on its purpose, situation and audience.

The management of intellectual capital by institutions of higher education is becoming more important day by day. In the study on existing intangible assets management and measurement models, it has become clear that a specific model is needed to be developed for these institutions. Nevertheless, universities must adopt management approaches and methods developed in the business sector for managing the available intangibles. The content of intangible assets report should therefore provoke questions – not just give all the answers. The person who prepares of the report ignores from leaving the room for ambiguity - inspired by the accuracy of financial statements they try to copy the structure of a balance sheet. Instead, intangible assets report should include a certain number of questions and scenarios, which the management will try to analyze.

It should not be assumed that universities that do not publish their report are necessarily less advanced in the ways they manage their intangible assets. On the other hand, merely publication of this report does not mean that the institutions are more advanced in management of their intangibles. The report is an institution's attempt to gather and structure certain bits of information - not a decisive proof as to whether it manages its intangible assets or not. Despite all the difficulties, it is not in useless.

The academic community, as well as the general public, assumes that the intangible assets of a university must be reaching the highest levels of excellence and does not require any kind of interference. The measurement of universities' performance is essential if higher-education system is to continuously regenerate itself by the intelligent use of intangibles management. There is a need for more objective and reliable methods for measuring Intangible assets of universities. The introduction of such methods requires:

- Awareness among the academics occupying management positions at universities.
- Creating an intangible assets management task force.
- Developing an index for measuring the intangible assets of the universities.
- Developing a structured reporting format of intangible assets particularly for the universities.
- Ensure the timely implementation of intangible assets management process and publication of the results thereof.

In light of the above discussion and on the basis of experience from the present study a structural format or proper model would be suggested for appropriate reporting of patents & copyrights, E-Journals and computer software by the state-aided universities in the state. Besides this, other items of intangible assets would also be included under the head of Fixed Assets and their reporting would be suggested indicatively.

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Role of Higher Educational Institutions in Developing Socially-Relevant Entrepreneurship through the MSME Mechanism – A Study with Special Reference to West Bengal

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Abstract: In a developing country like India, Micro, Small and Medium Enterprises (MSME) have immense scope to effect a positive social change by fostering entrepreneurship among the youth. Moreover, the future economy will increasingly be a knowledge based economy where a technically and educationally empowered individual will have a higher chance of entrepreneurial success. In this light, the present paper attempts at laying down a conceptual framework to holistically integrate the Higher Educational Institutions (HEIs) with the MSME institutional mechanism to develop socially-relevant entrepreneurship with special reference to West Bengal. This has been done through review of relevant literature as well as logically building up the case towards this end, especially by analysing the economic heritage of Bengal.

Key-words: Socially-relevant entrepreneurship, Higher Educational Institutions (HEIs), MSME, inclusive growth, increasingly liberalised economy.

1. Introduction

In the 21st century, India and the globalised world of free market capitalism is an exciting place for persons who are confident of their abilities and steadfast in their belief to reap the greatest reward. The future belongs to an increasingly liberalised economy where entrepreneurship and entrepreneurial talent would be richly rewarded and valued. Prosperity will come to the person who can identify a need, convert it into a feasible idea and give it wings.

The chief quality in a budding entrepreneur should be his enthusiasm towards his cause, in this case an idea which if put into practice could lead to wealth creation and a more equitable distribution of society's economic resources. In the present work, an attempt has been made to undertake a socio-anthropological investigation of the evolution of entrepreneurship in Bengal. There will be an effort to delve into the economic history of Bengal and to trace a line of continuity of business activities to the present times. In the context of current economic and social realities, the study is an attempt at formulation of a strategy where re-

orientation of the Higher Educational Institutions (HEIs) along with re-direction of the already existing MSME mechanism could lead to fruitful nurturing of socially relevant entrepreneurship within an increasingly equitable society.

2. Research Methodology

The present study is based on secondary data only which has been collected after intensive reading of published literature on the subject - both from e-journals available on the internet and also from reputed journals and books.

3. Entrepreneurship in Bengal - From the Past to the Present

An entrepreneur must have a fighting spirit and a trying ability. What is indispensable in the journey of an entrepreneur is his patience and deep involvement in his enterprise (Mallick, 2011). However, today's younger generation of West Bengal has a totally antagonistic attitude towards entrepreneurship. Leave alone starting an enterprise, they are in mortal fear of even thinking about starting from zero base to be a profitable value creator. Has this always been the truth about the economic heritage of West Bengal? Let us delve into the business history of Bengal to throw some light on this issue.

- ***The Historical Cliché***

History informs us about Bengal being a cultural landscape. It was the fountainhead of the Indian Renaissance which ultimately gave rise to nationalistic feelings among the Indians. It was the place where a modern synthesis of the western and eastern cultures took place manifesting in a particular way of life known as the *baboo culture*. The pioneers of this *baboo culture* were well-bred and western-educated youth who belonged to the landed gentry -the zamindars - of Bengal. In popular imagination, these *baboos* were patrons of art and music and had a taste for the finer things of life. There are tales galore about their lavish and luxurious lifestyles as well as their indulgences in materialistic pleasures as well as pleasures of the senses.

- ***The Historical Reality***

What the above narration fails to point out is that the Protestant ethos of free capitalist enterprise was also a part of this *baboo culture*. Bengal was also the place where the seeds of the earliest indigenous modern enterprises were sown. When we talk about entrepreneurship as a strategic fit between one's inherent capabilities and the external opportunities available, then we have to look no further than Dwarkanath Tagore, who is regarded as one of the first Indian industrialists and entrepreneurs. He was a self-made man, a visionary and a pioneer in setting up a string of commercial ventures, ranging from banking, insurance to shipping companies at a time when political power was passing from native hands into foreign hands (Kling, 1976). He also purchased the first Indian

coal mine in Ranigunj which eventually became the Bengal Coal Company (Wolpert, 2009). It is important to note that Ramdulal Dey, the millionaire Bengal merchant of late 18th and early 19th centuries, was the foremost name in the chronicle of Indo-American maritime trade during America's early phase of modern globalisation (Chakrabarti, 2006). Motilal Seal, another stalwart of early Bengali entrepreneurship was a businessman par excellence. He had interests in an array of business activities ranging from indigo, silk, salt-petre etc., to iron ore and cotton textiles and had amassed unprecedented wealth (Chakrabarty, 1974). He has been rightly called by Kissori Chand Mitra in 1878 as the 'Rothschild of Calcutta' (Sarkar, 2001).

Another pristine example of early Bengal enterprise was Raja Rajendra Mullick Bahadur who enjoyed the unique distinction of being the only Bengali to have been given the title of both Raja as well as Rai Bahadur by the British for his humanitarian ethos and philanthropic efforts (Suraiya, 2005). He too was a wealthy merchant and an art collector par excellence. The Marble Palace built by him at Kolkata stands testimony to his love for art and architecture (Chatterjee, 1917). Later on, we had the likes of Acharya P .C. Roy, scientist-entrepreneur, founding the first pharmaceutical company of India, Bengal Chemicals during the oppressive days of the Swadeshi Movement (Dasgupta, 2011). The early modern Bengalis were enterprising in their social commitments too. Largest of P. C. Tagore's legacies was the sum of rupees three lakhs which forms the endowment of the Tagore Professorship of Law of the University of Calcutta (Cotton, 1980). In the opinion of Das, (2013), an endowment fund is a good way of channelling private wealth for public purposes. Motilal Seal is also best remembered as the donor of an extensive tract of land, then valued at Rs. 12,000 to the then British Government on which the Calcutta Medical College was built (Third Report, 1847). Even as late as 1947, the number one position for India's largest business house belonged to Sir Rajendranath Mukherji and his son Sir Birendranath Mukherji of Martin Burn and Indian Iron & Steel Company (Mukherji, 2013).

- ***The Historical Interim***

Sometime in the meanwhile, in its obligation to serve the empire, Bengal lost its entrepreneurial zeal. Post-independence, the people of Bengal more so through self-advertisement than through anything else became an intellectual species and the word 'business' came to be looked down upon (dreaded?) in high society. To get a stable and secured *chakri* (job) became the sole aim of most of the youth of Bengal and this trend continues till today. The lack of awareness of the rich heritage of Bengal worsened the matter—the most authoritative work on Dwarkanath Tagore comes from an American scholar: Blair. B. Kling (Partner in Empire: Dwarkanath Tagore and the Age of Enterprise in Eastern India, 1976)

- ***The Present***

The 21st Century India and the world present a lot of opportunities in the entrepreneurial arena.

The nascent startup ecosystem taking roots in our economy presents a whole lot of possibilities to our youth. The future holds hope for the person who is enterprising in his approach and who has the courage and the conviction of turning an idea into an entrepreneurial venture. But sadly, Bengal today remains in a time warp with entrepreneurial zeal among the youth largely absent. There exists a huge conviction gap between the entrepreneurial skills inherently present and the conviction and the courage to transform them into a viable entrepreneurial venture. The present education system is not helping the cause either. The MBA education which was supposed to be the fountainhead of entrepreneurial talent remains extremely a placement central one, where the prime focus is on getting through the two-year programme and securing a job at the end of it. Whether the job requirements match with the career aspirations of the candidate hardly matters. Further we find a hidden or disguised waste of human talent coming out of our other higher educational institutions. These institutions are producing talent in numbers but hardly with the skill set needed to venture into risky but highly rewarding endeavours. In both these cases, one finds these institutions are unable to inculcate in their students the qualities like risk-taking attitude, analytical ability, moral imagination and innovative capacity which are the high watermarks of entrepreneurship.

4. Role of MSME in Inclusive Growth

In the present economic context, when the Government - both at the Central as well as the State levels- is intensely promoting entrepreneurship, especially in the MSME sector, there is a need for the younger generation to come forward and partake in this development. The MSME sector is regarded as the backbone of an entrepreneurial society and its role in bringing about inclusive growth could not be overemphasized (Srinivas, 2013). MSMEs not only play a crucial role in providing large employment opportunities at comparatively lower capital cost but also help in industrialization of rural and backward areas, reducing regional imbalances and ensuring equitable distribution of income and wealth (Srivastaw and Sadhukhan, 2013). Venkatesh and Muthiah (2012) found that the role of MSMEs in the industrial sector is growing rapidly and they have become a thrust area for future growth. They emphasised that nurturing MSME sector is essential for the economic well-being of the nation. In such a scenario, it is only imperative for the younger generation to avail of the already existing MSME industrial mechanism to essay an economic renaissance.

5. Role of HEIs in Encouraging Entrepreneurship

In the above light it would be meaningful to investigate the role of education, especially higher education in inculcating an entrepreneurial spirit in the younger generation. 'The nature and role of education in catalysing entrepreneurship, especially in the highly skilled and knowledge-driven sectors is a topic requiring special attention', (National Knowledge

Commission, 2009). Handscombe et al. (2008) and Hegarty and Jones (2008) describe concrete experiments aiming to create essential life-skills and entrepreneurial capacity among students by embedding entrepreneurship education in existing course provision. Commenting on this Kostoglou (2012) says that such practices require pre-conditions, mind-set of entrepreneurial thinking and a change in the whole educational structure. Thus, there is an urgent need for re-orientation of the present higher educational set-up to cater to the growing need for business ideas that are profitable and equitable in the long run.

Shane and Venkataraman (2000) argue that the field of entrepreneurship has lacked a conceptual framework that explains and predicts a set of empirical phenomena. Further Kostoglou (2012), opines that the definition of the word 'entrepreneurship' has mainly concentrated on who the entrepreneur is and what he does, instead of concentrating on the sources of opportunities, processes of discovery, evaluation and exploitation of opportunities, and the set of individuals who discover and exploit them. According to D'Souza (2013), the entrepreneur acts as a trigger head to give spark to economic activities by his entrepreneurial decisions and as shown by Bloom et al. (2006), there exists a positive correlation between higher education and entrepreneurship. Individuals with higher educational levels were more likely to engage in entrepreneurial activity, and more educated entrepreneurs created large number of jobs than less educated.

In such a scenario, there is a need to synergistically integrate higher education with self-employment directed entrepreneurship so that higher education by utilising the MSME institutional mechanism and exploiting the inherent entrepreneurial skills could lead to nurturing of socially-relevant enterprises. As Srinivasan (2007) puts it 'If the future demand for labour is going to be in activities which require much more skills, much more education, much more specific training and so on, are we providing them ? .....we are not anticipating future growth in labour demand of specific categories and providing the facilities to train them'.

6. Socially Relevant Entrepreneurship: An Understanding

The talk of inclusive growth and inclusive society will remain a mere rhetoric until and unless it is accompanied by a conscious, constructive and directed effort. Different circumstances call for different approaches. India being a multicultural country with its burgeoning population presents us with unique problems. India stands today at a critical juncture in its quest of becoming a developed nation, on one hand, there is talk of demographic dividend; on the other hand, this talk will be meaningful only when livelihood skills and vocational training are imparted to the young populace. The promotion and development of MSMEs as a means to building an inclusive society cannot be overemphasised. MSMEs are supposed to be the backbone of an entrepreneurial society and are

definitely the backbone of the Indian economy (Katyal and Xaviour, 2015). The urgent need to promote MSMEs towards building an inclusive society rests on the multiplier effect of the MSME movement. In society, this effect gets reflected economically, sociologically and in human development terms. Economically, this movement will provide sustenance to millions of youth of our country enabling them to realize their dreams of a better future. The movement will fuel the entrepreneurial aspirations of the younger generation leading to a more efficient utilisation of resources. This will have sociological reflections wherein reconfiguration of social hierarchy leading to an increasing replacement of caste hierarchy by economic hierarchy will take place, especially in the rural areas. Moreover, with intense focus on women empowerment in the 12th Five Year Plan (2012-2017), there is an urgent need to promote MSMEs among this crucial section of society. With women writing their own destiny, a more inclusive and fundamentally and ethically stronger society could be built up. All these will lead to a better level of human development with a higher standard of living and a more healthy population.

7. Conclusion

The present ground realities in India, especially in the post liberalised era call for a relook of our development strategy. Just by promoting a few industrial behemoths and inviting foreign capital, the objectives of the welfare state will not be met. Too much reliance on the trickle-down effect of growth, which is not very much apparent in India, is not worthwhile either. Rather a direct and aggressive campaign towards inclusive growth is necessary and the encouragement of MSMEs can play an important role here. Nurturing entrepreneurship at the grassroot level apart from requiring a paradigm shift in the mindset must be backed by a proactive infrastructural support too. A better utilisation of the already existing MSME mechanism will only be helpful. One often finds the institutional support mechanism in India misdirected and thus there is a need for a proactive approach here. The future invariably belongs to an increasingly liberalised economy and the need of the hour is to customise a strategy and envision a future which reflects Indian realities, if the benefits of such liberalisation are to reach the people who are 'at the bottom of the pyramid' (Prahalad, 2004)

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Assessment of Women Empowerment: A Study with reference to their Involvement in Family Decision Making in West Bengal

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Abstract: The focus of the study is working wives and non-working wives and their involvement in family purchase and financial decision-making from the perspective of consumer behaviour and women empowerment. Family decision-making pattern of working wives and non-working wives shows that their behaviour varies according to resource contribution, type of decisions and products.

The study is conducted in five districts of West Bengal. The sample of the study consisted of 150 working wives and 150 non-working wives i.e. housewives. The sample was collected from the five districts of West Bengal, i.e., Kolkata, North 24 Parganas, South 24 Parganas, Howrah and Hooghly. The data were collected using a questionnaire based on interview technique.

The context of the research explores the socio-economic variables which significantly contribute to explaining the variation of the family purchase and financial decisions making pattern of working wives and non-working wives. Women's involvement in family purchase and financial decision-making contributes to women's empowerment. The financial decision making is mostly dominated by husbands but the study finds the evidence that the working wives influence in financial decisions is also increasing in the form of joint decisions with their husbands.

Key-words: Working wife, decision-making, involvement.

1. Introduction

1.1 Origin of the Research Problem

In our country, no study has been conducted to investigate the behaviour of working and non-working wives as consumers in the involvement of family purchase and financial decision-making

from consumer behaviour perspective and how such involvement is contributing to their empowerment in the present social scenario. These issues were grossly neglected by the consumer behaviour analysts, marketers, marketing academicians, intellectuals, researchers and even by the feminists with a few notable exceptions. The reason behind such research gap is due to the difficulty in understanding the levels of involvement of working and non-working wives in family purchase and financial decision-making and the degree of association between involvement and socio-economic variables (i.e. age, nature of family, education, annual family income and family size). Moreover, women empowerment from consumer behaviour perspective is subjective and contextual. One recurrent problem in researching working and non-working wives involvement in family decision-making concerns the reliability and validity of the information obtained. There is a general tendency in some working and non-working wives to systematically overestimate their own involvement and authority in family decisions. Besides the problem is to understand the purchase decisions and the role and influence of the working and non-working wives at each stage of the decision making process.

1.2 Interdisciplinary Relevance

This study has interdisciplinary relevance in which behavioural involvement of working and non-working wives in family decision-making will be examined from two perspectives i.e. consumer behaviour and women empowerment. Consumer behaviour, also called consumer psychology is a branch of applied psychology, marketing and organizational behaviour. Women empowerment is also a multidisciplinary field which is integral to industrial and social psychology and aspects of household economy studied in microeconomics. Moreover the concepts of sociology, marketing, economics, anthropology and statistics have been pooled together in the study in order to make it interdisciplinary. This study is interdisciplinary in the sense that it has not been properly represented in the traditional consumer behaviour and neglected in women empowerment studies. It is interdisciplinary because it involves respondents (i.e. working and non-working wives), researcher and evaluator with an aim to connecting and integrating several academic disciplines.

1.3 Significance of the study

Analysis of the behaviour of working and non-working wives on the basis of their involvement in family purchase and financial decision-making from the perspective of consumer behaviour and women empowerment has huge social implications.

From consumer behaviour perspective, by examining various dimensions covered in this study marketers can develop a better understanding of the behaviour of working and non-working wives, their needs, motivations and attitude towards family purchase and financial decision-making. The marketers and marketing academicians may use the findings of this study as a resource while constructing, managing and evaluating their marketing strategies in the Indian context.

Women studies centres feminists, intellectuals and women authors can add this new dimension in the domain of women empowerment studies which was not explored earlier by the consumer behaviour analysts, marketers and marketing academicians in the literature of consumer behaviour. Finally, this study will help us to understand whether the society is passing through the transitory phase from patriarchal to equalitarianism society.

1.4 Objectives

- The primary objective of this study is to understand the behaviour of working and non-working wives as consumers from consumer behaviour perspective and to evaluate women empowerment in the context of their involvement in family purchase and financial decision-making.

The secondary objectives are:

- To scrutinize the impact of demographic factors on working and non-working wives involvement in family purchase and financial decision-making.
- To analyze the nature and type of decisions taken by working and non-working wives in families of five districts i.e. Kolkata, North 24 Parganas, South 24 Parganas, Howrah and Hooghly.

2. Survey of Literature

A conceptual framework for the study based on the ideas and concepts gathered from review work of existing literature of both theoretical and empirical nature facilitates in planning the study in a comprehensive manner. It also helps in knowing the previous research works done in that area and acts as a torch for the new researchers. So though the proposed study is new in its subject treatment, an attempt is made here to put together some of the closely related research findings on the area in the Indian context.

2.1 International Status

The review of research and development work in the field of working and non-working wives behaviour with an international status is briefly discussed below.

Over the past thirty to forty years a host of studies have been carried out, mostly in the United States, aimed at developing models of working and non-working wives' behavior and understanding their complex decision making process. The volume of literature that has so far been developed on the theme is scanty. There are a few number of Journals, Articles and Text Book materials which account for the whole of the literature that currently exist in relation to this subject.

Rena Bartos (1989), "The comparison (working women versus non-working women) suggested that working women who had been ignored by marketers, might, in fact represent an opportunity

segment whose behaviour should be cultivated. She entitled working women, "The Invisible Consumer Market". According to Rena Bartos (Pg 19) "We can identify several intertwining motivations for women's employment. Two are economic (necessity and desire for a second income) and two are attitudinal(emotional and psychological rewards)". The study by Rena Bartos is related with this study in order to understand the behaviour of working and non-working wives as consumers and their changing attitude, motivation and self-perception. Although family decision making has been a popular research topic among consumer behaviourists (Davis 1976; Lackman & Lanasa 1993; Wolgast 1958), but there has been a lack of work on family decision making so far.

Involvement is said to reflect the extent of personal relevance of the decision to the individual in terms of her basic values, goals and self-concept (Engel and Blackwell, 1982). Involvement is an internal state variable and indicates the amount of arousal, interest or drive evoked by a particular stimulus or situation (Mitchell, 1979 and 1981).

Jeanne L. Hafstrom and Marilyn M.Dunsing (1978) stated, "It is important to know the reasons wives work, because it may help in understanding their consumer behaviour patterns".

Leon G.Schiffman and Leslie Lazar Kanuk (2005, identified eight distinct stages in the family decision making process which has important implications to understand the role of working and non-working wives in family decision making process.

Amin, Becker and Bayes (1998) split the concept of women's empowerment into three components each measured separately: Inter-spouse consultation index, which seeks to represent the extent to which husbands consult their wives in household affairs; Individual autonomy index which represents women's self-reported autonomy of physical movement outside the house and in matters of spending money; and the Authority index, which reports on actual decision-making power (which is traditionally in the hands of the patriarch of the family).

Empirical information about marital roles in this decision area is generally derived from a single question about who is responsible for paying bills, budgeting, or savings and insurance decisions (Davis, 1976). Evidence indicates that there is considerable variability in role allocations from both cross-sectional and longitudinal perspectives.

Ferber and Lee (1974) used the term "family financial officer" (FFO) to designate the person with the main responsibility for financial decision-making and execution of financial tasks. They applied the concept in their study of recently married couples under the age of 30 to determine the extent to which husbands and wives influence the family's financial behavior.

They found that during the second year of marriage, wives increasingly were more likely to be the FFO than the husband, taking over the payment of bills and keeping track of expenditures. Using multiple regression analysis, they also looked at factors influencing a spouse to serve as the FFO and at determinants of whether the FFO is an individual or the couple acting as a unit.

They concluded that neither education nor employment status of the spouse, but their attitudes affect whether the couple or one person acts as the FFO. The most important variable, however, was the percent of income saved. The higher the proportion saved, the more likely the husband is the FFO. They also found that if the husband is the FFO, the couple is likely to be more "venturesome" in savings, having more savings in variable dollar form.

Bartos (1977) indicated that career women are much more involved than non-working women in financial activities such as savings account and credit card ownership. Although this study does not provide much direct insight into marital role allocations, it suggests that the knowledge, experience, and product interest of women concerning financial services are undergoing dramatic change. From the available anecdotal evidence and case studies (Duns Review, 1979), one can readily conclude that this demographic trend is likely to bring about profound social changes which are particularly relevant for marketers of financial services.

2.2 Natioanl Status

At the national level sufficent data are not available regarding family purchase and financial decision-making of working and non-working wives. Much remains to be learned about family decision making. The direct involvement of family members in each stage of the decision process represents only a small part of the picture.

National Family Health Survey (NFHS-3), under the stewardship of Ministry of Health and Family Planning,Government of India has provided some important data regarding gender inequality and women's empowerment but no data regarding working and non-working wives invovlement in family decision-making with respect to five districts of West Bengal like Kolkata,North 24 Parganas,South 24 parganas,Howrah and Hooghly are currently available.

Although the notion of women's empowerment has long been legitimized by national development agencies, what actually comprises empowerment, and how it is measured, is debated in the development literature. Feminists and women authors have pointed out that in many ways women empowerment can be measured and suggested that researchers must pay attention to the process in which empowerment occurs.

Giriappa (1988) stated that the role and status of women has been undergoing a continuous change in recent years in both female and male headed households, and the participation of women in decision making has been increasing.

Punam Kumari (1998) observed that women's role was found prominent in petty household issues only. In most of the cases women acted as initiators in deciding about some major household affairs but final decisions were being taken ultimately by men.

Devi and Rayalu (2003) studied that working women perceived higher levels of empowerment

in all the aspects related to self decisions than non-working women. Hence women's participation in economic activities should be encouraged and reinforced to enhance their empowerment status.

Bala and Monga (2004) traced out that employment in addition to enhancing economic independence and occupational status of women, exposes her to new relationships and situations in the world of work and she develops capacity to assert herself and take decisions in family matters and also helps her to effectively participate in decision making on all domestic fronts.

In Indian context, researchers have largely ignored financial decision-making (i.e. savings and investment related decisions) by the working and non-working wives. No data are also found regarding the influencing role of working and non-working wives, their communication process with other members of the family, how they are voicing their views, rights, gender responsibilities and social prestige in the context of family decision making and in many other socio-economic platforms.So far women empowerment has been measured from the perspective of gender inequality,education,household hardship,access to resources,spousal violence,health and nutritional perspective but no study or report of the governemnt of India has yet incorported this new dimension of women's empowerment from the perspective of their involvement in family purchase and financial decision-making.

3. Methodology

Research methodology is the blue print of the research architect. The study was conducted during the year 2014-15 and 2015-16 in five districts of West Bengal State. The main focus of this investigation was to study the involvement pattern of working and non-working wives in family purchase and financial decision-making. A detailed description of the methods and procedures followed in carrying out the research is furnished below.

3.1 Data Source

The study is empirical in nature and the primary data were collected from 300 respondents of 5 districts (Kolkata, North 24 Parganas, South 24 Parganas, Howrah and Hooghly), which include 150 working wives and 150 non-working wives. From each district approximately 30 working wives and 30 non-working wives were selected .The data were collected by visiting the families of five districts according to the plan of work. The secondary data were collected from published sources.

3.2 Data Collection Instrument

The research instrument for collection of primary data was *Interview Schedule*. The Interview Schedule was filled up by the surveyor i.e. researcher on the basis of response of the working and non-working wives.

3.3 Locale of the Study

The study covers five districts of West Bengal i.e., Kolkata, South 24 Parganas, North 24 Parganas, Howrah and Hooghly.

3.4 Sampling Procedure

. purposive sampling and random sampling were adopted for the investigation. The details are given below.

3.4.1 Selection of the population

A total of 300 respondents including 150 working wives and 150 non-working wives were selected for the study. The five districts were purposively selected.

3.4.2 Selection of respondents

Working wives: Female workers working in different government organizations, non-governmental organizations and private organizations such as school, college, bank, Life Insurance Corporation, hospital, agriculture department, horticulture department, education department, zilla panchayat, revenue department were interviewed. The method used for selection of the working wives was random sampling. Thus the sample size of working women was 150.

Non-working wives: The method used for selection of the non-working wives was random sampling. A total of 150 non-working wives from five districts formed the non-working sample for the study.

3.5 Research Time Frame

The primary data were collected at one time and process continued. The data for this research work was collected for a period of 9 months i.e., from 02.12.2015 to 03.08.2015.

3.6 Statistical Tools Used In the Study

The data collected from respondents were scored, tabulated and analyzed using suitable statistical methods. The statistical methods used in the present study are: Frequencies and Percentages, Bar chart and Line chart.

4. Data Analysis of the Findings

Section-A: General Information

4.1 Profile Of The Respondents

The total sample size in this study is 300 which is divided into 150 working wives and 150 non working wives i.e., housewives. The profile of the respondents is furnished in Table 4.1.

Table 4.1: Profile of the Respondents

Working wives	150	50%
Non-working wives	150	50%

In this study the 150 working wives constitute 50% of the total samples and 150 non-working wives i.e., housewives constitute 50% of the total samples.

4.2 The Surveyed Area

The surveyed area is the selected wards of Kolkata and selected regions of North 24 Parganas,South 24 Parganas,Howrah and Hooghly. The areas covered in this study are mixed in their socio-economic perspectives. As the socio-economic background influences the extent of participation in family purchase and financial decision-making an attempt is being made here to include the working wives and housewives of different socio-economic characteristics.

4.3 Socio-Personal Characteristics of the Respondents

Information on socio-personal characteristics of the respondents were presented in Table 4.2.

- *Age*

Age has been measured as the number of calendar years reported to have been completed by the respondent at the time of interview. Based on the completed years respondents were classified as Young (Below 35 years), Middle (35-55 Years) and Old (Above 55 Years).

The data projected in Table 4.2 showed that majority of the working (70%) and nonworking (66%) wives belonged to middle age group followed by young age group. A very less percentage of the women in both the categories belonged to old age group, *i.e.,* above 55 years.

- *Nature of Family*

Family type refers to two way classification of family as nuclear and joint. The basic grouping of mates and their children is called nuclear family and collection of more than one nuclear family on the basis of close blood ties and common residence is called joint family.

A close perusal of Table 4.2 informs us that 70.66 per cent of the working women belonged to nuclear family and 29.33% joint family.

Among non-working women, 42.66 per cent belonged to joint family and 57.33 per cent belonged to nuclear family.

- *Education*

Education was operationally defined as the number of years of formal education acquired by a respondent. The respondents here were grouped into the following two categories: Up to High School and College Level or More.

Information in Table 4.2 indicates that majority of the working wives (77.33%) were having

some college education or more whereas majority of the non-working wives (70%) were having high school education and only (30%) college education or more.

- *Annual family income*

Annual family income refers to the income earned by all the members of the family of the respondents from different sources per year. Categorization of annual income was done as follows: Low income, Medium income, High income

A cursory look at the Table 4.2 indicates that 57.14 per cent of the working wives had medium level of income followed by high level income (22.86%) whereas 47.14 per cent of the non-working women had low level of income followed by medium level income (35.72%).

- *Family size*

Family was taken as a group of closely related persons living together in a single household with a common kitchen. Respondents' families were classified into three categories: Small, Medium and Large having based on the number of members.

Table 4.2: Socio-personal characteristics of the respondents

Respondents / Socio-economic Characteristics	Working Wives (n=150)		Non-working Wives(n=150)	
	No	%	No	%
Age				
Below 35 Yrs (Young)	40	26.66	42	28.00
36-55 Yrs (Middle)				
Above 55 Yrs (Old)	5	3.33	9	6.00
Nature of Family				
Nuclear family	106	70.66	86	57.33
Joint Family	44	29.33	64	42.66
Education				
Up to High School or less	34	22.66	115	70
Some College or more	116	77.33	45	30
Annual Family Income				
Low (<0.85 lakhs)	30	20	71	47.14
Medium (0.85-1.58 lakhs)	86	67.14	63	35.12
High (>1.58 lakhs)	34	22.86	23	17.14
Family Size				
Small (<5 members)	52	34.66	47	31.33
Medium (5-7 members)	87	58.00	68	45.33
Large (above 7 members)	11	7.33	35	23.33

With respect to family size it is clear from Table 4.2 that majority of the working and nonworking wives belonged to medium size family followed by small family size.

Section B: Working Wives And Non-Working Wives Involvement In Purchase And Financial Decisions

Involvement in purchase decisions is an important concept in understanding working and non-working wives' behaviour in family decision-making. Working and non-working wives' involvement in family purchase and financial decision-making contributes to their empowerment. Involvement can be expressed by behaviour but not by attitudes. Working and non-working wives may be involved in purchase of convenience goods, shopping goods, durable goods and non-durable goods. They can also show their involvement in financial and investment decisions like purchase of insurance policies, investment in shares, mutual funds etc. Involvement is a state of motivation, arousal or interest in a process. It is driven by current external variables (the situation, the product and the communication) and the past internal variables (enduring, ego and central values).Its consequences are searching, processing and decision making. In this study purchase involvement of working wives and non-working wives is determined on the basis of the following questions.

a) How much time and effort expended in the undertaking of specific behaviours?

b) How much time they allocated for shopping?

c) How much money was budgeted for purchase?

Analyzing these answers the degree of involvement has been assessed. However, involvement in this study has been used in behavioural aspect which includes searching, questioning and arguing.

Greater searching for information, asking different questions about the new products and higher level of arguing, as part of working and non-working wives' behaviour, would indicate high involvement in a behavioural perspective .On the other hand the lack of questioning about new products would indicate low involvement.

4.4 Association between Socio Economic Characteristics and Involvement

Findings and Analysis

The involvement of working wives and housewives in family purchase and financial decision making fundamentally influence them as consumers. The attitudinal predictor of involvement is assessed with the help of Likert type scale .The respondents are trichotomized (low, medium and high) on the basis of scores obtained by them. The analysis is based on Chi-square test, Cramer's V and Contingency coefficient.

Due to presence of existing knowledge in this area the following hypotheses have been proposed.

H_{01}: Age has no significant impact on the involvement of the working and non-working wives in

family purchase and financial decision making.

H_{02}: Nature of families has no significant impact on the involvement of the working and non-working wives in family purchase and financial decision-making.

H_{03}: Education has no significant impact on the involvement of the working and non-working wives in family purchase and financial decision-making.

H_{04}: Annual family income has no significant impact on the involvement of the working and non-working wives in family purchase and financial decision-making.

H_{05}: Family size has no significant impact on involvement in family purchase and financial decision-making.

In order to test the above mentioned hypotheses the Chi-square (χ^2) has been used as a test statistic.

Implications

The analysis clearly projects that significant association exists between socio-economic characteristics and involvement of working wives and housewives in purchase and financial decision-making in the family. However, the association is found to be low to moderate in all cases, which is more or less same for working and non-working wives of all the five districts. Both the values of Contingency Co-efficient and Cramer's V indicate that the socio-economic predictor variables *age, education and family size* affect involvement of the working wives and non-working wives in a bigger way compared to the other predictor variables like nature of family, education and annual family income. The results of different tests are summarized in the Table 4.3.

Table 4.3: Results of Chi-square Analysis, Cramer's V, Contingency Co-efficient

VARIABLES	χ^2 Value	Null Hypothesis	Cramer's V	Contingency Coefficient	Implications
Age and Involvement	91.25#	Rejected	0.30	0.39	Moderrate involvement
Nature of Family and Involvement	27.14#	Rejected	0.23	0.22	Low level of involvement
Education and Involvement	75.21#	Ejected	0.38	0.36	Moderrate involvement
Annual Family Income and involvement	57.75#	Rejected	0.24	0.32	Low to moderate involvement
Family Size and Involvement	114.34#	Rejected	0.33	0.43	Moderrate to high involvement

# indicates that it is significant at both levels i.e. 0.05 and 0.01.

Part C: Nature And Type Of Decisions Taken By Working And Non-Working Wives In The Five Districts

H_{06}: Working wives of five districts exert more influence in consumer decision-making than their nonworking counterparts.

Findings presented in Table 4.4 generally support this hypothesis. Results show that 14 out of 24 tests identified a significant relationship between wives' work status and the distribution of decision roles.

A careful examination of results in Table 4.4 reveals an interesting pattern. Only in the case of women's clothing there is a clear indication of a stronger decision role by the working wife compared to her nonworking counterpart. In other cases there is a trend of role reversal between working and nonworking wives of five districts. However, the increased purchase decision influence of working wives relative to nonworking wives is evident in the proportions of joint decisions. These results provide support for H5.

In case of grocery products ,the involvement of non-working wives is higher that that of working wives for taking sub-decisions like-"when to buy", "how much to spend " and "where to buy".

In case of furniture the involvement of working wives is higher compared to non-working wives for taking sub-decision "when to buy" but in case of other two sub-decisions like "how much to spend" and "where to buy", the involvement of non-working wives is higher than working wives. Though apparently it seems that non-working wives' involvement is higher than working wives' but it does not mean that working wives are lagging behind than non-working wives i.e. housewives. They show their increasing involvement in family purchase decisions in the form of joint decision-making with their husbands.

However, in all the sub-decisions relating to major appliances the involvement of both working and non-working wives is more or less same. But in case of automobiles purchase the dominance of husband is evident from the Table 4.4 in all the three sub-decisions .In case of electronic goods like TV/Video obviously the role of husband is important but non-working wives are also playing a crucial role in purchase decision of electronic goods. However, the working wives are also showing their increasing involvement in the form of joint decision-making.

In case of saving for future like kind and amount of savings and investments, bank deposit, post office deposits, purchase of LIC etc. the dominance of husband is well established but there is also a tendency among the couples to take joint decisions in the finance related decisions. Similar trend is also followed in case of loan aspects like decision of taking loans, decision of repaying loan etc.

Table 4.4: Distribution of Family Purchase Decision Roles as reported by Working Wives (WW) and Non-working Wives (NW) of Five Districts (N=300)

Product category	Decision Maker	When to buy %		How much to spend?(%)		Where to buy?(%)	
		WW	NW	WW	NW	WW	NW
Grocery	Husband	16	19	31	47	29	41
	Wife	46	54	26	28	32	34
	Joint	38	27	43	25	39	25
		$\chi2$=2.75		$\chi2$=8.12**		$\chi2$=5.18	
Furniture	Husband	15	29	34	59	26	39
	Wife	24	22	9	12	18	20
	Joint	61	49	57	29	56	41
		$\chi2$=5.85		$\chi2$=16.26**		$\chi2$=5.02	
Major Appliances	Husband	27	39	40	64	40	56
	Wife	30	30	11	11	12	18
	Joint	43	31	49	25	48	26
		$\chi2$=4.12		$\chi2$=13.32**		$\chi2$=10.40**	
Automobiles	Husband	76	85	76	87	85	95
	Wife	2	1	1	2	0	1
	Joint	22	14	23	11	15	4
		$\chi2$=2.61		$\chi2$=5.31		$\chi2$=7.92**	
TV/Video	Husband	44	50	62	71	71	64
	Wife	9	14	3	8	3	11
	Joint	47	36	34	21	4	25
		$\chi2$=2.92		$\chi2$=5.01		$\chi2$=3.69	
Women's Clothing	Husband	3	13	2	28	1	10
	Wife	87	70	86	53	85	70
	Joint	10	17	11	19	14	20
		$\chi2$=9.90**		$\chi2$=31.94**		$\chi2$=9.87**	
Saving for future like	Husband	60	85	83	87	84	95

kind and amount of savings and investments, bank deposit, post office deposits, purchase of LICetc.	Wife	5	1	4	2	6	1
	Joint	35	14	12	11	9	4
		$\chi2=15.97^{**}$		$\chi2=0.92$		$\chi2=6.05^{**}$	
Loan aspects like decision of taking loans decision of repaying loan etc.	Husband	40	70	45	80	60	68
	Wife	5	2	13	8	5	8
	Joint	35	28	42	12	35	24
		$\chi2=18.25^{**}$		$\chi2=27.65^{**}$		$\chi2=3.24$	

** The upper $\chi2$ value at 5% for 2 d.f. is $\chi2(.05)=5.99$

5. Conclusion, Implications and Recommendations

The population of this study covers working wives and housewives living in select five districts of West Bengal. This study attempts to explore the impact of socio-economic variables on participation or involvement of working wives and non-working wives in family purchase and financial decision-making. At the conclusion of the study the researcher seeks to examine how far the hypotheses formulated by the researcher have been validated.

The hypotheses formulated by the researcher in some cases are fully supported by the survey data, some are only partially supported and some others are not supported at all. The hypotheses formulated regarding association between involvement and socio-economic variables like age, nature of family, education, annual family income and family size show significant association between involvement and socio-economic variables. However, in almost all cases the correlation is low to moderate which is appropriate for the working wives and non-working wives of all the five districts. As the middle and older aged working wives and non-working wives are highly interested or involved in family purchase and financial decision-making due to their autonomy, it can be concluded that age is a significant variable in this respect.

Working wives belonging to nuclear families show high inclination towards family purchase and financial decision-making compared to working wives of joint families. So, it can be concluded

that working wives of nuclear families will be the dominant decision makers and opinion leaders in the context of family purchase and financial decision-making in the family.

Working wives engaged in services and earning rupees ten thousand to twenty five thousand show a high level of involvement in family purchase and financial decision making. So, it can be concluded that as job opportunities of the working wives increase along with their income and contribution to the family, the number of decisions taken independently by the working wives will increase.

It can be concluded that age, education, annual family income and family size are the important socio economic variables which affect the working wives' involvement in family purchase and financial decision making in a bigger way compared to other variables. The degree of association between socio-economic variables and involvement is low to moderate in almost all cases. This is pertinent in the context of present study because still in Kolkata, Howrah and Hooghly, working wives are not highly involved in all different aspects of the purchase and financial decision-making.

So far as the distribution of purchase decision roles of working wives and non-working wives are concerned, it is evident that working wives exert more influence in consumer decision-making than their non-working counterparts.

The working wives of five districts are generally educated and are the purchasing agent for some of the products the family buys. They are also the "gatekeeper" for many products like major kitchen appliances, new type of breakfast cereals and grocery related decisions. They also decide purchases meant for husband and children. They are cautious buyer.

6. Limitations of the Study and Recommendation for Further Research

The limited scope of the study does not permit generalizations. For instance, the data are gathered from only one spouse and for a select group of products. In addition, the study did not address potential interactions among various predictor variables (e.g., interaction between education and employment status). Analysis is limited to the examination of bivariate relationships. Therefore, replication and extension of the current study among both members of a family over a wider range of products by employing multivariate procedures (e.g., log-linear models) should remain as future research priorities. In particular there exists a lack of interactive and behavioral research on family purchase decision making where the scope for further research lies.

Furthermore, the study is confined to the working wives and non-working wives of five districts. It was not possible to cover the entire population of the state due to deficiency of time and money resources. So, more extensive study is always welcome.

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