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CONTENTS

SUSTAINING TRADITIONAL HANDMADE DESIGNS: LALUDAS SHOE MAKER

Shivakumar Krishnamurti[1] and Lakshmaiah Botla[2]

Laludas Shoe Maker, a traditional shoe designer shop, had been in Bengaluru since 1965, and was started by LaluDass. The business was taken over by his 27-year-old son, Sunil, in 2010. It had sustained in the market for the last 52 years despite facing competition from multinational companies (MNCs) and local players due to its core competence in handmade designer shoes. Along with regular customers, it also served customers who had problems in their feet. Laludas Shoe Maker provided personalized experience to customers based on its USP – the right combination of fit, quality, and craftsmanship. It always delivered aspirational products at affordable prices. It attracted customers not only from Bengaluru but also from other cities and countries after leveraging digital media. There were challenges such as how to sustain its traditional skills, diversify its customer base, and serve existing customers better. Sunil had to make the business lucrative using the available business development strategies.

Keywords: Handmade Designer Shoes, Positioning, Marketing Mix, Customization, Unique Selling Proposition

"The success of the young entrepreneur will be the key to India's transformation in the new millennium."
----------**Dhirubhai Ambani**[1]

Each foot was different and a foot with health problems was more different and required a specialized footwear designed to fit the affected foot. Laludas Shoe Maker, a traditional shoe designer shop, was the destination for customers who were looking for customized shoes to address their specific foot problems. This traditional footwear designer shop could identify an opportunity in this space to find the relevance of handmade shoes in serving this unique and special segment. Technology-driven MNC shoe companies failed to serve this special segment due to lack of scale economies and absence of handmade traditional skills among their employees. The traditional handmade skill was the prerogative of this shoe-making family and was continuing as a tradition from one generation to the next one.

Many handmade traditional footwear designers disappeared from the market due to competition from automated shoe companies. Laludas Shoe Maker was one of the few companies that could find a niche and sustain the demand for their traditional skills to continue. Opportunity identification and creation were considered entrepreneurial skills, and Laludas Shoe Maker could sustain itself in the market for the last 52 years in the metro city of Bengaluru despite facing competition from MNCs only because of its handmade shoe design skills. Having a traditional skill was one thing and making customers aware of its uniqueness was another important dimension in creating a demand for their skills. Laludas Shoe Maker could identify another opportunity through the digital media in meeting potential customers and creating a demand for their traditionally made products. Laludas Shoe Maker had started leveraging the digital

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media in reaching customers and creating awareness about their services. They could attract customers not only from Bengaluru but also from other cities and countries. The challenges they faced included sustaining Laludas Shoe Maker's handmade traditional skills in the face of future competition, diversifying the customer base to create more business, and serving the existing customers better. On the evening of May 14, 2017, a Sunday, Sunil, the co-proprietor of the business, was in a pensive mood, thinking about how to take the business to the next level while leveraging their traditional skills and expanding their customer base.

Company Background

LaluDass, 78, the founder of Laludas Shoe Maker, a traditional handmade designer and custom shoemaker had been doing business in the city of Bengaluru, at Brigade Road, since 1965 (see Figure 1a and 1b). He had relocated with his family from Kolkata to Bengaluru during the early 1960s but originally belonged to the state of Bihar, India. Apart from catering to regular customers, Lalu Das also specialized in meeting the special needs of customers having problems in their feet such as warts, calluses, shape disorders, etc. The business was taken over by LaluDass's 27-year-old son, Sunil, in 2010. Laludas Shoe Maker's services were recognized by the media which spoke about the services of these handmade shoemakers in the print and TV media (see Figures 2 and 3). When asked about what made him, as a 20-year-old, take up such a big responsibility of running a business which was 45 years old, Sunil replied that by taking over his father's business he primarily wanted to serve customers who needed a comfortable footwear and who sometimes were not able to pay for it. He stated that he charged just the cost price from some of his economically weak customers. The other reason was, of course, to continue the tradition of making handmade customized shoes. Laludas Shoe Maker was a family-run business where all the family members took part in its day-to-day activities. The family members who were actively involved in the business were Sunil's motherBhanumati**,**his eldest sister Babitha and her husband, Rahul Banerjee.

Footwear Industry Scenario

In India, during the 1960s predominately and, to some extent, even during the early 1970s, shoes were made by skilled shoemakers who owned small or tiny shops or were running small-scale industries. Even today, there was a tremendous demand for handmade Indian shoes in the world. India had the necessary skills and an enormous potential to make handmade shoes to meet the demands of both domestic and foreign customers. This could serve two purposes: providing employment to these skilled shoemakers while keeping the tradition of making handmade shoes alive and earning foreign exchange[i]. India produced about 13% of the global footwear. However, India was only second to China, which was the largest producer of footwear. Indian domestic footwear industry was estimated to be worth around INR 20,000 crores[ii]. Although India was the second largest producer of footwear, while the average global footwear consumption was 2–3 pairs per person, in India it was only 1.1 pairs[iii]. One other aspect about the Indian domestic footwear users was that it was only the economically weaker section of people who tended to repair and wear their shoes, which provided some employment opportunities to shoemakers, whereas those who were economically better off preferred to buy a new pair of shoes.

About 85% of the Indian footwear market was dominated by the unorganized sector and the annual production of footwear was about 2,000 million pairs in different categories. India exported nearly 115 million pairs, i.e. about 95% of the total production, after meeting its domestic demands. Agra was one of the places in Uttar Pradesh, India, that produced a million pair of shoes a day for domestic customers and European retailers, such as Zara and Clarks[iv]. The organized sector had also gained from the proliferation of retail culture, which was expected to grow at a compound annual growth rate (CAGR) of 11% between 2015 and 2023[v]. Narendra Modi, the Prime Minister of India, and promoter of the 'Make in India' vision, had developed plans for generating US$27 billion from the leather industry by the year 2020). The 'Make in India' program was planned for the growth of the leather industry with a five-year target of 50% in exports during 2016–2020. The industry employed nearly 3 million people out of which 30% were women and the industry was highly labour-intensive. The sector was being planned in the Make in India program to create 250 jobs for every INR 1 crore investment[vi]. Make in India planned for the creation of 2–3 million jobs at the gross root level. Key footwear production centres in India were located in Kanpur and Agra in Uttar Pradesh, and Ranipet, Vaniyambadi and Ambur in Tamil Nadu.

Indian conventional handmade leather shoes were well accepted by the developed world as customers always had a taste for designer shoes, irrespective of their country of origin. Even today in European countries and in the US, handmade shoes are in demand despite the availability of plenty of branded ones. The change in footwear style was transforming rapidly in India also based on lifestyle tastes. Kabir Lumba, MD, Lifestyle International, said, “In India people are now looking to change their shoes in tune with the changes in their clothes”[vii]. Rajiv Gopala Krishnan, President, Bata-South Asia, opined, “Footwear is not just for utility anymore; they are more of a fashion statement”[2].

As shoemaking was an art that had traditionally been passed on from one generation to the next, the skill could be preserved by promoting traditional players with the market creating strategies for handmade design shoes. The demand for men's footwear comprised 55%, women, 30% and kid's footwear makes up the remaining 15% in India[3].

That being the case, Laludas Shoe Maker had an enormous potential to tap and serve niche customer groups like those desiring traditional handmade designer shoes and those having problems in their feet.

Marketing Challenges of Laludas Shoe Maker

One of the biggest challenges faced by Laludas Shoe Maker was the competition from both local and global multinational footwear companies who offered plenty of models and designs at affordable prices. The dominant local traditional players were The Wardy & Co, ManovirajKhosla, Studio Bassam, Mud House and the Leather Boutique, etc.[4] from the city of Bengaluru.

The big shoe manufactures, whose volume of production was very high and who were well-established brand names, such as Bata, Liberty Shoes, Woodland, Red Tape, Lee Cooper, Metro, Puma, Reebok, and Nike, could spend a lot of money on promotions and even offered discounts on many of their products. Using their research and development departments, these companies were also able to introduce new and latest designs easily at a much lower cost. Additionally, they had many outlets all over the country which provided easy accessibility for the customers and easy reachability for the manufacturers. The

market share of shoe companies- large, small and traditionalwas shown in a pie chart (see Figure 4).Adesh Gupta, CEO, Liberty Shoes, said, "There is only 5–6% of the space available for large scale players in the organized sector"[5]. The rest of the space was filled by small and traditional handmade shoe makers.

As a traditional handmade custom shoemaker, Laludas Shoe Maker had to compete with the mechanized bigger players using only handmade skilled workmen. Sunil observed that it was becoming more and more difficult to get skilled labourers. Even if some skilled workmen did join their shop, their continuity was not guaranteed, and many of them tended to be irregular and came late for work. This had a significant impact on the completion of orders taken from the customers. Laludas Shoe Maker had not been able to deliver to customers on a few occasions as promised. When Sunil took over the shoe shop, he decided to change the way the employees were paid. While his father used to pay piece wages to his employees, Sunil introduced daily wages for his employees. That way he followed a system of paying his employees every Saturday evening for the week after they finished their work for the day (see Figure5).

Another major problem faced by Laludas Shoe Maker was procuring quality raw materials for making quality shoes. Laludas Shoe Maker always wanted its customers to decide the type of leather, colour, design, and style. In the case of customers having problems in their feet, they wanted their footwear to be made as per the specifications given by the doctors. In both the situations, Sunil had to make sure that he could get the required materials, both the leather and the colour as desired by his customers. Sunil also ensured that he got the necessary accessories for his customers. Sunil stated that he had two suppliers in Bengaluru to buy the leather from and two other suppliers for other accessories. Sunil also procured quality leather from Ambur, Tamil Nadu (India), on many occasions to meet customers' requirements[6]. As Laludass had been doing business since 1965, procuring the required materials as per the desired quality of leather and colour might not be difficult, but still the availability of the required materials on time would sometimes not happen, causing a delay in the delivery of the footwear as scheduled. Sunil said that "on a few occasions, he had faced problems getting the quality leather as desired by the customers and the colour chosen by his customers".

Apart from the problems mentioned above, until recently, i.e. 2014, potential and prospective customers outside Bengaluru were not aware of the Laludas shoe shop. Those who came to the shop were the regular and repeated customers or their friends. One of the reasons for the lack of awareness even outside Bengaluru was that the shoemaker was not able to spend money on promotions and was, sort of, content with the regular customers who came for giving an order or for getting some repair work done. Even customers having problems in their feet came to Laludass only on hearsay as the shoemaker was not known to many of the medical centres from where customers with foot problems came.

Marketing Opportunities for Handmade Custom Shoes

Pure leather handmade designer footwear is drawing the attention of the present-day youth in India. In the case of Karnataka, India, local tastes, for example, the Mettu Style with AngotiPati and Silsila type Chappal(see Figure 6) in Northern Karnataka[7] is the choice of many urban youth. The young customers found the Mettu Style attractive and unique because of the leathery noise it made. Customers also wanted to own a perfect pair of bespoke shoes, viz. office wear, party wear, bespoke wedding shoes, etc. Sunil

said, "A lot of men keep asking for shoes that will make them look taller than their brides. They want slightly heeled shoes, a little elevation on the inside, and what not[8]."Apart from these conditions mentioned above customers with special needs (health related), such as corns, ankle pain, and height disorder, were also very keen to have handmade designer shoes to cope with their problems. This niche was the privilege of traditional artisans who could serve customers in a personalized way (see Figure 7).

Laludas Shoe Maker was leveraging the medically related customized shoe segment in a bigger way. It served nearly 60 customers during the year 2016–2017 (see Figure 8a). Apart from this, LaludasShoe Maker had a loyal customer base of around 300–500 customers, which included celebrities to IT professionals to blue-collar workers, and international customers who were residing in Austria, UK, UAE, US and Australia (see Figure 8b and 8c).

Positioning Laludas Shoe Maker

Sunil wanted to find a distinct place for Laludas Shoe Maker despite there being many players from the local and MNC companies. Sunil was aware that it was the 'fit' that mattered the most in customized shoes. Sunil was also aware of how customers demanded value pricing and understood the importance of affordable price while negotiating with customers. Laludas Shoe Maker also gathered knowledge about the customers' experience of fit from their post-purchase experiences. In this competitive context, Laludas Shoe Maker had positioned the traditional designer handmade custom shoes as an experience. Their unique selling proposition (USP) was the combination of *fit*, *quality*, and *craftsmanship* to deliver a personalized experience. Laludas Shoe Maker strived for fit, quality, and craftsmanship and delivered aspirational products at affordable prices. Sunil said, "I even delivered some of the shoes at cost price to economically challenged sections". Customers wanted aspirational shoes at affordable prices and Sunil had been practicing this as a value proposition. One customer ordered his second pair of shoes within two months of his experience with the first pair of shoes in terms of fit for his medical needs.

Marketing Mix

Product: As a traditional handmade custom shoemaker, Laludas Shoe Maker paid close attention to detail, craftsmanship, and had an eye for the finer things of customers' taste. Laludas designed and personalized customer experience by the right fit of shoe, choice of leather, colour, width, and sole. The value proposition of the shoe was primarily based on the customized design with a perfect fit. One of the important steps involved in traditional handmade shoes was that the shoes were placed in sunlight for 8 hours to dry naturally. Laludas Shoe Maker offered many designs of footwear to its customers. Some of the popular designs were Oxford shoes, Chinese shoes, leather boots (ankle and knee boots), safety shoes, sandals, slippers, school shoes, formal shoes, casual shoes, designer shoes, stylish shoes, palm shoes, handmade leather soles, and pump shoes (see Figure 9). Customers with medical problems could also choose popular designs for their customized shoes.

Price: One of the factors that helped Laludas Shoe Maker remain in business for more than half a century was the pricing policy it had devised over the years. Apart from the fixed costs, the cost of the footwear was decided by the design, the materials selected by the customers, and the time required to make the footwear. There was no doubt that Laludas's shoe shop offered products suited for different customers

depending on their affordability; it was a shop where customers could get a pair of footwear starting from INR 1800 up to INR 20,000. The customers were happy to pay the price as they felt that they got the pair of footwear they had always wanted. Sunil also said that he just charged the cost price for some of his economically weak customers.

Promotion: Laludas Shoe Maker used both online and offline channels to promote its products. While offline promotion had been primarily through its existing customers, online promotion had been used since 2014 when Sunil's oldest brother-in-law Rahul Banerjee, who is an MBA graduate, helped in setting up online promotions on Google, industrial directories, Yellow Pages, Just Dial, etc. (see Figure 10a and 10b). He is still working to add more features by setting up a website devoted to the business. Sunil mentioned that "the online efforts of Rahul have greatly helped getting more new customers from near and far and to build relationships". Rahul opined that he was very confident that once the online work was completed, the impact on the business would definitely improve. As Rahul was otherwise employed, he could spend time only during his off hours and on holidays. While the online promotions were taken care of by Rahul, Sunil's oldest sister, Babitha, who was a graduate with corporate work experience of about 7 years, was taking care of the back-office operations. Whenever Sunil was busy with outside work, like going for purchase of materials or calling on some suppliers, it was Babitha who took care of the day-to-day operations like attending to phone calls, providing information to customers, etc. When his sister was not available, then his mother Bhanumatiwould attend to the day-to-day jobs.

Place: The retail shoe store was located on Brigade Road in Bengaluru and was a well-known brand among the loyal customers, especially in the city. Laludas Shoe Maker had become a brand name by itself online with its presence on Facebook, Google Business Page, etc. (see Figure 11). LaludasShoe Maker had already initiated steps to have its own website soon.

Customer Experience

The value proposition of customized shoes had evolved out of customer experience over a period. The 'mantra' that kept Laludas Shoe Maker motivated and going for more than 50 years was its customers' positive experience and satisfaction with the fit, design, and value for money. Raja Dutta, owner of Raja Housing, a loyal customer of Laludas said that he was very happy with the fit and the quality of the leather and had recommended Laludas Shoe Maker to many of his friends. LaluDass (the founder) was aware of the fact that during the time he relocated with his family from Kolkata, the demand for quality footwear was not as much as it had risen in the last three decades. However, LaluDass made sure that whoever came to his shop for a pair of footwear returned home happy with the specially designed customized shoe. He was ably supported by his wife, Sunil's mother Bhanumatiwho actively contributed by participating in making the handmade shoes for customers wanting traditional footwear to meet their specific requirements, just like any other worker in the shop. Sunil, who took over the running of the business in 2010, realised that customer satisfaction, which his father LaluDass could give to every customer, was possible only because his father ensured that the customers got the desired quality product which was comfortable and reasonably priced.

Future Direction of Laludas Shoe Maker

Sunil said that he could attract and retain both offline and online customers with his value proposition. The offline customers could be grouped as existing and regular customers, walk-in customers for getting some repairs done, and customers having some health problems in their feet, who constitute about 20% of this category. With regard to online customers, thanks to the efforts of his brother-in-law, Laludas Shoe Maker became visible to hundreds of customers on the Internet and social media. The digital presence had become an important promotional tool since 2014 and the response had been good and growing. His brother-in-law was also working towards creating a website not only to get more new customers but also to develop long-term relationships with online customers. Sunil disclosed that more online customers from within India as well as from abroad were showing great interest in traditional handmade designer footwear.

Sunil had an intensive discussion with his family members about Laludas Shoe Maker's expansion and business development plans. The discussion focused on the following options:

Getting orders from corporates: Sunil was exploring the possibility of getting orders from corporates. He said, "As of now we were able to get orders from only one organization, but we are seriously considering going out to meet corporate houses to see whether we can get more orders". He quoted two reasons for not going ahead with meeting corporate clients. The first reason was the difficulty in getting skilled labour and the second was getting the required materials for delivering on time. As the requirements for these orders would be quite large, he did not want to go ahead until he was sure that he would be able to handle such orders. Sunil mentioned that presently he had four employees working for him. He said that one employee had been with him for more than 5 years and another one was working for about 2 years. The other two employees had been with Laludas for about a year. Sunil opined that he was planning to go to his native place in Bihar and to Agra to get more skilled labourers. He also added that once he took in more labourers, he would have to provide them a suitable place to stay, which again would have to be worked out. He added that he was very much on the job.

Getting orders from schools: Sunil stated that he did get an order from a school through a non-governmental organization (NGO). Since then he had not approached any other school for any orders. He also said that as of now he does not have school visits on his agenda, but may consider this option once he is sure that he has dependable skilled labour who will be available to execute the orders. Sunil agreed that "schools would be a better option for Laludas Shoe Maker in future because the early relationship with students and schools would go a long way in the Laludas Shoe Maker's future".

Getting orders from celebrities: Sunil cited that he got a couple of orders from celebrities and he was able to fulfil the orders to their complete satisfaction. But since then, he had not got any new orders but was in a positive mood to serve celebrities with enriched shoe designs.

Contacting medical and health centres: Sunil recently met a sole maker in Bengaluru who agreed to refer patients with foot problems to Laludas Shoe Maker for designing customized shoes. Sunil was also contemplating visiting medical and health centres from where he could get patients having problems in their feet. Sunil appreciated the idea of sole maker whosuggested him to explore the possibility of

meeting the concerned people of some of the medical and health centres for whose patients he had been providing customized footwear.

Participation in exhibitions and trade fairs: Sunil said that Laludas Shoe Maker had not participated in any exhibition or trade fair so far. This was because of the cost that was involved in renting a suitable stall for showcasing his craft. However, he said that once he is financially in a better position to afford the expenses, he would look at some of the exhibitions/trade fairs taking place within the city or country conducted by India Shoes & Accessories Forum (ISAF)[9].

Getting certification from leather institutes: When asked whether Sunil was interested in attending some courses from any leather institute, he replied that although he was aware of leather institutes both in Karnataka and Tamil Nadu, he was keen on completing his graduation which he could not do because of his involvement in the family business, before enrolling for a certification program.

Getting involved in 'Make in India' program[10]: Sunil was also focusing on how to benefit from the Make in India initiative for better expansion and growth of his business. The Make in India initiative of the Indian government provided multiple measures for skill development and upgradation of skill level of the workforce along with marketing and exporting support. Training would be provided by the Footwear Design and Development Institute (FDDI). The National Skill Development Corporation, Pradhan Mantri Kaushal VikasYojna (PMKVY), The Council for Leather Exports (CLE), etc. were other platforms that could benefit Sunil.

Consolidation of business before expansion: Regarding his plans for the expansion of his business, Sunil stated that he wanted to first consolidate his current business and think about expansion much later. He mentioned that he had the total support of his brother-in-law, his sister, and other family members like his father, from whom he learnt the craft and who was always there to provide the necessary guidance to him, and his mother who always motivated him. However, he explained that only he had to do all the outside work and hence felt that he would not be able to manage his business if he opted for expansion in the current situation. But expansion would be a parallel activity rather than one after the other, his father opined.

To conclude, it must be said that Sunil was very keen to continue his father's business of making traditional handmade designer shoes and take it to the next level. It must also be stated that he understood the kind of competition he had to face not only from other traditional handmade shoemakers but also from the well-established large shoe manufacturers and was aware of the problems that he had to surmount. There was no doubt that Sunil had tremendous support from his family members and all his loyal customers; however, unless he prepared himself to take extra efforts to explore new markets, he might not be able to grow and sustain growth. To achieve his dream, he had to start drawing up an action plan in consultation with his family and well-wishers so that he would be able to realise his dreams in the years to come.

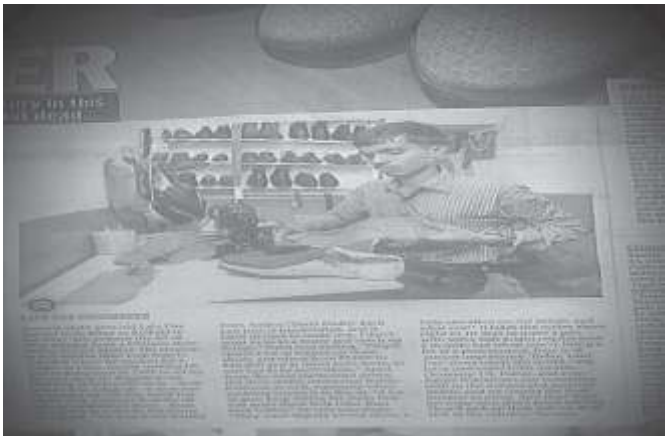
Sunil was contemplating the ways in which he could take Laludas Shoe Maker to the next level and make it a profitable venture. He wanted to focus first on 'promotional' strategies for greater visibility before focusing on the other elements of marketing mix. Sunil was more keen on leveraging digital media for

promoting Laludas Shoe Maker to reach more customers across the globe because the 'world is flat' now.

Figure 1a: LALUDAS SHOE MAKER, HAND-MADE DESIGNER SHOP in 1960's

Figure 1b: LALUDASS, the Founder of LALUDAS SHOE MAKER

Figure 2: SUNIL in the PRINT MEDIA

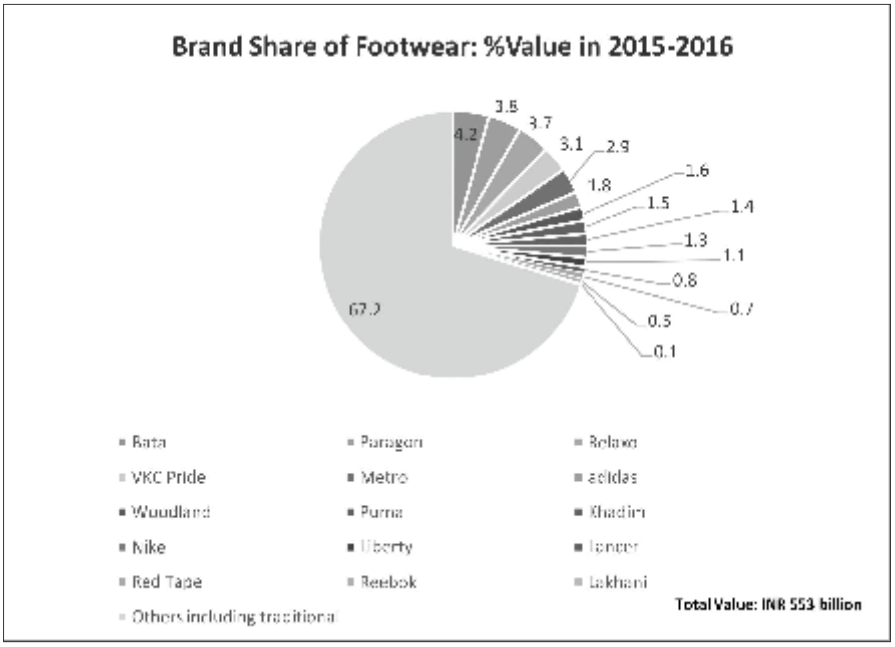


Source: BangaloreMirror, Oct 16, 2016

Figure 3: LALU DASS and SUNIL in Television Media (Tv9)

Source: TV9 program, interviewed on Nov 11, 2016 & telecasted on Nov 14, 2016

Figure: 4: Footwear Players in India



Source: Footwear in India,
Euromonitor International, April 2017, pp. 3-4

Figure 5: **Hand-Made Designers of Laludas Shoe Maker (in work)**

Source: Company Data

Figure: 6: **Silsila Type Chappal and Mettu Style with Angoti Pati in Karnataka State**

Figure 7: Problem in the Feet and the Shoe Design

Figure 8a: PRODUCT PROFILE in 2016-17

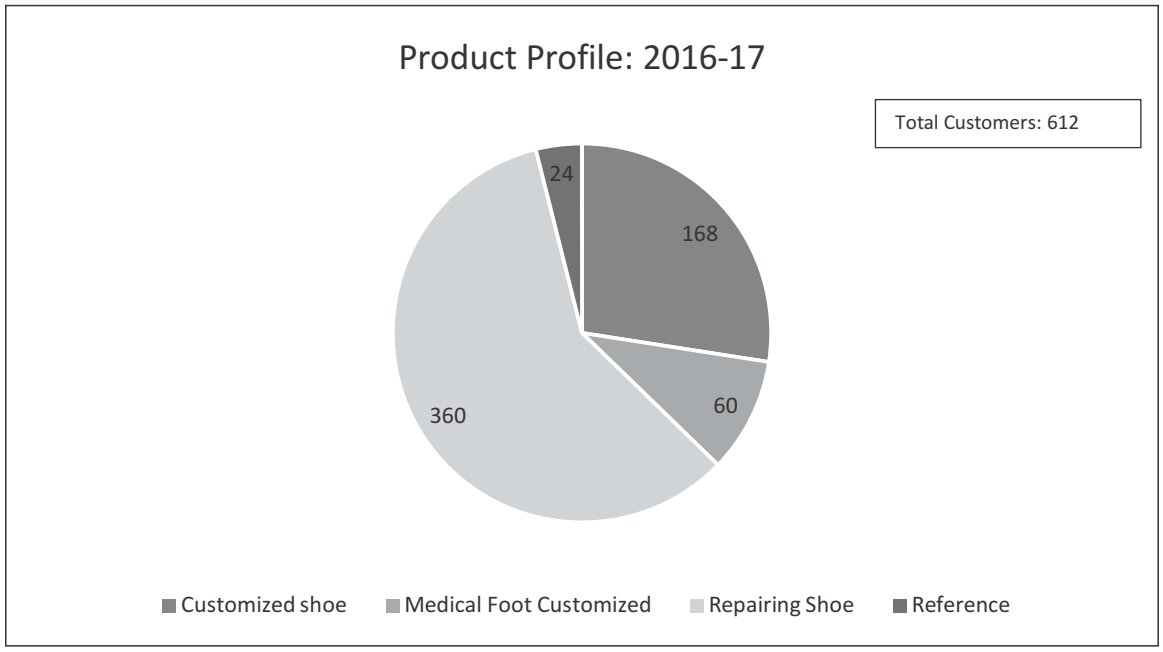


Figure 8b: Customer Visits in 2016-17

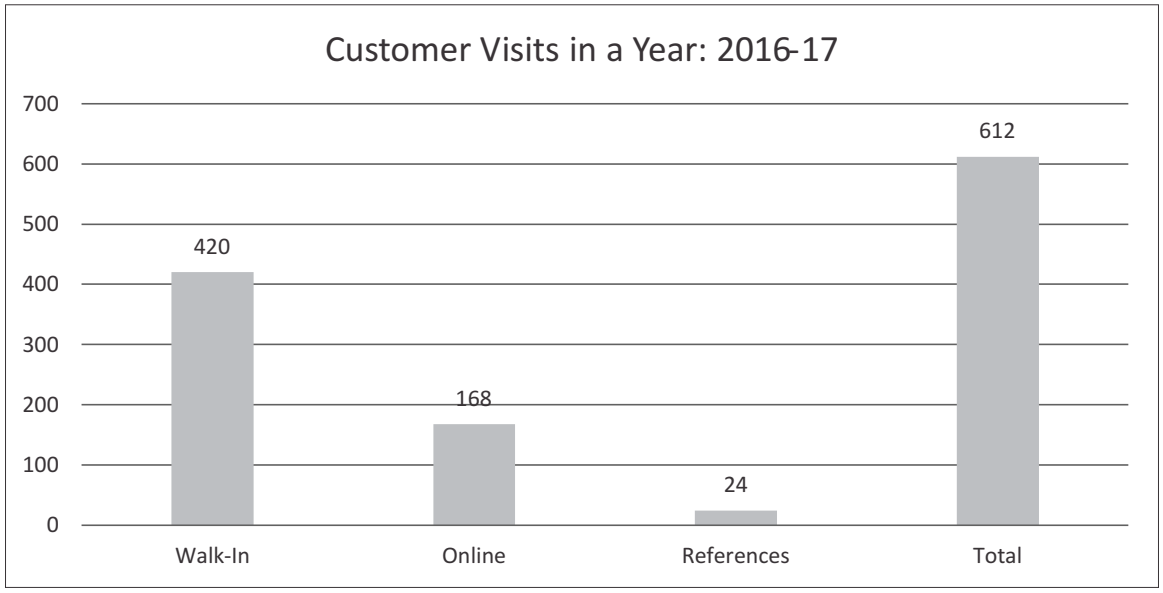


Figure 8c: Customer Profile in the Year 2016-17

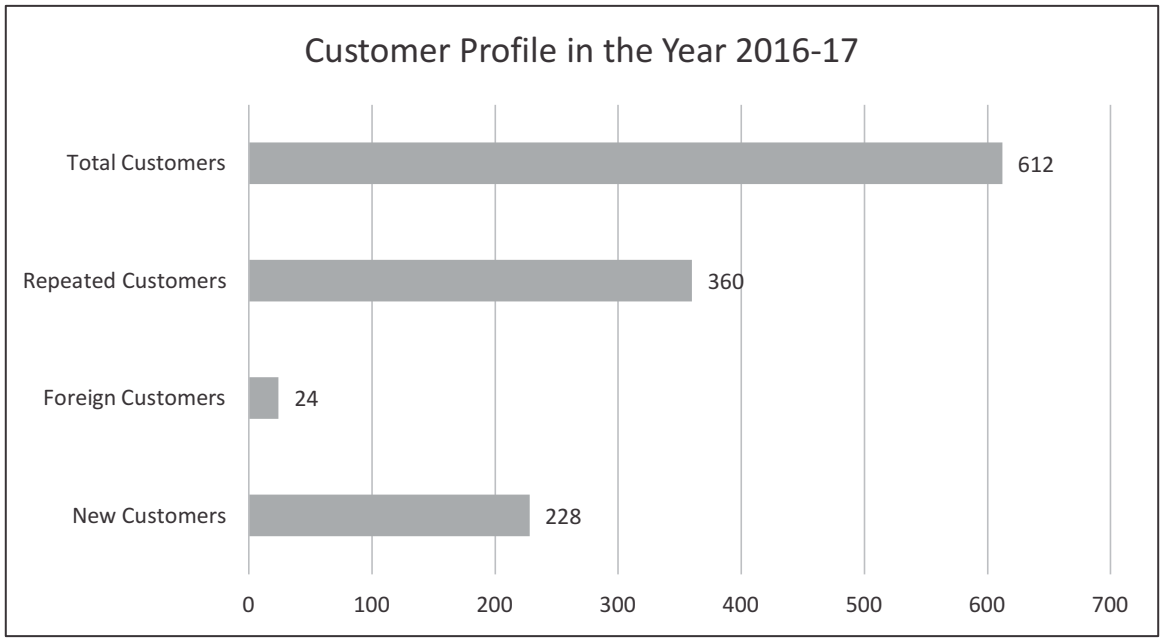


Figure 9: Laludas Shoe Maker Designs

Top line: Ankle boot pointed, Brogue Oxford combination, Sneaker for special insole Hand made

Bottom line: Ankle boots cateer pillar shoe, Boots Leather sole, Designer wear

Figure 10a. Laludas Shoe Maker in Just Dial, Google Search Page

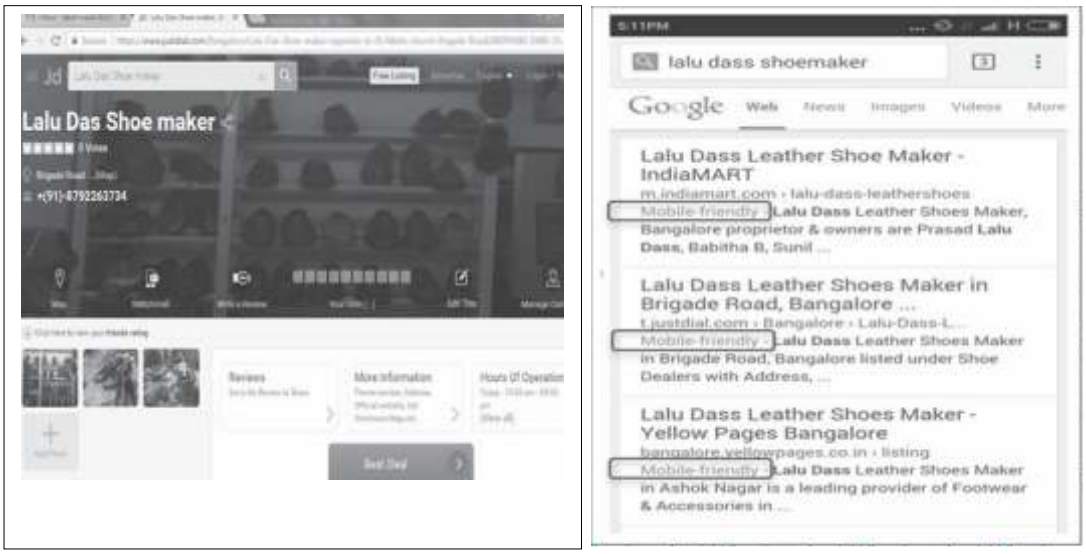


Figure 10b: Laludas Shoe Maker in Digital Media

Figure 11: Laludas Shoe Maker on Facebook

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MEASURING THE EFFICIENCY AND PERFORMANCE OF QUOTED INSURANCE COMPANIES IN NIGERIA: DATA ENVELOPMENT ANALYSIS (DEA) APPROACH

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This study measures the efficiency and performance of quoted insurance companies in Nigeria. Specifically it determines the extent to which quoted insurance companies in Nigeria are efficient (technical, allocative and scale) in terms of their resource utilization and the performance (total factor productivity growth rate) of quoted insurance companies in Nigeria.

In pursuance of the above, the study employs the input oriented data envelopment analysis (DEA) model with four input and output variables. The input variables are management expenses, net premium, shareholders fund and total asset while the output variables are investment income, net claims, profit after tax and market share. These variables were used for the analysis with the aid of input oriented DEAP version 2.1 with variable return to scale assumption using multi stage DEA approach.

The result revealed that quoted insurance companies in Nigeria are relatively inefficient. Only seven companies are technically efficient as the result indicates a mean variable returns to scale technical efficiency score of 59%. On the other hand, we observed that twenty six companies were scale efficient with a mean scale efficiency score of 87% showing that quoted insurance companies are relatively efficient in their choice of scale or size of operations and that Standard Trust Assurance Company (STACO) has the highest peer count. We also discovered the presence of high slacks for management expenses, net profit, shareholders fund and total asset and this shows the degree of inefficient allocation of resources in the Nigerian quoted insurance companies. On the other hand, the output fall (slack) mean of investment income, net claims, profit after tax and market share indicate what the companies would have achieved if the input variables were properly allocated. Finally, we observed that there is no total factor productivity increase in Nigerian quoted insurance companies as only 7 (seven) firms out of thirty-four recorded varying degrees of productivity progress. We therefore recommend possible merger and acquisition of the inefficient companies with the efficient ones in the insurance sector in order to strengthen the insurance companies in Nigeria. We also recommend that the utilization of total asset and shareholders fund be improved upon because they recorded the highest input slack score.

Keywords: Efficiency, Performance, Insurance Companies, Data Envelopment Analysis.

INTRODUCTION

The financial sector is the nucleus of the productive activity of every economy. This is because it serves as the provider of the necessary lubricant that keeps the wheel of the economy turning. It consists of a notable network of institutions ranging from specialized banks, insurance companies, capital market and

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finance companies. Notable among these is the insurance sector. Insurance companies provide unique financial services to the growth and development of every economy. Such specialized financial services range from the underwriting of risks inherent in economic entities and the mobilization of large amounts of funds through premiums for long term investments. The risk absorption role of insurers promotes financial stability in the financial sector and provides a sense of peace to economic entities and this in turn serve as a boom for economic growth and development.

To strengthen the financial system, the Central Bank of Nigeria (CBN) increased the capital base of commercial banks from about N2 billion to N25 billion in 2004 (CBN, 2004). It is on record that following the successful recapitalization of the banking sector, the insurance industry as a component of the financial system also introduced its own reforms by increasing the capital base of insurance firms from N2billion to 10billion in 2005 (NAICOM 2005). These reforms became imperative because of the impact of globalization which has been spurred by incessant integration of the world economies, inadequate capital base of Nigerian firms, dearth of appropriate human capital, poor returns on investment, poor corporate governance structures, the absence of risk management framework and all other problems that have prevented the Nigerian insurance sector from impacting positively on the economy (Adeeko, 2013). National Insurance Commission (NAICOM) proposed recapitalization as an economic strategy that offer numerous benefits relating to higher liquidity, risk minimization, enhanced growth opportunities, increased shareholder value, greater efficiency and requisite capacity to underwrite high risk (Brito, 2006).

In spite of these reforms in the Nigeria insurance markets, research evidence has shown overtime that the Nigerian insurance industry covers only five percent of the nation's insurable population. This may be attributed to the fact that a great proportion of the firms in the insurance markets are still small due to low premium income coupled with the generally poor attitude of the people towards insurance services especially arising from illiteracy, technical recession and communal living (Agiobenebo & Ezirim, 2002; Ahmed, Ahmed, & Ahmed, 2010; Charumathi, 2012). Besides, the performance of the insurance sector in Nigeria in terms of total factor productivity growth has been on the decline in recent times as measured by some indicators such as return on capital, return on asset and profitability to premium income ratio and leverage ratio (Barros & Obijiaku, 2007; Barros, Guglielmo & Ibiwoye, 2008; Usman, 2009). This decline suggests that the firms may be experiencing technical, allocative and scale inefficiencies which may hinder total factor productivity growth in the insurance industry and this is of particular significance. This growth, generated and sustained from efficient operations of the insurance companies is bound to change from time to time. These are indications that quoted insurance companies in Nigeria are inefficient and underperforming. Little wonder then that the technical, scale and allocative efficiency and the performance of quoted insurance companies in Nigeria has been the focus of most research in insurance in recent times. However, from the review of the theoretical and empirical literature, it appears that while many studies on efficiency and performance of the insurance industry have been conducted in developed countries (Diacon, Starkey, O Brien & Odindo, 2002; Rosko, 2002; Wang & Lall, 2003; Fenn, Vencappa, Diacon, Klumpes & O'Brien, 2008; Barros, Nektarios & Assaf, 2010; Karim & Jhantassa, 2017), only a few have been conducted in developing countries like Nigeria (Barros & Obijiaku, 2007; Barros, Guglielmo & Ibiwoye, 2008; Usman, 2009; Osamwonyi & Imafidon, 2016). This study therefore measures the technical, scale and allocative efficiency and the

performance (total factor productivity growth) of quoted insurance companies in Nigeria with the aid of Data Envelopment Analysis (DEA) using the period of 2000 to 2016.

REVIEW OF LITERATURE

Concepts of Technical, Scale and Allocative Efficiency

Technical efficiency is the ability of a firm to maximize output level from a given input level (Farrell, 1957; Debreu 1951 & Koopman, 1951). These concepts combine to yield economic efficiency and technical efficiency is only an integral part of overall economic efficiency. Efficiency can also be considered to be input or output oriented. It is input oriented when it is seen in the light of the optimal mix of input to obtain a given level of output and it is output oriented when it is seen in light of optimal output from a given input. The measurement of a firm specific technical efficiency is based upon deviation of observed output from the best production or efficiency production frontier. If a firm's actual production point lies on the frontier, it is perfectly efficient. If it lies below the frontier then it is technically inefficient with the ratio of the actual to potential production defining the level of efficiency of the individual firm (Herero & Pascoe, 2002; Tahir & Yusof, 2015).

Scale efficiency captures departure of a firm from optimal scale. The measure of scale efficiency provides the ability of the management to choose the optimum size of resources, meaning to decide on the insurance company's size or in other words to choose the scale of production that will attain the expected production level. Put differently, it measures inefficiencies due to the input/output configuration as well as the size of operations. Inappropriate size of an insurance company (too large or too small) may sometimes be a cause of technical inefficiency. This is referred to as scale inefficiency and takes two forms: decreasing returns-to-scale (DRS) and increasing returns-to-scale (IRS). Decreasing returns-to-scale (also known as diseconomies of scale) implies that a company is too large to take full advantage of scale and has supra-optimum scale size. In contrast, an insurance company experiencing increasing returns-to-scale (also known as economies of scale) is too small for its scale of operations and thus operates at sub-optimum scale size. An insurance company is scale efficient if it operates at constant returns-to-scale (CRS)(Osamwonyi & Imafidon, 2016).

Allocative efficiency implies the ability of the firm to optimize input at given prices and at available technology. Farrell (1957) introduced a method to decompose the overall efficiency of a production unit into its technical and allocative components. He characterized the different ways in which a productive unit can be inefficient either by obtaining less than the maximum output available from a determined group of inputs (technically inefficient) or by not purchasing the best package of inputs given their prices and marginal productivities (allocatively inefficient). The allocative efficiency of a firm is manifested in the form of input and output slacks. Input slack shows the deficiency in potential input consumption by the affected firm showing the degree of input over usage. An input slack is the proportion by which input could be reduced and still be able to produce at the same level of output while output slack on the other hand is the proportion by which output could be increased at current level of input. It shows the deficiency in potential output yield of the affected firm, being the amount by which output is under produced by the affected firm. The objective of producers is to reduce or avoid wastage (Simone, 2008; Tone & Tsutsui, 2017).

CONCEPT OF PERFORMANCE

Performance is mostly used as a general wording which involves productivity and efficiency. Performance represents a very general description and could be described as the degree of success which the business has attained in a given period. In other words, performance is a qualitative and quantitative narration of where an individual or a group or an enterprise that is on a work has been able to reach on the way to the goal aimed at, which is related to that work (Ramanathan, 2003).

Favorable performance reflects the effective business model and industrial investment environment of the enterprise as well as the effectiveness of governmental policies. Many indicators have been utilized for measuring performance of an enterprise, such as return on investment, growth rate, turnover rate, and even stock market index. Weng (2009) proposed technological innovation as part of performance including product innovation performance and process innovation performance which mainly measures research and development expenses, new product listing ratio, product cost reduction or profit creation. Kang and Liao (2009) pointed out the indicators for measuring the performance of an enterprise being return on investment, growth rate, turnover rate, liquidity ratio and risk diversification capacity where the higher return on investment, growth rate, turnover rate, and liquidity ratio presented the better performance of an enterprise while the risks should be the smaller the better. Ma (2009) evaluated the performance of an industry with revenue, stability and operating capacity where the major evaluation indicators focused on earning power, productivity, and management performance, covering profit rate, net profit margin, gearing ratio, total asset turnover rate, and employee productivity. Chen (2010) measured performance with earnings per share, sales growth rate and yield rate. Chiu (2010) evaluated the investment strategies and performance of enterprises in Taiwan with sales growth rate, profit rate and employee turnover rate. Performance is considered as an effectiveness indicator especially as it relates to competitiveness of an enterprise (Hu & Shieh, 2013; Liu, Lin & Lewis, 2017).

The concept of performance is closely linked to the issue of productivity. The productivity of a firm is generally defined as the ratio of the output that it produces to the inputs that it uses. Rising productivity implies either more output is produced with the same amount of inputs or that fewer inputs are required to produce the same level of output hence rising efficiency with the outward shift of a production frontier signaling productivity growth. There is a subtle distinction between measuring productivity of a firm and that of measuring change in productivity. In the case of firms producing multiple outputs using multiple inputs, we represent change or growth (or decrease) of productivity by a *total factor productivity* (TFP) or *multifactor productivity index* (MFP). We use TFP and MFP interchangeably although there is a subtle difference between what each of them may include. If we consider the problem of measuring productivity change for a firm period (or year) *s* to period *t*, we assume that the firm makes use of the state of knowledge as represented by production technologies S^s and S^t in period *s and t.* Suppose the firm produces outputs q_s and q_t using inputs x_s and x_t respectively. In some cases, we may have information on output and input prices which represented by output price vectors p_s and p_t and input vectors, w_s and w_t periods *s* and *t* respectively. Given these data on this firm, one way to measure its productivity change is by comparing the observed outputs in period *s and t* with the maximum level of outputs (keeping the output mix constant) that can be produced using $x_{s \text{ and}} x_t$ operating under the reference technology. This is the malmquist productivity index advocated by Caves, Christensen and Diewert (1982).

Production efficiency lies at the base of productivity. Efficiency is part of productivity. Productivity is not a relative concept because productivity of every unit can be measured alone. Because efficiencies of decision units cannot be determined independent from each other in the production system where there are a lot of outputs and inputs, it becomes a relative concept. It is not necessary to make comparisons with other decision unit to measure productivity. However other decision units that will be taken as a reference to calculate efficiency are necessary. One of the important stages of productive efficiency measurements is to decide on correct reference units. At institutional (or micro) level, there are two approaches for measuring the productive efficiency of a firm: parametric and nonparametric. Each approach has its own advantages and shortcomings. The parametric approach tends to focus on production function or cost function of firms in which the estimated function through regression model can be viewed as an optimal function of the firm's system and can be used as the benchmarking frontier (Banker & Maindiratta, 1988). Although this parametric estimation can provide information on confidence intervals and deviations, however, it faces the problem of misspecification in choosing the right functional form and requires large sample (Berger & Humphrey, 1997). In contrast, the nonparametric approach tends to envelop data collected from sampled financial institutions in order to estimate the optimal frontier of the whole sample and then scores each institution by comparing its current level with the optimal one. This approach therefore, is more flexible compare to the parametric approach (Charnes, Cooper & Rhodes, 1978; Färe, Grosskopf & Lovell, 1994; Farrel, 1957) and suitable for non-production institutions. In term of time trend analysis, most scholars tend to refer to efficiency as total factor productivity (TFP) and use distance function (Shephard, 1970) to measure the productivity changes. Caves, Christensen and Diewert (1982) applied the productivity indexes derived from Shephard's distance function to provide the theoretical framework for the measurement of productivity and its changes, which later became the Malmquist productivity index number approach. In the banking industry, this approach was popularly applied to calculate the technological changes and productivity growth (Berg, Forsund & Jansen, 1992; Berger & Mester 1997; Grifell-Tatje & Lovell, 1997; Andre, Herrero & Riesgo, 2016; Joshi & Singh 2017). However, as they all used institutional data for banks or bank branches, their studies can analyze individual bank but not the system as a whole entity.

EMPIRICAL LITERATURE ON EFFICIENCY AND PERFORMANCE OF INSURANCE COMPANIES

Whether or not there are economies of scale in the production of various goods has long been a subject of dispute (Johnston, 1965). This represents the contention of many scholars in the 1970's. However, the production engineers, economist and accountants have in the recent past renewed interest and elicited a number of research studies along the line of production function, cost minimization, scope and scale economies not only in the manufacturing industries but also in the service industries. An attempt to measure firm efficiency started with stochastic frontier analysis (SFA) developed by Aigner, Lovell and Schmidt, (1977) and data envelopment analysis (DEA) developed by Charnes, Cooper and Rhodes (1978).

The stochastic frontier model requires the specifications of the form of the efficient frontier by assuming a specific functional form. SFA specifies an efficient frontier form usually trans-log and assumes a composed error model where inefficiencies follow an asymmetric distribution and the random error term

follows a symmetric distribution, usually normal. DEA puts less structure on the specification of the efficient frontier and does not decompose the inefficiency and error terms. The same characteristics that make DEA a useful analysis tool can also create problems. It is deterministic and gives point estimates that do not provide information about uncertainty in estimation and depends on the correctness of frontier units. Most outcomes of these researches have been able to demonstrate that larger amount of tangible goods and non-tangible goods (services) could apparently be produced at lower unit costs.

It is also important to state that most studies on economies of scale have been based on cost functions (Clark, 1984; Asthon, 2001). The Cobb-Douglas production function has been extensively used in so many empirical analyses of product and factor markets for a study of Du Pont Rayon plants on production characteristics of Insurance Industry in Nigeria among a host of other works (Afolabi & Osota, 2001). Hardwick (1997) examines the effects of increasing competition on the structure of the UK life assurance industry over 1989-1993 by employing a stochastic frontier approach. He reports high levels of economic inefficiency (costs are on average about 30% above the estimated cost frontier) and significant positive economies of scale. Since DEA is a non-parametric technique, statistical hypothesis testing is difficult. Jajri and Ismail (2006) analyzed the trends of technical efficiency, technological change and total factor productivity growth in the Malaysian manufacturing sector for which the data was taken from the Industrial Manufacturing Survey of 1985 to 2000 collected by the Department of Statistics Malaysia using Data Envelopment Analysis.

Friedman and Sinuany-Stern (1998) used the ranking method in DEA to rank industrial branches in Israel according to their level of efficiency and performance. Researchers used two methods based on multivariate statistics, such as canonical correlation analysis (CCA) and discriminant analysis of ratio (DR/DEA). Chandra, Cooper, Shanling and Rahman (1998) used DEA to evaluate the performance of 29 Canadian textile companies using the Cooper and Rhodes model. The inputs used in the study were assets, labor cost and average wage gained by employees per hour of work; the outputs were the revenue and export revenue. The used inputs were the number of labor and average annual investment; whereas the used outputs were the annual sales values. Application of the model has also involved an efficiency assessment of the public sector (schools and hospital) because of their given inputs and outputs which are not measureable in unified units (Friedman & Sinuany-Stern, 1998).

Barros and Dieke (2007) evaluated the operational performance of 31 Italian airports using four data envelopment models. The types of model included: DEA-CCR, DEA-BCC, the cross- efficiency DEA model, and the super-efficiency DEA model. The outputs were measured by the number of planes, number of passengers, cargo, aeronautical receipts, handling receipts, and commercial receipts, and the inputs were labor costs, capital invested and operational costs.

Mwangi and Murigu (2015) investigated the determinants of financial Performance in general insurance Companies in Kenya using multiple linear regressions, with return on assets as the dependent variable for the period 2009-2012. They found that Profitability was positively related to leverage, equity capital, management competence index and negatively related to size and ownership structure. The study did not find a relationship between performance and retention ratio, liquidity, underwriting risk and age. The study recommends that for general insurers in Kenya to perform better they should increase leverage equity capital and quality of staff.

Osamwonyi and Imafidon (2016) studied the technical efficiency of manufacturing companies in Nigeria using data envelopment analysis and found out that quoted manufacturing companies in Nigeria are relatively efficient with thirty-one companies operating on the production possibility frontiers and twenty-seven not operating on it. The results show an average variable returns to scale mean score of 85% and scale efficiency mean score of 76%. They recommended that companies operating in the region of decreasing returns to scale should scale down their inputs while those that are in the region of increasing return to scale should scale up their inputs.

Karim and Jhantassa (2017) evaluated the cost efficiency Of Thailand's life assurance industry using a stochastic frontier approach. They estimated a cost function which constitutes a vector of the output, input price, the inefficiency variable and the random error term to measure how far the life insurer's cost is relative to its best practice. Inefficiency was then modeled as a function of firms' specific variable by regressing it on firm specific variables. These variables are age of firms, firm size and a dummy variable for financial crisis. They found that the industry is on average 60% inefficient. They also investigated the relationship between efficiency and profitability and concluded that inefficiency has substantial effect on profitability of life insurers.

RESEARCH METHODOLOGY

This study measures the efficiency and performance of quoted insurance companies in Nigeria, hence we employ a longitudinal research design. This is based on the fact that the variables under consideration are historical in nature and so the researcher lacks the ability to manipulate the input and output variables due to the fact that they have already occurred. The population of the study consists of all insurance firms that exist and operate in Nigeria as at December, 2016. It is on record that fifty eight (58) insurance companies exist while thirty four (34) of them are quoted in the Nigerian stock Exchange (NSE, 2016). Annual data of (34) Thirty-four insurance companies for the period 2000-2016 was considered. We could not go further because data are not yet available for the year 2017 which is about to end. Thus, we obtained a total of five hundred and seventy-eight (578) observations. All quoted (34) insurance companies constitute our sample for this study.

DEA is a non-parametric technique that uses mathematical programming to estimate the relative efficiency of the decision making units (DMU) by determining a production frontier which is made up of the most efficient companies. The relative effectiveness of a decision unit in DEA is defined as the ratio of the weighted sum of the outputs to weighted sum of the inputs and is also referred to as technical efficiency

The inputs and outputs in this study are then set to measure the efficiency and performance of quoted insurance companies, where the input variables include operating/management expenses (labor, business services and materials in the form of management expenses plus commissions), net premiums earned (total premium earned less reinsurance ceded), total assets (fixed and current assets) and shareholders fund (capital and surplus represented as shareholders funds on the annual report). On the other hand, the output variables are investment income (portfolio of invested assets, premiums, reinsurance and other assets), net incurred claims (total incurred claims less transaction costs /

expenses), total market share (percentage of the total market for insurance that is being controlled by individual companies) and profit after tax (total profit earned after tax deductions). Annual data of (34) thirty four insurance companies for the period 2000-2016 was considered. Thus, a total of five hundred and seventy-eight (578) observations are obtained. Therefore, the choice of input and output variables ensures conformity to the DEA convention that the total number of Decision Making Units (DMUs) be more than three times the number of inputs and outputs while the case mix index is adopted to standardize the data values so that all data values are redenominated to the same units in order to ensure uniformity and reliability of estimates.

In this study, the multi-stage DEA input-oriented VRS (variable returns to scale) approach is used to measure the efficiency and performance of quoted insurance companies in Nigeria because managers of these quoted insurance companies through their activities can exercise some level of control over their input compared to their output. Besides, the varying sizes of these companies make them to operate on variable returns to scale. This is determined by the Banker, Charnes and Cooper's (1984) model stated below

$$Max\ Q_o = \sum_{r=1}^{S} u_r y_r \text{ o} \qquad \text{.....1}$$

Subject to

$$\sum_{i=1}^{m} v_i x_i \text{ o} = 1$$

$$\sum_{r=1}^{s} u_r Y_{rj} - \sum_{i=1}^{m} v_i x_{ij}; \quad j = 1\text{.....n} \quad r = 1\text{.....}s$$

$i = 1$……..m

$u_r, v_i \geq 0$

whereQ_0 = the efficiency score of the DMU that is under consideration. Its value ranges between 0% - 100%. n = number of DMUs in the data set; s = number of outputs; m = number of inputs; y_{rj}, x_{ij} = known outputs and inputs of the *j*-th DMU and they are all positive. u_r, $vi > 0$ = variable (outputs and inputs) weights to be determined by the solution of the optimization problem if convexity constraint,

$$\sum_{i=1}^{m} v_i x_i \text{ o} = 1 \qquad \text{.....2}$$

It implies that the DMU" Q_0"is currently operating at the most productive scale size for the discretionary inputs, given the fixed level of non-discretionary inputs. However, if

$$\sum_{i=1}^{m} v_i x_i \text{ o} > 1 \qquad \text{.....3}$$

It implies that DMU" Q_0" is operating at a scale greater than the most productive scale size for the discretionary inputs. Conversely, if

$$\sum_{i=1}^{m} v_i x_i \, o < 1 \quad \text{.....4}$$

Firm	Constant return to scale Technical efficiency	Variable return to scale Technical efficiency	Scale Efficiency	

then DMU" Q_0" is operating in the increasing return to scale region, at a scale smaller than the most productive scale size for the discretionary inputs, given the fixed level of non-discretionary inputs (Banker, 1984).

To measure the total factor productivity growth, Malmquist Productivity Index (MI) has been developed and used. MI has been used to measure time dependent efficiency of financial institutions by various researchers (Melchor, 1999; Tongzon, 2001). This is determined by the mathematical equation below

$$MI = \frac{\Theta_j^{t+1}}{\Theta_j^{t}} \; X \; \sqrt{\frac{\delta_t^{t}(x_i, y_r)^{t}}{\delta^{t+1}(x_i, y_r)^{t}} \; X \; \frac{\delta^{t+1}(x_i, y_r)^{t+1}}{\delta^{t+1}(x_i, y_r)^{t+1}}} \quad \text{.....5}$$

In this study, to evaluate the changes in efficiency scores of thirty four quoted insurance companies in a fifteen year period, DEA based Malmquist productivity index was utilized. After mathematical modeling of the problem, the input oriented DEAP version written by coelli (1996) software was used to analyze and solve the problem.

DATA ENVELOPMENT ANALYSIS RESULTS

The results of the DEA analyzed include; technical, scale and allocative efficiency, benchmarking and total factor productivity analysis of the company.

Table 1: Technical and Scale Efficiency Scores of Quoted Insurance Companies in Nigeria

AFRICAN ALLIANCE INSURANCE COMPANY PLC	0.718	0.718	1.000	Crs
AIICO INSURANCE PLC.	0.665	0.665	1.000	Crs
ARMLIFE PLC	0.000	0.000	0.000	Crs
AXAMANSARD INSURANCE PLC	0.000	0.000	0.000	Crs
CONSOLIDATED HALLMARK INSURANCE PLC	1.000	1.000	1.000	Crs
CONTINENTAL REINSURANCE PLC	0.000	0.000	0.000	Crs
CORNERSTONE INSURANCE COMPANY PLC.	0.917	0.917	1.000	Crs
CUSTODIAN AND ALLIED PLC	0.242	0.242	1.000	Crs

ENSURE INSURANCE PLC	0.000	0.000	0.000	Crs
EQUITY ASSURANCE PLC.	0.210	0.210	1.000	Crs
GOLDLINK INSURANCE PLC	1.000	1.000	1.000	Crs
GREAT NIGERIAN INSURANCE PLC	0.456	0.456	1.000	Crs
GUINEA INSURANCE PLC.	0.264	0.264	1.000	Crs
INDUSTRIAL AND GENERAL INSURANCE PLC	1.000	1.000	1.000	Crs
INVESTMENT AND ALLIED INSURANCE PLC	0.374	0.374	1.000	Crs
INTERNATIONAL ENERGY INSURANCE PLC	0.676	0.676	1.000	Crs
LASACO ASSURANCE PLC	0.309	0.309	1.000	Crs
LAW UNION AND ROCK INS. PLC.	0.917	0.917	1.000	Crs
LINKAGE ASSURANCE PLC	1.000	1.000	1.000	Crs
MUTUAL BENEFITS ASSURANCE PLC.	0.946	0.946	1.000	Crs
N.E.M INSURANCE CO (NIG) PLC.	0.498	0.498	1.000	Crs
NIGER INSURANCE CO. PLC.	0.228	0.228	1.000	Crs
OASIS INSURANCE PLC	0.930	1.000	0.930	Drs
PRESTIGE ASSURANCE CO. PLC.	0.515	0.515	1.000	Crs
REGENCY ALLIANCE PLC.	0.189	0.189	1.000	Crs
ROYAL EXCHANGE ASSURANCE PLC	0.998	0.998	1.000	Crs
SOVEREIGN TRUST INSURANCE PLC	0.716	0.726	0.986	Drs
SPRINGLIFE ASSURANCE PLC	0.501	0.698	0.717	Drs
STANDARD ALLIANCE INSURANCE PLC.	0.783	0.783	1.000	Crs
STANDARD TRUST ASSURANCE PLC (STACO)	1.000	1.000	1.000	Crs
UNIC INSURANCE PLC	1.000	1.000	1.000	Crs
UNITY(KAPITAL ASSURANCE PLC)	0.539	0.617	0.873	Drs
UNIVERSAL INSURANCE COMPANY PLC	0.577	0.577	1.000	Crs
WAPIC INSURANCE PLC	0.478	0.478	1.000	Crs
Mean	0.578	0.588	0.868	

Source: DEA print out

Table 1 shows the constant technical efficiency scores (CRS), variable efficiency scores (VRS) and scale efficiency scores as stated in the methodology. The industry has mean constant returns to scale technical efficiency score of 58% and mean variable returns to scale technical efficiency score of 59% suggesting that quoted insurance companies in Nigeria are relatively inefficient. On the other hand, the mean scale efficiency score of 87% suggests that quoted insurance companies in Nigeria are relatively efficient in their choice of scale or size of operations. Based on variable returns to scale, the industry could reduce input by 41% and still produce at current level of output. This spells a technical inefficiency of 41%. The result also shows a scale inefficiency of 13% which reflects the amount of inefficiency in the industry due to poor technology.

From the technical efficiency column of table 1, seven companies (21%) out of the thirty-four insurance companies were technically efficient while twenty- seven (79%) insurance companies were technically

inefficient because they had a technical efficiency score below100% under variable return to scale assumption. The technical inefficiency score among the inefficient companies ranged from 18% in Regency Alliance Company plc to 99% in Royal Exchange Assurance Company. This implies that these companies need to scale down input by 82% and 1% respectively to produce the same level of output. This inefficiency could be attributed to inadequacy of management skill in converting input to output which may be due to inappropriate management practices, selection of incorrect input combinations, lack of technical knowhow, increased idle periods, management and staffs incompetence and deficiency in input materials especially arising from low premium income from individuals and private firms compounded by the generally poor attitude of the people towards insurance services.

Scale inefficiency occurs when there is a difference between constant return to scale technical efficiency scores and variable returns to scale technical efficiency scores. When both are equal for any decision making unit it then means global constant returns to scale which implies an efficiency score of 100% suggesting that both frontiers are tangential on the global efficiency frontier. From the scale efficiency column of table 1, (twenty-six) 26 out of the (thirty-four) 34 sampled firms had scale efficiency score of 100%, while eight (8) had scale efficiency scores of less than 100%. This infers that 76% of the sampled firms had most productive size for the particular input-output mix while the remaining 24% are scale inefficient and this may be attributed to the input/output configuration as well as inappropriate scale or size of insurance companies' operations. Of the seven companies that operated on the production possibility frontiers, six companies exhibited constant returns to scale. This shows that they operated at their most productive scale size while the remaining one company (Oasis plc) exhibited decreasing returns to scale which means that the input factors were over employed despite the fact that it is efficient.

Among the inefficient firms, three (3) exhibited decreasing returns to scale (DRS) while none exhibited increasing returns to scale (IRS). A DMU (companies) is said to be operating under decreasing returns to scale if changing all the inputs by the same proportion results in a smaller proportional change in outputs. What this shows is that the input factors are numerically over employed which results in capacity underutilization. Put lucidly, these firms are producing at a smaller level than what their size and input demands, thus no economy in factor input usage. These firms can produce more than they are producing now with even lower input. A DMU (companies) is said to be operating under increasing returns to scale if changing all the inputs by the same proportion results in a greater proportional change in outputs. What this shows is that the input factors are numerically under employed. These companies need to increase their quantity of factors input employment. This also shows that the inefficiency in the affected companies could be attributed to inadequate factor input and hence serious need for employment of more factor inputs. This also implies the tendency of these companies to overuse their current input factors. To operate on the most productive scale the DRS companies should reduce input consumption while IRS companies should increase their use of input and expand output to arrive at the most productive scale.

INPUT AND OUTPUT SLACK SCORES OF QUOTED INSURANCE COMPANIES IN NIGERIA (ALLOCATVE EFFICIENCY)

Input slack shows the deficiency in potential input consumption by the affected firm showing the degree of input over usage. An input slack is the proportion by which input could be reduced and still be able to

produce at the same level of output while output slack on the other hand is the proportion by which output could be increased at current level of input. It shows the deficiency in potential output yield of the affected firm, being the amount by which output is under produced by the affected firm. This is another basis by which the technical efficiency of a typical firm could be viewed.

Table 2: Input Slacks in Naira (#)

Firm	Management Expenses	Net Premium	Shareholders fund	Total Assets
AFRICAN ALLIANCE INSURANCE COMPANY PLC	0.000	0.000	6750380.510	8648841.521
AIICO INSURANCE PLC.	0.000	74451.892	1380838.048	0.000
ARMLIFE PLC	0.000	0.000	0.000	0.000
AXAMANSARD INSURANCE PLC	0.000	0.000	0.000	0.000
CONSOLIDATED HALLMARK INSURANCE PLC	0.000	0.000	0.000	0.000
CONTINENTAL REINSURANCE PLC	0.000	0.000	0.000	0.000
CORNERSTONE INSURANCE COMPANY PLC.	0.000	0.000	2079600.146	427258.765
CUSTODIAN AND ALLIED PLC	0.000	0.000	350541.79	0.000
ENSURE INSURANCE PLC	0.000	0.000	0.000	0.000
EQUITY ASSURANCE PLC.	0.000	0.000	615487.793	0.000
GOLDLINK INSURANCE PLC	0.000	0.000	0.000	0.000
GREAT NIGERIAN INSURANCE PLC	0.000	718274.824	522375.723	0.000
GUINEA INSURANCE PLC.	0.000	0.000	538073.729	0.000
INDUSTRIAL AND GENERAL INSURANCE PLC	0.000	0.000	0.000	0.000
INVESTMENT AND ALLIED INSURANCE PLC	0.000	0.000	1043617.879	531288.007
INTERNATIONAL ENERGY INSURANCE PLC	0.000	0.000	8763875.969	8810280.109
LASACO ASSURANCE PLC	0.000	78887.917	338035.610	0.000

LAW UNION AND ROCK INS. PLC.	0.000	1266334.237	6952921.121	10985644.989
LINKAGE ASSURANCE PLC	0.000	0.000	0.000	0.000
MUTUAL BENEFITS ASSURANCE PLC.	0.000	0.000	1488673.357	1211539.703
N.E.M INSURANCE CO (NIG) PLC.	0.000	585330.429	2817583.521	3579585.019
NIGER INSURANCE CO. PLC.	0.000	1401.020	862799.756	0.000
OASIS INSURANCE PLC	0.000	0.000	0.000	0.000
PRESTIGE ASSURANCE CO. PLC.	0.000	1119687.584	1665335.372	3299786.520
REGENCY ALLIANCE PLC.	0.000	74021.949	549525.530	0.000
ROYAL EXCHANGE ASSURANCE PLC	0.000	700130.056	3984711.266	3287765.139
SOVEREIGN TRUST INSURANCE PLC	301301.371	0.000	1566842.548	1698249.297
SPRINGLIFE ASSURANCE PLC	534248.712	0.000	6115913.977	10699134.512
STANDARD ALLIANCE INSURANCE PLC.	0.000	472796.887	825043.509	0.000
STANDARD TRUST ASSURANCE PLC (STACO)	0.000	0.000	0.000	0.000
UNIC INSURANCE PLC	0.000	0.000	0.000	0.000
UNITY(KAPITAL ASSURANCE PLC)	1177093.970	0.000	2964275.832	3239067.032
UNIVERSAL INSURANCE COMPANY PLC	0.000	1067622.034	5339977.414	0.000
WAPIC INSURANCE PLC	0.000	0.000	2549965.626	2309955.525
Mean	59195.413	181145.260	1766658.707	1727305.769

From the results in table 2 above, the inefficient firms showed input slacks of varied proportions in the different inputs consumed in the course of their production activities. Overall 11(32%) of the sampled firms were efficient in that there was no input slack incurred by them in any input among the listed inputs for the study. Meanwhile, 23 (68%) of the sampled firms were inefficient, with the majority recording slack in Shareholders' Funds. See table 2 for details. The sampled firms performed relatively well in terms of management expenses except for 3 (9%) which are: Sovereign Trust Insurance plc, Springlife Assurance plc and Unity (Kapital Assurance plc). Thus for Sovereign Trust Insurance plc, management

expenses can be reduced by ₦301,301,371 and still produce at current level of output. This result also shows that Springlife Assurance plc and Unity (Kapital Assurance plc) could reduce management expenses by ₦534,248,712 and ₦1,177,093,970 respectively and still produce at current level of output. This interpretation goes for the other input slacks. Results for input slacks on net premium shows that 11 (32%) of the sampled firms recorded input slacks of varied amounts with Law Union and Rock Insurance plc and Niger Insurance Company plc incurring the highest and lowest slacks of ₦1,266,334,237 and ₦1,401,020 on this input respectively.

Results for input slacks on shareholders fund show that twenty three (23) of the firms are inefficient in the utilization of the fund. This result reveals the highest mean input slack of ₦1,766,658,707 for the 34 firms. Still on this result, International Energy Insurance plc incurred the highest slack of ₦8,763,875,969. This is closely followed by African Alliance Company plc with ₦6,750,380,510. The next in the series is Springlife Assurance with ₦6,115,913,977 inefficient consumption of shareholders fund. For total asset input, 13 (38%) of sampled firms recorded slacks which culminated in the mean input slacks of ₦1,727,305,769. The highest slack in input is incurred by Law Union and Rock Insurance plc followed by Springlife Assurance plc. The least amount of ₦427,258,765 slack is incurred by Cornerstone Insurance Company plc. Thus results of input (management expenses, net premium, shareholders fund and total assets) utilization show very high level of inefficiency especially for certain firms as Springlife Assurance plc which ranked herself among the highest uneconomic consumers of shareholders fund and total assets.

Table 3: Output Slacks in Naira (#)

Firm	Investment income	Net claims	Profit after tax	Market share
AFRICAN ALLIANCE INSURANCE COMPANY PLC	1200745.491	1679573.695	0.000	1010634.108
AIICO INSURANCE PLC.	0.000	155778.750	0.000	0.000
ARMLIFE PLC	0.000	0.000	0.000	0.000
AXAMANSARD INSURANCE PLC	0.000	0.000	0.000	0.000
CONSOLIDATED HALLMARK INSURANCE PLC	0.000	0.000	0.000	0.000
CONTINENTAL REINSURANCE PLC	0.000	0.000	0.000	0.000
CORNERSTONE INSURANCE COMPANY PLC.	0.000	224238.090	0.000	0.000
CUSTODIAN AND ALLIED PLC	0.000	0.000	0.000	119956.908
ENSURE INSURANCE PLC	0.000	0.000	0.000	0.000
EQUITY ASSURANCE PLC.	129021.797	0.000	0.000	103192.407
GOLDLINK INSURANCE PLC	0.000	0.000	0.000	0.000
GREAT NIGERIAN INSURANCE PLC	344369.214	36645.809	0.000	357968.166

GUINEA INSURANCE PLC.	134657.792	0.000	0.000	51071.802
INDUSTRIAL AND GENERAL INSURANCE PLC	0.000	0.000	0.000	0.000
INVESTMENT AND ALLIED INSURANCE PLC	101491.749	0.000	784748.825	0.000
INTERNATIONAL ENERGY INSURANCE PLC	0.000	70613.820	13705.254	196401.449
LASACO ASSURANCE PLC	0.000	0.000	386617.857	84083.357
LAW UNION AND ROCK INS. PLC.	215201.990	0.000	742104.558	0.000
LINKAGE ASSURANCE PLC	0.000	0.000	0.000	0.000
MUTUAL BENEFITS ASSURANCE PLC.	0.000	838967.059	0.000	0.000
N.E.M INSURANCE CO (NIG) PLC.	48095.517	33391.560	510325.217	0.000
NIGER INSURANCE CO. PLC.	261113.821	0.000	138356.674	351378.713
OASIS INSURANCE PLC	0.000	0.000	0.000	0.000
PRESTIGE ASSURANCE CO. PLC.	0.000	482988.181	432442.416	0.000
REGENCY ALLIANCE PLC.	0.000	0.000	23757.742	139759.066
ROYAL EXCHANGE ASSURANCE PLC	0.000	0.000	450201.265	0.000
SOVEREIGN TRUST INSURANCE PLC	68429.605	0.000	586435.049	94631.906
SPRINGLIFE ASSURANCE PLC	0.000	0.000	85904.457	1210711.796
STANDARD ALLIANCE INSURANCE PLC.	0.000	0.000	287136.553	0.000
STANDARD TRUST ASSURANCE PLC (STACO)	0.000	0.000	0.000	0.000
UNIC INSURANCE PLC	0.000	0.000	0.000	0.000
UNITY(KAPITAL ASSURANCE PLC)	538327.433	0.000	233233.359	572506.889
UNIVERSAL INSURANCE COMPANY PLC	789393.143	795361.948	0.000	973376.329
WAPIC INSURANCE PLC	0.000	98469.482	0.000	265018.482
Mean	112671.987	129883.188	137499.095	162667.393

Table 3 above shows the results of output slacks which denotes the amount by which current output levels could be expanded with current technology (input consumption). Thus From the results, it can be seen that investment income has a mean output slack of ₦112,671,987 for the sampled firms in the study. This is a serious loss in welfare to the economy at large. Details here show that firms such Universal Insurance Company plc incurred the highest deficit in this output that amounts to ₦789,393,987 while N.E.M insurance plc incurred the lowest amount of ₦48,095,517. Net claims slack averages at ₦129,883,188. This shows the amount by which net claims could have been increased at current

technology. Here, Mutual Benefit Assurance plc incurred the highest amount of ₦838,967,059 followed by Universal Insurance plc with ₦795,361,948 among the listed firms for the study. Profit after tax has a mean output slack of ₦137,499,095 showing that the sampled 34 firms in the study could expand output by ₦137,499,095 given current technology. This again shows the colossal amount of avoidable social loss to the entire economy. Details show that Investment and Allied Insurance plc incurred the highest amount of ₦784,748,825. This is closely followed by Law Union and Rock Insurance plc with an amount of ₦742,104,558. International Energy Insurance plc incurred the lowest amount of output slack here. This amounts to ₦13,705,254. Market share incurred a mean output slack of ₦162,667,393. This is even the highest among the output slacks. Its details show that Springlife Assurance plc incurred the highest amount here of ₦1,210,711,796. This is followed by African Alliance Insurance Company plc with ₦1,010,634,108. Guinea Insurance plc incurred lowest amount here which is ₦51,071,802. On the whole, 11(32%), 10 (29%), 13 (38%), and 14 (41%) firms have output slacks in Investment income, Net Claims, Profit after Tax and Market share respectively. This result shows that although there is gross technical inefficiency in output production. Market share followed by profit after tax are the worse managed output by decision making units (DMUs) under study. This calls for policy attention by the management of the affected DMUs.

TOTAL FACTOR PRODUCTIVITY GROWTH RESULTS

The Malmquist Total Factor Productivity Growth indices are presented and discussed in this section. The Total Factor Productivity (TFP) scores were derived through the assumption of Input Oriented Data Envelopment Analysis. This is so because the firms can only influence their input but cannot determine the volume of output at any time. The TFP is an index of change showing the relative position of a given production point (x_{i+1}, y_{i+1}) in relation to its immediate previous production unit (x_i, y_i). The mean TFP indices vary based on the specified input oriented Malmquist productivity. The estimated indices imply that if TFP score is less than unity it connotes productivity progress because such results show that the affected Decision Making Units (DMUs) are currently producing the same units of outputs with less units of inputs than was used in the previous period (x_i, y_i); implying that such DMUs are efficient relative to their previous points of production (x_i, y_i). However the reverse is the case when TFP is greater than unity, this indicates productivity regress because it indicates that production at current point (x_{i+1},y_{i+1}) uses more factor input than was used at a previous point (x_i,y_i). Conversely, when TFP is equal to unity, it shows constant growth. That is to say the DMU is consuming the same unit of factor input in both periods and producing the same unit output. At this point, the DMU records no efficiency

Table 4: Malmquist Total Factor Productivity Index of the Sampled Firms

Firm	Technical Efficiency Change	Technological Change	Pure Efficiency Change	Scale Efficiency Change	Total Factor Productivity Change
AFRICAN ALLIANCE INSURANCE COMPANY PLC	1.011	0.000	1.005	1.006	0.000
AIICO INSURANCE PLC.	1.030	0.918	1.028	1.002	0.945
ARMLIFE PLC	0.000	0.000	0.000	0.000	0.000
AXAMANSARD INSURANCE PLC	0.000	0.000	0.000	0.000	0.000
CONSOLIDATED HALLMARK INSURANCE PLC	0.966	0.958	0.969	0.997	0.925
CONTINENTAL REINSURANCE PLC	0.000	0.000	0.000	0.000	0.000
CORNERSTONE INSURANCE COMPANY PLC.	0.980	0.000	0.981	0.999	0.000
CUSTODIAN AND ALLIED PLC	1.107	0.000	1.107	1.000	0.000
ENSURE INSURANCE PLC	0.000	0.000	0.000	0.000	0.000
EQUITY ASSURANCE PLC.	1.011	0.955	1.011	1.000	0.966
GOLDLINK INSURANCE PLC	1.000	1.041	1.000	1.000	1.041
GREAT NIGERIAN INSURANCE PLC	1.029	1.010	1.029	1.000	1.039
GUINEA INSURANCE PLC.	1.028	0.992	1.029	0.999	1.020
INDUSTRIAL AND GENERAL INSURANCE PLC	0.987	0.989	0.997	0.990	0.976
INVESTMENT AND ALLIED INSURANCE PLC	1.073	0.000	1.020	1.051	0.000
INTERNATIONAL ENERGY INSURANCE PLC	1.008	1.057	1.010	0.999	1.066
LASACO ASSURANCE PLC	1.014	0.000	0.972	1.043	0.000
LAW UNION AND ROCK INS. PLC.	0.962	0.000	0.964	0.998	0.000
LINKAGE ASSURANCE PLC	0.978	0.000	0.979	1.000	0.000

MUTUAL BENEFITS ASSURANCE PLC.	1.004	1.115	1.004	1.000	1.119
N.E.M INSURANCE CO (NIG) PLC.	1.051	0.967	1.049	1.002	1.017
NIGER INSURANCE CO. PLC.	1.090	0.000	1.057	1.031	0.000
OASIS INSURANCE PLC	0.926	0.000	1.000	0.926	0.000
PRESTIGE ASSURANCE CO. PLC.	1.048	1.025	1.048	1.000	1.074
REGENCY ALLIANCE PLC.	1.067	0.000	1.056	1.010	0.000
ROYAL EXCHANGE ASSURANCE PLC	0.955	0.860	0.957	0.997	0.821
SOVEREIGN TRUST INSURANCE PLC	1.013	1.016	1.005	1.009	1.030
SPRINGLIFE ASSURANCE PLC	0.000	0.000	0.000	0.000	0.000
STANDARD ALLIANCE INSURANCE PLC.	0.997	0.829	0.998	0.999	0.826
STANDARD TRUST ASSURANCE PLC (STACO)	0.929	0.000	0.929	1.000	0.000
UNIC INSURANCE PLC	1.000	0.954	1.000	1.000	0.954
UNITY(KAPITAL ASSURANCE PLC)	0.000	0.000	0.000	0.000	0.000
UNIVERSAL INSURANCE COMPANY PLC	1.039	0.973	1.031	1.007	1.011
WAPIC INSURANCE PLC	0.995	0.000	1.007	0.988	0.000
MEAN	0.832	0.461	0.831	0.825	0.466

Table 4 above shows the summary of the Malmquist TFP indices for the sampled firms in the period (2000 - 2016). From the table, there is a mean Total Factor Productivity progress of 53.4%. This could be attributed to the outweighing influence of technological change as seen from the result. Details from the results show that 18 (eighteen) of the sampled firms record zero TFP growth. This means that the affected firms are stagnant in output growth. This could be attributed to poor technology resulting in lack of innovation in resource combination, inefficient resource utilization and inappropriate record keeping. The result also shows that 9 (nine) firms have productivity regress with six (6) firms (Goldlink, Great Nigerian, International Energy, Mutual Benefits, Prestige and Sovereign Trust) among them recording technical and technological inefficiencies. The remaining three (3) firms (Ginea, N.E.M and Universal) have mixed results of technical inefficiencies and technological efficiency. It can thus be seen that technical inefficiencies in these firms are largely responsible for the productivity regress in these firms.

On the whole, 7 (seven) firms recorded varying degrees of productivity progress. They are; AIICO Insurance plc with productivity progress of 5.5%, Consolidated Hallmark Insurance plc with 7.5%

productivity progress, Equity Assurance plc with 3.4% productivity progress, Industrial and General Insurance plc with 2.4% productivity progress, Royal Exchange Assurance plc with 7.9% productivity progress, Standard Alliance Insurance plc with 7.4% productivity progress and UNIC plc with 4.6% productivity progress. Of these seven firms AIICO Insurance plc, Equity Assurance plc and UNIC Insurance plc have technical efficiency change regress of 3%, 1.1% and zero progress respectively. It is the surpassing effect of technological change that neutralizes this productivity negation that culminates into productivity growth for the two firms. The remaining four have productivity progress in both technical efficiency change and technological change. Thus the sum of the issue is that most of the firms in the studied DMUs have productivity regress and the source of this is technical efficiency change.

SUMMARY OF FINDINGS

The findings of the study are summarized below:

1. Quoted insurance companies in Nigeria are technically inefficient with only seven companies being efficient as the result indicates a mean variable returns to scale technical efficiency score of 59%. On the other hand, we observed that twenty six companies were scale efficient with a mean scale efficiency score of 87% showing that quoted insurance companies are relatively efficient in their choice of scale or size of operations.

2. Quoted insurance companies in Nigeria are allocatively inefficient. The presence of high slacks mean for management expenses (₦59195.413), net profit (₦181145.260), shareholders fund (₦1766658.707) and total asset (₦1727305.769) in the production process shows the degree of inefficient allocation of resources in the Nigerian quoted insurance companies. On the other hand, the output fall (slacks) mean are; (₦112671.987) of investment income, (₦129883.188) of net claims, (₦137499.095) of profit after tax and (₦162667.393) of market share. These indicate what the companies would have achieved if the input variables were properly allocated.

3. Generally, there is no total factor productivity increase in Nigerian quoted insurance companies as only seven (7) firms out of thirty-four recording varying degrees of productivity progress. AIICO Insurance plc with productivity progress of 5.5%, Consolidated Hallmark Insurance plc with 7.5% productivity progress, Equity Assurance plc which has 3.4% productivity progress, Industrial and General Insurance plc with 2.4% productivity progress, Royal Exchange Assurance plc with 7.9% productivity progress, Standard Alliance Insurance plc having productivity progress of 7.4% and UNIC Insurance plc with 4.6% productivity progress.

POLICY RECOMMENDATIONS

The findings of this study gave impetus for the following recommendations:

1. The companies operating in the region of decreasing return to scale should scale down their inputs in order to become efficient while those that are operating in the region of increasing return to scale should increase their inputs in order to become efficient and remain on the production possibility frontier.

2. We recommend that the utilization of total asset and shareholders fund be improved upon because they recorded the highest input slack score. This should be done by formulating policy and guidelines for the effective use of total assets and shareholder's equity by stakeholders in the insurance sector. Effort should also be made to increase firms total market share and profit after tax for efficiency purposes since they recorded the highest output slacks. This is possible if quoted insurance companies improve their creation of awareness by engaging in aggressive advertizing using proper and effective promotional tools. These may include electronics marketing, media advertisement, exhibitions, publicity, sales promotion with appropriate incentives and effective personal door to door selling so as to enhance feedback. These will encourage large insurance patronage which will in the long run lead to high market share and profit after tax.

3. Managers of insurance companies should improve technology. This includes updating their production technology if possible. They should also reduce their over head cost, employ competent workers that are productive and also engage in training and retraining of staffs for efficiency and effectiveness. The companies should improve management practices to international competitiveness. Asset management should be given a priority by the managers of those companies. The companies need to seek alliances and synergies because it will enable the efficient companies to assist the inefficient ones. This will enable the companies to provide quality insurance services and make the general public have access to those services at reasonable prices.

4. Finally, we recommend possible merger and acquisition of the inefficient companies with the efficient ones in the insurance sector in order to strengthen the insurance companies in Nigeria. Generally, government should provide a conducive environment for insurance companies to operate such as granting tax relief, tax holiday and providing the necessary infrastructures such as good roads, electricity, transportation services, telecommunication that will enhance the performance of these companies. Government should come up with a policy package aimed at assisting insurance companies to expand domestic market and access foreign markets so that they can increase their level of investment and proper funding.

CONCLUSION

In this study, we utilize a strictly input orientated multi stage DEA methodology to measure the efficiency and performance of quoted insurance companies in Nigeria under the assumption of variable return to scale. Four input variables; management expenses, net premium, shareholders fund and total asset and four output variables; investment income, net claims, profit after tax and market share return on equity were used for the measurement. The results revealed that out of thirty four companies, seven companies were relatively efficient under variable return to scale assumption while six companies were technically efficient under constant return to scale assumption. Twenty-six companies were scale efficient with multiple most productive scale size. The study also reveals the fact that quoted insurance companies in Nigeria are inefficient in the allocation of resources as the result shows varying degree of input and output slacks in twenty three different companies. The study finally shows that seven quoted insurance companies in Nigeria had a total factor productivity progress while nine had a total factor productivity regress while the remaining eighteen companies had zero productivity growth. The

findings of this study can hopefully benefit managers of inefficient companies to help them restructure their organizational scope and business style and review resource utilization for improving their efficiency and performance. However, it should be noted that though data envelopment analysis (DEA) enables us to estimate the target for measuring and explaining the determinants of each firm performance, assessing the effect of economies of scale and an overall objective numerical score, it also has its inherent drawbacks. We therefore suggest that further research be conducted with other input and output variable that are being utilized by quoted insurance companies in Nigeria.

LIMITATIONS OF THE STUDY

Like most research, some constraints have been inevitable,

1 Basic DEA model is a usable technique for most cases. But it is deficient in dynamic situations where dependence to time occurs because of static structure (Cooper, 2007). This is an important limitation for basic DEA. To overcome this limitation, Malmquist Productivity Index (MI) has been developed and used in this study. Malmquist productivity index is a comparative statistics that examines the changes in the efficiency of a decision making unit between two time periods.

2 Besides, data envelopment analysis is also sensitive to error in values of input or output. This can cause outliers that can affect other decision making units. Thus the input and output values were standardized by case mix index. The case mix index is adopted to standardize the data values so that all data values are redenominated to the same units (Naira) in order to ensure uniformity and reliability of estimates.

3 This study relies on secondary data to be extracted from daily and monthly annual reports of insurance companies, National Insurance Commission (NAICOM) and the Nigerian Stock Exchange annual Statistical Bulletin. Likely errors from this background are possible, though the integrity of the source minimizes such.

SUGGESTIONS FOR FURTHER STUDIES

This study was conducted to measure the efficiency and performance of quoted insurance companies in Nigeria. It is therefore expected that further studies be carried out in the following areas:

1. More input and output variables for measuring efficiency can be adopted and the study should be enlarged to include the insurance companies in the second tier market.

2. A regional (countries) comparative study of different insurance companies should be undertaken to generate international differences.

3. Other tools of analysis like the stochastic frontier analysis can be employed to ascertain efficiency, performance and their determinant in the insurance industry.

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DIGITAL AND NEW AGE CONSUMER'S (GEN Y) : A STUDY AMONG COLLEGE STUDENTS OF DELHI NCR

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Societal trends driven by the digital revolution are changing consumer behavior and demands. Easy availability of smart phones, data and mobile apps have created an ecosystem where consumers are connected everywhere and anywhere. The new age consumers are well informed and well equipped with information. In this digital era - data, mobility and analytics have enabled organizations to understand the consumer behavior and predict about preferences and desires of consumers to a great extent. Today, practically everything can be purchased online. Starting from daily grocery to booking flights or hotels or even buying a house, can be done online. Consumers are spending a good portion of their time on mobile phones, whether it is online shopping, listening to music, watching live videos or social media. Everyone is using internet and going mobile. With internet and mobility, the behavior of consumers is also changing. The intent of this study is to understand the behavior of consumers in terms of usage, preferences and activities over the internet through smart phones and tablets. The study aims to find out the digi-shifting trends on how behaviour of new age consumers has changed in the digital age among the college students of Delhi.

Keywords: Digital Behaviour, Consumer Behavior, Smartphone Usage, Mobile Applications, Online Purchase.

INTRODUCTION

Generation Y is a unique and influential consumer group whose behavior is often discussed but not fully understood(Drake-Bridges and Burgess, 2010; Racolta-Paina and Luca, 2010; Noble et al., 2009; Smith, 2012). Heavily influenced by technology and the internet, this consumer cohort has evolved differently from previous generations making, it a challenging group to target (Lester et al., 2005). Previous research has examined Generation Y in various contexts, however, theoretical and empirical research about its psychographic profile is limited (Yu, 2011). Increased interest in identifying aspects of Generation Y that differentiate them from previous generations has been called for (Hauw and Vos, 2010);however, the present research represents work that characterizes Generation Y on a segmented basis.

A contribution to the segmentation literature can be made by undertaking research that is both theoretically based and that can provide specific information about the psychographic profile and media behavior of Generation Y. Managers believe that the consumers who comprise Generation Y are distinctly different in many ways from Generation X or the Baby Boomers (Pesquera, 2005). The behavior of this cohort is certainly distinguishable and unique to the generation (Hershatter and Epstein, 2010). The literature suggests that Generation Y is more than three times the size of Generation X, and it

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is the largest consumer market in America since the Baby Boomers (Ma and Niehm, 2006; Neuborne, 1999; Nayyar, 2001; Paul, 2001). Generation Y has approximately than 83 million members in the USA who were born between 1977 and 1996, although the exact dates vary among researchers with some using the time frame from 1981 to 1995 (Solka et al., 2011). Given the value of Generation Y to marketers, it is important to understand the psychographics and media behavior of this cohort (Swinarski et al., 2010).

Both the trade press and academic research document the shift in consumption practices instigated by the rise of web-based 'participatory culture' where each user can be a producer, influencer and/or consumer of information (Han, 2011; Jenkins, 1992). Naturally, a growing stream of research is busy re-evaluating the applicability of long-established models and constructs in this new digital reality (Belk & Llamas, 2013; Capon & Hulbert, 2012).

Using the internet, social media, mobile apps, and other digital communication technologies has become part of billions of people's daily lives. People are exposed to digital and social media more than ever before. In recent years, two relevant and transcendental phenomena have emerged through the study of consumer behaviour: The emergence of social media and online shopping, both have undergone exponential growth in the Indian market.

With around 2-3 million users being added every month, India's mobile internet population is mushrooming. As per IAMAI report 2016, India has around 371 million mobile users and the base is growing exponentially. With the Internet of Things (IoT) rapidly becoming a reality and devices connecting every aspect of consumers' lives, the shift to a new, connected world signals another tidal wave of industry transition. The digital landscape is evolving faster than ever before, and so are consumer attitudes, demands, and expectations. Consumer behavior is changing, with “digital” activities growing rapidly in every sphere. Technology permeates nearly every part of the day for many consumers, from checking Whatsapp messages first thing in the morning to taking a online shopping break during work. For the new age consumers, digital is the new medium of transaction and communication.

Smart phones created a wave of disruption in the mobile market, so did internet services in the telecom market and now with both the concepts going together, disruption is taking place in day to day areas such as banking, shopping, social media etc. Almost everything can be performed with the click of a button. The new age consumers are the ones who are leveraging such platforms to the fullest.

Customers are no longer comparing specific brands with their direct competitors, rather they are comparing all brands, irrespective of the industry or product. They are comparing not only the product but a myriad of brand elements such as service, quality, and overall customer satisfaction to name a few. Nearly every consumer activity has shifted to digital in some way, from listening to music, to shopping, to booking restaurant reservations, and so on. The digital era has arrived and it will continue to change social trends, directly affecting consumer behaviour and demands. The change in consumer behaviour can be hard to understand or even recognize, but brands today need to realize that it is happening and they need to change and adapt their customer service accordingly.

The present study aims to understand the new age consumers with respect to their digital behaviour. Usage pattern and online activities using smart phones and tablets of consumers were identified and examined in the study. The study captures responses of 404 college students based out of Delhi NCR and examines their smart phone usage behaviour. Focus interviews were also carried out with Industry experts in understanding the smart phone usage behaviour of consumers. Based on the study finding and subject matter interview, six digi-shifting trends have been identified and explained in the study.

REVIEW OF LITERATURE

Smart phones are an integral part of college life and culture. Even a casual observation of today's college students will reveal smart phones being used, both overtly and covertly, in every possible campus setting, including the classroom. Modern smart phones enable users to access a variety of electronic media at almost any time and any place. Popular activities such as playing video games, surfing the Internet, and monitoring social media sites are now all easily accomplished with most smart phones. College students commonly view their smart phone as an integral part of who they are, and/or as an important extension of themselves (Belk, 1988).

Many young adults today cannot envision an existence without smart phones. Research suggests that media use has become such a significant part of student life that it is "invisible" and students do not necessarily realize their level of dependence on and/or addiction to their smart phones (Moeller, 2010). Based on research aimed at better understanding smart phone addiction, Shambare et al. (2012) concluded that mobile phone use can be "dependency-forming, habitual, and addictive" (p. 577).

Importantly, smart phone addiction does not happen overnight, and, like most forms of behavioral addiction, occurs via a process (Martin et al., 2013). The use of smart phones is so pervasive that two students can be seen standing face to face talking to each other on their respective smart phones. The typical Internet user of the twentieth century is young, professional, and affluent with higher levels of income and higher education (Palumbo and Herbig, 1998). Identifying pre-purchase intentions of consumers is the key in understanding the shopping behaviour of consumers over the internet. A compilation of some of the determinants researchers have examined are: transaction security, vendor quality, price considerations, information and service quality, system quality, privacy and security risks, trust, shopping enjoyment, valence of online shopping experience, and perceived product quality. (Liao and Cheung, 2001; Saeed et al., 2003; Miyazaki and Fernandez, 2001; Chen and Dubinsky, 2003).

Sorce et al. (2005) in the study of online shopping found that younger consumers searched for more products online and they were more likely to agree that online shopping was more convenient with the help of smart phones. Brengman, Guenessand Swinyard (2005) studied on Segmenting Internet Shoppers based in their web usage related lifestyle: across cultural validation and the study found that the segment online consumers through first identifying the internet usage lifestyle of every consumer, they believe internet experience is highly relevant the identification of the online consumers.

Considerable progress has been made in the field of information technology in recent years, and particularly with regards to how such technologies relate to the Internet as purchasing channels. Some

studies have analysed differences in socio cultural attributes and their effects on behaviours by focusing on differences between online and offline channels (Hwang, and Jeong, 2016). The Internet has changed values and lifestyles, i.e., the ways in which individuals relate socially, read the news, listen to music, and reserve movie tickets through online channels rather than through a box office (Doury, 2001). However, one study shows that those who make purchases online and offline maintain different values and lifestyles that influence their behaviours and intentions (Swinyard and Smith, 2003). It is therefore necessary to explore this trend in greater depth.

RELEVANCE OF THE STUDY

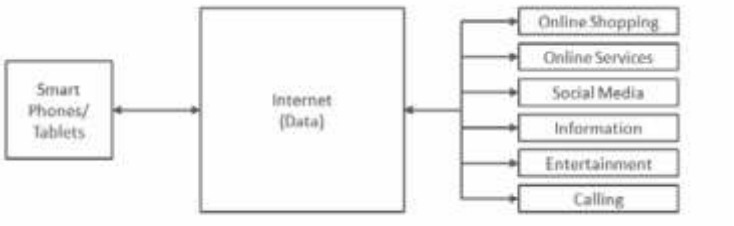
It's a digital wave that is sweeping across the Indian market. Internet usage has seen a exponential growth and with the easy availability of smart phones, majority of activities have either been shifted onto the digital channels or are in transit. The key to any organization at this stage is growing their business, increasing their customer base and making loyal consumers. The common factor which links profit, increasing consumer base and loyal consumers is information. Information about the needs, wants and desires of consumers. Information about their behaviour and factors due to which the behaviors is can be altered.

The study is an exploratory study which identifies the behaviour of the new age consumers with respect of many facets of digital activities such as online shopping, online banking and social media. The study can be relevant for digital marketing organizations, in order to create the right digital strategy to target and convert potential consumers based on their digital behavior

CONCEPTUAL FRAMEWORK

Basis the discussion with SME's from the industry, a conceptual model was developed for digital consumer behaviour, which demonstrates the key areas which are accessed by the young consumers using their respective smart phones or tablet devices. Six themes were identified (Figure 1) and the consumer digital journey mostly revolves around these six themes namely (1) Online Shopping (2) Online Service (3) Entertainment (4) Information (5) Social Media and (6) Calling

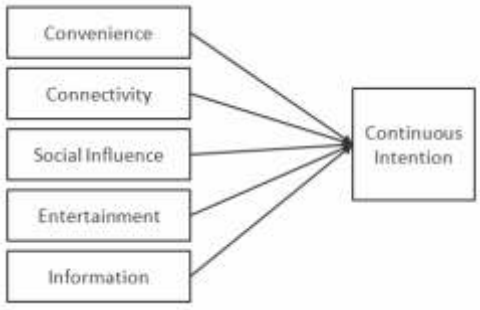
Figure 1: Conceptual model of digital behaviour



Five constructs identified basis literature review and focus interviews. The dependent variable Continuous Intention is defined as the intent to use smart phones to access internet and five independent variables namely (1) Connectivity (2) Convenience (3) Social Influence (4) Entertainment and (5)

Information explains the continuous intention to use smart phones. The conceptual model is shown in Figure 2.

Figure 2: Conceptual Model of smart phone usage



OBJECTIVES OF THE STUDY

The overall objective of the study is to understand the digital behavior of consumers among the college students of Delhi NCR.

The specific objectives are:

1. Designing a conceptual framework of digital consumer behaviour using smart phones and tablets to access information over the internet
2. Identification of usage behaviour of consumers using smart phones and tablets, in terms of activities performed and time spent.
3. Categorization of applications which drive them online and makes them stay online.

RESEARCH METHODOLOGY

INSTRUMENTAL DESIGN

Textual data for the present study was undertaken by means of phenomenological focused interviews (n=50) with 25 graduate and 25 post graduate students. The respondents were selected through the authors' acquaintance. It was ensures that these respondents were regular smart phone users. The respondents were asked about their usage behaviour of smart phones and the activities which they perform using their respective devices. They were asked about the activities that they conduct using their smart phones/tablets along with the reasons for using smart phones/tablets. In order to track the activity, a mobile tracking applications Piwik was installed on the smart phones of all the respondents. The data dump file was extracted post a month and their activity levels were compared with the responses, which they had provided during their interviews. Each interview lasted for about 20 minutes. Around 78 items were recorded basis the interviews. Thereafter, a focus group discussion was carried out with ten subject matter experts (SME's),from the field of management consulting and e-commerce. The 78 items were grouped into two categories (See Table 1). First category consisted of six themes, with three items under each theme indicating the areas, where respondents spend majority of their time. In the second category

(See Table 2), five constructs were identified by the SME's, with three items under each construct, identifying the reasons for using smart phones/tablets by the respondents.

Based upon the focus group interviews with college students and focus group discussion with subject matter expert's, a structured questionnaire was designed distributed among students in Delhi NCR. All the responses were measured on a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree). Shoppers' demographic characteristics were also recorded. The questionnaires based on the scales were pretested, and refined to provide better clarity and understanding.

DATA COLLECTION

The survey was designed using online survey tool and rolled out to over 2000 students in Delhi. The survey consisted of multiple choice questions, open ended questions and rating questions. Out of the 2000 students, total of 784 college students (Response Rate: 20.2 %) had taken part in the survey, out of which 404 complete and valid responses were further used for data analysis. The demographic details of the respondents are mentioned in Table 3.

The college students were pursuing their graduation or post graduation from Delhi NCR. Out of the total college students around 61% were females and 39% were males and were in the age group between 17 yrs - 24 years. The survey question was designed in consultation with the marketing team of one of the e-commerce companies. The instrument was pilot tested by a similar group of students. Around 51 students had completed the pilot questionnaire and basis their feedback, some questions were reworded and/or deleted.

EMPIRICAL RESULTS

MEASUREMENT ASSESSMENTS

To assess the reliability and validity of the measures, two-step structural equation modeling (SEM) was applied (Anderson and Gerbing, 1988). First, the measurement model was evaluated using confirmatory factor analysis (CFA) accompanied by LISREL 8.54. The assessment results show a satisfactory fit to the data with a chi square ($\chi 2$) of 368.21 (df=120, $p<0.001$) and other goodness of fit indices as follows: NFI = 0.98; NNFI = 0.98; CFI = 0.99; IFI = 0.99; GFI = 0.90; AGFI = 0.86; RMR = 0.049; RMSEA = 0.074.

Convergence was statistically achieved in two ways. First, CR and AVE (average variance extracted) for each construct in Table 4 exceeded 0.7, indicating that the items explained more variance in the underlying construct than the measurement error did (Fornell and Larcker, 1981). Second, all factor loadings for indicators contained in the same construct were statistically significant, with t-values ranging from 16.76 to 25.62.

Discriminant validity was evaluated by the Chi-square difference test, which conducted simultaneous pair-wise comparisons between the constrained and unconstrained measurement models. If the chi-square difference (with 1 df) is significant, it means that the two constructs are viewed as distinct (but correlated) factors, then discriminant validity can be obtained. According to Bagozzi and Yi (1988), the

critical value of the Chi-square test based on the Bonferroni method was used in the present paper. The threshold under overall 0.01 levels with 1 df (χ21,0.01/15) is 11.58.

Since the Chi-square difference statistics for paired constructs all exceeded the critical value (see Table 3), the existence of discriminant validity is also successfully confirmed in this study. In addition, discriminant validity is also completed if the square root of the average variance extracted for each construct is greater than the correlations between it and other constructs. As shown in Table 5, the square roots of AVE were all greater than the off-diagonal elements in the corresponding rows and columns. Therefore, it can be concluded that the instrument had proper convergent and discriminant validity.

All the measures were self-reported by the same respondents; therefore, there is a potential problem of the occurrence of common method variance (CMV). Recently, some researchers have used confirmatory factor analysis (CFA) as a test of CMV. If the fit of a one-dimensional model is worse than that of the measurement model, this suggests that the common method variance does not appear to be a serious threat (Podsakoff et al., 2003). The results show that the fit is considerably worse for the one-dimensional model than it is for the measurement model; therefore, the issue of CMV is of less concern in this study.

KEY FINDINGS

Usage Behaviour: The students spend on an average around 5.5 hours on a daily basis on their smart phones. The time spent on smart phones (Table 9) is higher for females as compared to their male counterparts. The time spent on making voice calls/sms vary from 30 mins - 4 hrs a day.

Online Shopping and Services: The number of females shopping online is more as compared to males. Males search on at least 3-4 sites before making a purchase whereas females search on atleast 5-7 sites before making a purchase. Five categories were identified basis the survey, which are used the most by college students. They are : (1) Food Ordering (69%) (2) Online Shopping (65%) (3) Movie bookings (50%) (4) Cab Booking (30%) and (5) Flight Bookings (22%)

Basis the identified top 5 categories, preferred market players were also identified within these categories.

(1) Online shopping :Amazon, Flipkart and Paytm are the first three choices for searching and buying products for males whereas Amazon, Flipkart and Myntra were for females.

(2) Food Ordering: Another most used mobile app is for online food ordering. Close to 69% of students prefer to order food online through (1) Zomato and (2) Foodpanda.

(3) Movie Tickets: Around 50 % of students also prefer to book movie tickets using mobile apps. Out of which, Bookmyshow is the most preferred app followed by Paytm.

(4) Cab Bookings: Though Delhi Metro and e-rickshaws are favorite among college students of Delhi but still around 30 % of college students regularly books cabs. The top two cab service providers identified were (1) Ola and (2) Uber. Male students prefer Uber services whereas females prefer Ola services.

(5) Flight Booking: The next most used mobile apps are for booking air tickets. Around 22 % of students book air tickets through mobile apps. The preferred choice for both males as well as females was goibibo.com because of the price, offers and discounts provided followed by makemytrip.com.

Reasons for shopping online : The reason for online shopping is person specific and vary from individual to individual The top three reasons identified for online shopping were (1) More Variety (2) Easy return and replace policy (3) Lower price.

DISCUSSION

From a theoretical perspective, this study makes a relevant contribution in understanding the digital behaviour of young consumers with respect to smart phone usage. Along with such considerations, however, firms must also understand the effects using cultural and lifestyle variables. This study also contributes to literature on the development of behaviors based on smart phone usage and digital behaviour. The results provide insights into the relationship between the continuance intention of smart phone usage and its antecedents among young people. From an empirical point of view, The findings show that convenience, connectivity, entertainment, social influence and informative significantly influence users' continuance intention of smart phones. The study identified that the young generation is using smart phones more than any other generation in the past and a major portion of time spent on smart phones is on social media.

Six "digi-shifting" trends were identified on how behaviour of new age consumers has changed in the digital age among the college students of Delhi. **Device shift – from PCs to mobile devices:** More consumers have smart phones than ever before. We take our devices with us everywhere we go. Smartphone's are becoming ubiquitous and around 74 % of students use their smart phones more as compared to desktop/laptops. **Communications shift – from voice to data** : Students spend around 5.5 hours a day on smart phones. The majority of time is spent on data centric activities such as Social networking, online music and videos, online shopping and games as compared to making voice call/text messages. **Shopping platform shift from physical to digital**: Consumers have slowly started to adapt to online shopping and more and more consumer are buying products and services online. There has been a shift from physical buying to digital buying. The concept of face to face buying is slowly changing and now the concept of face to screen buying is coming up. **Customers are connected and online review plays a major role:** Almost everybody is living two lives, an online life and a offline one. We are all connected in one platform or another through our network of friends. We also own more than one device that keeps us updated. Whether it is buying a mobile phone, booking a hotel or making a reservation in a restaurant, consumers prefer to go through the reviews of other consumers and make a decision accordingly. Close to 61% of College students' Purchasing Decisions is based on the reviews/feedback of other consumers. **Consumer expectation has changed and need Instant gratification:**It is very important for consumers to have a decision-making information to be available right away. In the past, as a company you set the times that you were open for business, and customers had to put up with it or stay without that particular product. Technology has totally changed that, with the introduction of e-commerce and mobile phones, customers can access products at anytime. **Multiplicity: New communication channels** In the past, a company provided customer service through

emails . These two communication tools had their own challenges and favored the company more; it was at their discretion what information to give out

CONCLUSION

The study was designed to understand the behaviour of new age and digital consumers specific to college students of Delhi. The study identified that rise of smart phones is a key driver in today's digital era with smart phones being used by more and more consumers. A conceptual model was developed, which identifies the digital behaviour of consumers in Delhi NCR. Substantial analysis was carried out for college students in terms of their smart phone usage behaviour and it was identified that college students on an average are spending around 5.5 hours per day on mobile devices across multiple activities such as online shopping, games, online videos and social networks etc. The study highlighted that females are heavy spenders as compared to males and shops more frequently as well. Three factors namely Convenience, Variety and Price influence the online shopping behavior of college students across Delhi. The study also identified the most preferred brands under five categories namely (1) Online Shopping (2) Cab Booking (3) Flight Booking (4) Food Ordering (5) Movie Bookings. It also highlighted six digi-shifting trends in the current market situation as far as college students are concerned.

PRACTICAL IMPLICATION AND FUTURE RESEARCH

The study focuses on the new age digital consumers with respect to their digital behaviour. As has already been demonstrated numerous times, conducting a simple age-based segmentation provides high-level insight into the digital divide of different consumer needs and usage patterns. However, business should take that segmentation several steps further to strengthen sales, operations, product development, and other key customer-facing business processes. Incorporating product- and brand-specific usage, spending, attitudes, and needs can make developing a far more focused segmentation possible. This highly segmented approach will be needed to win and maintain customer relationships. The study can help business in terms of understanding digital consumer behaviour and identifying newer areas which holds importance to consumers, which needs to be focused on. Customers now know that they are powerful, it is important for business to understand what they are and should do to satisfy their instant information thirst and serve them better.

The current study focuses on digital behaviour of new age consumers specific to college students of Delhi . Further research can be carried out to other geographies in India and a broader customer base can be taken into consideration. Apart from college students, business professionals, working professionals, house wives etc can also be included in the study to have a broader view. This study presents limitations and we can identify avenues for future research. The study's another limitation is related to the fact that we should in the future extend the model to consider new variables (online purchase satisfaction, perceived usefulness, time availability, etc.).

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TABLES

Table 1: Categorization of items identified by respondents into key themes

Themes	Items
Online Purchases	1. I like to make online purchases
	2. Most of my purchases are online
	3. I make online purchases on a regular basis
Online Services	1. I perform my banking needs online
	2. All my daily needs (Tickets, Movie, food ordering) is done online
	3. I make the use of online services regularly
Social Media	1. I have more than four social media apps installed on my Smartphone
	2. I spent most of my time on social media
	3. I am always connected with my friends on social media
Information	1. I access my mails regularly on my smart phone
	2. I read blogs, articles etc on a regular basis using my smart phone
	3. I surf internet regularly using my smart phone
Entertainment	1. I stream live videos on my smart phones
	2. I listen to music on a regular basis on my smart phone
	3. I regularly play games on my smart phone during the day
Making Calls	1. I make calls to my friend using my smart phone on a regular basis
	2. I prefer making calls rather than text or Whatsapp messages
	3. The amount of time spent on calls is greater than on mobile apps

Table 2: Categorization of items identified by respondents into constructs

Constructs	Items
Convenience	1. Transacting using smart phones is a lot easier
	2. Using smart phones saves me a lot of time
	3. Information can be accessed anytime and anywhere
Connectivity	1. I am connected to the world 24x7
	2. I am well connected to my friends are peers
	3. I am well connected to the outside world
Informative	1. I get access to accurate information
	2. I am well informed about products, services and people
	3. I keep myself updated using the internet
Social Influence	1. Most of my friends are active on social media
	2. I use social networking sites, majority due to my friends
	3. I am active on social media on a regular basis
Entertainment	1. I access videos or live streaming using my smart phone
	2. I play games on my smart phone on a regular basis using my smart phone
	3. I listen to music on a regular basis using my smart phone
Continuous Intention	1. I intend to continue using my smart phone in the future
	2. I am using my smart phone regularly during the day
	3. I will keep using my smart phone as regularly as I do now

Table 3: Demographic details of the respondents

Category	Sub Category	Number	Percentage
Gender	Male	158	39%
	Female	246	61%
Occupation	College Students	404	100%
Age	17-20	254	63%
	21-25	150	37%
Qualification	Undergraduates	254	63%
	Post Graduates	150	37%

Table 4: Standardized loadings and reliability measures

Indicators	Standardized loading	t-value	CR	AVE	Cronbach's α
CV1	0.77	17.02	0.87	0.7	0.87
CV2	0.9	21.44			
CV3	0.83	19.05			
CN1	0.92	23.34	0.97	0.91	0.97
CN2	0.97	25.5			
CN3	0.97	25.62			
I1	0.8	18.26	0.91	0.78	0.91
I2	0.94	23.65			
I3	0.9	21.99			
SI1	0.82	18.77	0.89	0.72	0.88
SI2	0.9	22.05			
SI3	0.83	19.25			
EN1	0.85	20.24	0.91	0.76	0.91
EN2	0.87	20.72			
EN3	0.9	22.21			
CI1	0.93	23.38	0.91	0.78	0.9
CI2	0.95	24.41			
CI3	0.75	16.76			

Note: CV = convenience; CN = connectivity; I = Informative ; SI = social influence ; EN = Entertainment; CI = Continuous Intention

Table 5: Descriptive statistics, Variance explained, and correlations

	Means	S.D	CV	CN	I	SI	EN	CI
CV	4.81	1.23	0.84	-	-	-	-	-
CN	5.37	1.24	0.52*	0.95	-	-	-	-
I	4.7	1.16	0.5*	0.58*	0.88	-	-	-
SI	4.88	1.12	0.6*	0.73*	0.68*	0.85	-	-
EN	4.89	1.36	0.57*	0.7*	0.66*	0.7*	0.87	-
CI	5.08	1.21	0.64*	0.7*	0.72*	0.72*	0.7*	0.88

* p< 0.001; on-diagonals are square roots of AVE.

Table 6: Chi-square difference test

Construct pair	Unconstrained (c^2_{120}) = 368.24	
	Constrained (c^2_{121})	Difference ($c^2_{1)}$
(CV,CVN)	789.05	420.81*
(CV,I)	873.48	505.24*
(CV,SI)	721.33	353.09*
(CV,EN)	761.43	393.19*
(CV,CI)	804.73	436.49*
(CN,I)	829.53	461.29*
(CN,SI)	682.71	314.47*
(CN,EN)	714.24	346.00*
(CN,CI)	753.47	385.23*
(I,SI)	799.06	430.82*
(I,EN)	827.96	459.72*
(I,CI)	735.85	367.61*
(SI,EN)	636.47	268.23*
(SI,CI)	654.42	286.18*
(EN,CI)	721.22	352.98*

* p< 0.01. Note that the critical value of the chi-square testbased on the Bonferroni method under overall 0.01 levels is v2(1, 0.01/15) = 11.58.

Table 7: Usage Pattern - Applications used

Usage Pattern	Males		Females	
What do you perform using your mobile	**N**	**%**	**N**	**%**
Social Networking	121	86%	195	87%
Videos	79	56%	89	40%
Games	102	72%	176	78%
Music	108	77%	174	77%
Others	71	50%	60	27%
Total	**141**	**100%**	**225**	**100%**

Table 8: Average time spent on smart phones (Data)

Average Time on Internet (Mobile)	Males	Females
<1 hrs	5	4
1-3 hrs	17	21
3-5 hrs	36	55
5-7 hrs	78	143
>7 hrs	5	3

Table 9: Frequency of online shopping

How often do you shop online	Males	Females
Once a week	1	5
Once in few weeks	3	22
Once in a month	40	63
Once in few months	36	67
Never	61	70

Table 10: Mode of online shopping

	Males		Females	
Mode of online shopping	N	%	N	%
Mobile	54	67%	120	77%
Laptop/Desktop	26	33%	36	23%

Table 11: Reason for online shopping

Reason for shopping online	Males		Females	
	N	**%**	**N**	**%**
More Variety	112	34%	190	43%
Easy replace and return	107	33%	184	42%
Lower Price	88	27%	33	8%
Others	19	6%	33	8%

Table 12: Average amount spent for online shopping

	Males		Females	
Average amount spent for online shopping (Last 6 months) ?	**N**	**%**	**N**	**%**
Less than 1000	3	2%	6	3%
Rs. 1000 - Rs. 5000	22	16%	40	18%
Rs. 5000 Rs. 10000	54	38%	71	31%
Rs. 10000 - Rs. 20000	45	32%	79	35%
Rs. 20000- Rs. 40000	16	11%	27	12%
Greater than Rs. 40000	1	1%	3	1%

Questionnaire

1. Demographic Profile

Age

- ð 17-20
- ð 21-25

Gender

- ð Male
- ð Female
- ð Other

Education Level

- ð Undergraduate
- ð Post Graduate

2. Do you shop online?

- ð Yes
- ð No

3. What is your frequency of shopping online?

- ð Once a week
- ð Once in few weeks
- ð Once in a month
- ð Once in few months
- ð Never

4. What is your preferred mode for online surfing?

- ð Smart phone
- ð Tablet
- ð Desktop
- ð Laptop

5. Could you mention four reasons for shopping online?(Open ended question)

6. Select the mobile apps that you use from the list given below?

Social Media

- ð Whatsapp
- ð Facebook
- ð Snapchat
- ð Linkedin
- ð Instagram
- ð Twitter
- ð Other (Please specify)

Music

- ð Saavan
- ð Gana
- ð Wink
- ð Othes (Please specify)

Games

- ð Please specify

Videos

- ð Youtube
- ð Netflix
- ð Voot
- ð Amazon Prime
- ð Hotstar
- ð Other (Please specify)

Any other apps (Please specify)

7. Please mention at least five mobile applications, where you spend most of your time? (Open ended)

8. Please mention two most used mobile application on your smart phone, based upon category?

- ð Online Banking
- ð Online Shopping
- ð Cab Booking
- ð Flight Booking
- ð Food Delivery
- ð Booking Movie Tickets
- ð Connecting with friends

9. How much time do you spend on a daily basis, on your smart phones? (Open ended)

10. What is the average amount you spend on online shopping (In the last 6 months)

- ð > INR 1000
- ð INR1000 - INR 5000
- ð INR 5000 - INR 10000
- ð INR 10000 - INR 20000
- ð INR 20000 - INR 40000
- ð > INR 40000

11. Please answer the following questions on a scale of 1 to 7 with (1) Strongly disagree and (7) Strongly agree

Themes	**Items**	Response
Online Purchases	I like to make online purchases	
	Most of my purchases are online	
	I make online purchases on a regular basis	
Online Services	I perform my banking needs online	
	All my daily needs (Tickets, Movie, food ordering) is done online	
	I make the use of online services regularly	
Social Media	I have more than four social media apps installed on my Smartphone	
	I spent most of my time on social media	
	I am always connected with my friends on social media	
Information	I access my mails regularly on my smart phone	
	I read blogs, articles etc on a regular basis using my smart phone	
	I surf internet regularly using my smart phone	
Entertainment	I stream live videos on my smart phones	
	I listen to music on a regular basis on my smart phone	
	I regularly play games on my smart phone during the day	
Making Calls	I make calls to my friend using my smart phone on a regular basis	
	I prefer making calls rather than text or Whatsapp messages	
	The amount of time spent on calls is greater than on mobile apps	

12. Please answer the following questions on a scale of 1 to 7 with (1) Strongly disagree and (7) Strongly agree

Constructs	**Items**	**Response**
Convenience	1. Transacting using smart phones is a lot easier	
	2. Using smart phones saves me a lot of time	
	3. Information can be accessed anytime and anywhere	
Connectivity	1. I am connected to the world 24x7	
	2. I am well connected to my friends are peers	
	3. I am well connected to the outside world	
Informative	1. I get access to accurate information	
	2. I am well informed about products, services and people	
	3. I keep myself updated using the internet	

Social Influence	1. Most of my friends are active on social media 2. I use social networking sites, majority due to my friends 3. I am active on social media on a regular basis
Entertainment	1. I access videos or live streaming using my smart phone 2. I play games on my smart phone on a regular basis using my smart phone 3. I listen to music on a regular basis using my smart phone
Continuous Intention	1. I intend to continue using my smart phone in the future 2. I am using my smart phone regularly during the day 3. I will keep using my smart phone as regularly as I do now

A STUDY OF INTER-LINKAGES BETWEEN STOCK MARKET OF INDIA AND RUSSIA

Amit Kumar Singh[1] and Rohit Kumar Shrivastav[2]

Stock market, a subset of capital market, basically works as a channel for the demand and supply of the debt and equity capital. This market has always been a very important part of the overall financial system of every economy. The secondary market does not only boost growth of different sectors of the economy but also channelize the surplus funds (savings) to the deficient fund (borrowings) units of the society and thereby enables the optimum allocation of the scarce capital resource thus provide the long-term funds for sustainable economic growth. The present paper attempts to explore the dynamic inter-linkages between stock market of India and Russia and attempt to identify that whether is there any financial integration or linkages present between the stock market of Russia and India due to the establishment of long-term relationship between them or there is no significant impact on the markets stock market of these two countries even if they have a good relations in trade and technology from years. The study was for 5 year time period starting from January 2012 to December 2016 taking into account stock exchange index value of Russia and India. Econometric tools namely Augmented Dickey-Fuller test, Granger Causality, Johansen Co-integration tests were applied on the time series data and the data was analysed with the use of EViews 9. It was found during the study that stock market of India provide higher returns in compare of the stock market of Russia.Granger Causality test elaborated that return at Russian stock exchange does not Granger Cause the return at Indian stock exchange but return at Indian stock exchange Granger Cause return at Russian stock exchange. Testing the Co-integration for stock market integration speaks about no co-integration between stock market of India and Russia.

Keywords: India-RussiaInter-Linkages, Stock Market, Integration, Granger Causality

INTRODUCTION

Stock market, a subset of capital market, basically works as a channel for the demand and supply of the debt and equity capital. It helps in channelizing the money provided by depository institutions and savers unit to investees and borrowers through the different variety of financial instruments known as securities. This market has always been a very important part of the overall financial system of every economy. The secondary market does not only boost growth of different sectors of the economy but also channelize the surplus funds (savings) to the deficient fund (borrowings) units of the society and thereby enables the optimum allocation of the scarce capital resource thus provide the long-term funds for sustainable economic growth. Since, a sound and efficient stock market are now become more important for the economic progress of a nation therefore, the focus has been shifted now on the establishment of the variables which determine the stock returns.

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As per the recent regard, economy of the world has become flat and Internationalization of the capital markets has given the opportunity to investors not only to invest in its own country but also in the market of their own choice too. With the relaxation in the regulations of capital control among different countries capital market, the international stock markets has therefore, become increasingly important in recent times for the investors.The fastest emerging countries group in today era areBRICS nations. The original term 'BRIC' was coined by the then chairman of Goldman Sachs Asset Management, Jim O'Neill, in his publication *Building Better Global Economic BRICs* in 2001from the four leading emerging countries' initial letters: Brazil, Russia, India and China. This group was later extended and became 'BRICS' in 2010 by including South Africa. These countries possess quite different economies in terms of their resources, history and global economic strategies. However,every nation out of them has one thing in common i.e. relatively high growth potential in international comparison and high global economic growth rates. Russia and India has been in this group since its inception and India and Russia also enjoy a very healthy relationship with each other from the years in terms of trade relations as well as technological support. The presentpaper attempts to explore the dynamic inter-linkages between stock market of India and Russia and attempt to identify that whether there is any financial integration or linkages present between these two countries stock market due to the establishment of the long-term relations between Russia and Indian or there is no significant impact on the markets stock market of these two countries even if they have a good relations in trade and technology from years.

ABOUT INDIAN AND RUSSIAN STOCK MARKET

INDIA

Indian capital market for raising long term funds as well as short term funds. Stock market is experiencing phenomenal expansion with respect to the contribution in GDP which has been extensively researched by scholars (Bhole & Mahakud, 2009).There are two leading stock exchanges in India, the National Stock Exchange of India Limited (NSE) and Bombay Stock Exchange but for the purpose of this study only NSE has been taken. NSE was established in 1992 as the first demutualized electronic exchange of India which provide a more modern and screen-based fully-automated electronic trading system which actually makes the trading facility easier to investors who are spread across the country. It has the market capitalization of more than US$1.65 trillion which made it ' worlds 12th-largest stock exchange in the year 2015. NSE's flagship index is CNX Nifty which incorporates 50 stock index, which is used by the investors extensively in India and around the world for analyzing the Indian capital markets. NSE's is having a state of-the-art application with up time record of 99.99% which processes messages around 450 million daily having sub millisecond response time.

RUSSIA

According to Frye (2000),the Russian economy is the largest Eastern European economy, being the key suppliers of raw materials for the Europe, thus determining economic and political dynamics over the post-Soviet area to a great extent. Russian Trading System was established in 1995 as first regulated stock market of Russia. RTS Stock Exchange now trades with the range of financial instruments from the cash equities to the commodity futures. The RTS Index is based on the Exchange's 50 most capitalized and liquid shares. Moscow Exchange (Moskovskaya Birzha) was established in December 2011 by

merging the Moscow Interbank Currency Exchange (MICEX) and Russian Trading System. Now the name combined to 'Moscow Exchange MICEX-RTS'. Both organisations were formed in 1990s and they were the leading exchanges of Russia for two decades. The merger created a single entity and advanced Russia's plans to turn Moscow into a center of international financial and the exchange also took the initiative to rebrand it in July 2012.

REVIEW OF LITERATURE

Gulia and Handa (2015) analysed the daily closing indices value of stock exchange of BRICS in an attempt to examine causal relationship among the returns of BRICS' countries stock exchanges and looking into the possibility of integration of Indian market with rest of the members of BRICS nation's stock exchanges during June 2009 to March 2015. It was found by them that the return at Indian stock exchange Granger Cause the return at Russia, Brazil and South Africa's stock exchanges. Neither the China stock returns are Granger caused by Indian stock exchange nor is the Indian exchange is Granger Caused by China's stock exchange. Their results of co-integration test inferred that the stock exchanges of the BRICS nations are not co-integrated and they also conclude that the presence of co-movements in national stock markets limits the benefit of international diversification. Naidu (2014) attempted to examine co-integration with spillover effect took place among emerging markets for the purpose of understanding the key factors which may play a vital role in better formulation of policies in India. The findings of study indicated no significant integration and the co-integration vector obtained during the course of the study indicated that there exists an equilibrium relationship in the long-term among BRICS market.

Gupta (2014) examined the structure of dependency among BRICS countries stock market using the closing value of BRICS indices for the year 2013 for checking the normality and relationship which exist among BRICS Countries stock market. His findings suggest that Russia has a strong interdependency with China and Brazil in comparison to India and South Africa. Whereas, China is more influenced by the Brazil and Russian economy in comparison to India and South Africa. Although study conducted by Bhanumurthy and Singh (2014) evaluated the short-run IPOs' performance but they also revealed that the performance of the IPOs also affect the return of stock index (though in short-run). So, the stock index return of different economies are also influenced by the IPOs introduced in their respective economy. Tripathi & Kumar (2014) studied that changes in inflation may bring some short run movement in stock return but investing in equity will not provide a good movements in stock return in long-run when inflation is there at least in the BRICS markets.

Vieito et al. (2013) tried to explore the weak-form efficiency in the most developed countries of the world (G-20) along with measuring impact of 2007 financial crisis on markets of these countries, in terms of their efficiency. They explored the emergence of strong contemporaneous effects across all the international markets (barring Saudi Arabia) as a consequence of 2007 crisis may be just because of intra-day activity increment international across world markets. They found that the market index was inefficient while the individual stocks were efficient. An and Brown (2010) investigated the co-movements of the weekly and monthly index returns of the United States and BRIC's stock markets

during October, 1995 to October, 2009. They found some degree of co-integration between the United States and China, while there was no co-integration between the US and the other emerging markets by themselves. Aktar (2009) examined the stock prices co-movement among the Russia, Turkey and Hungry's market with the use of using daily index value from January 2000 to October 2008 with the application of JJ co-integration, Model of Vector Error Correction, Granger Causality test. The results of the study pointed out the existence of co integration among stock indices Russia, Turkey and Hungry. Furthermore, test of Granger Causality applied and it was revealed that there was bidirectional causality for the Turkish and Russian stock indices on the other side Hungarian stock market Granger cause Turkish stock market but not vice versa.

OBJECTIVES OF THE STUDY

The paper revolves around the inter-relationship between Indian and Russian stock markets. The different objectives of the study are as under:

Primary Objective:

1. Analyzing the degree of impact and interdependence of Russian and Indian stock market.

Secondary Objective*:*

1. To correlate the performance of Russian and Indian stock market.
2. To examine the scope of integration between Russian stock market.

RESEARCH DESIGN AND METHODOLOGY

DATA

This paper made an attempt to analyse inter-linkages between Russian and Indian stock market and tried to explored the new dynamic linkages and integration between these Russia and India. The study was undertaken for 5 year period starting from January 1, 2012 to December 31, 2016 in order to evaluate the dynamic relationship. We have taken one stock exchange from both the countries. The Moscow stock exchange (RTS Index) has been taken for Russia as the representative exchange and All Share Price Index is used. Since India has two leading stock exchanges National Stock Exchange (NSE) and Bombay Stock Exchange (BSE) therefore, we have selected only NSE (CNX Nifty Index) as the representative exchange of India.

The daily closing stock index value beginning from January 2012 to December 2016 has been considered as the reference period, in this way, the data of the 60 months has been analysed (total 2141 observations) to testify the possibility of inter-linkages between Russia and India. For the days when either of the stock exchange is closed, Indian market has been considered as the base and accordingly the missing values were found out. The data had been gathered from the secondary sources during the course of the study. The data mainly collected from *Moscow Exchange website, National Stock Exchange (NSE) website, Yahoo finance*, *Moneycontrol.com* and websites of the various agencies of respective government and their annual reports. The secondary data and other pertinent literature available on this

subject had been compiled from published/unpublished materials, documents and internet sources through extensive desk work. The data analysis was performed with E Views 9.

TOOLS AND TECHNIQUES

Descriptive Statistic(mean, median, mode, Standard deviation, skweness, kurtosis, correlation) has been used to summarise the general trend and pattern of the dataset. For checking the data series stationarity, which is essential for enhancing the reliability and accuracy of the model, we prepared the line graph of each series. Time series data is said to be stationary if mean, variance and auto-covariance are independent of time. For making the series stationary the log value is taken for indices and we further testified the nature of data series with the application of Augmented Dickey-Fuller test under the unit root hypothesis testing with the below mentioned equation.

$$\Delta y_t = \alpha + \beta_t + \gamma y_{t-1} + \delta 1 \Delta y_{t-1} + \cdots + \delta_{p-1} \Delta y_{t-p+1} + \varepsilon_t$$

whereα is referred as constant, βtime trend coefficient and p being lag order of autoregressive process. Imposing constraints $\alpha=0$ and $\beta=0$ corresponds to modeling the random walk and use of constraint $\beta=0$ corresponds modeling the random walk withdrift.

We applied Johansen Co-integration test in the indices of India and Russia and evaluated the correlation value and then after conducted test of Granger causality (pair wise) on Russian and Indian index return for capturing the degree and the direction of causation between India and Russia stock price indices under study as well as to further explore the short and the long-run interrelationships and integration between these two stock markets.

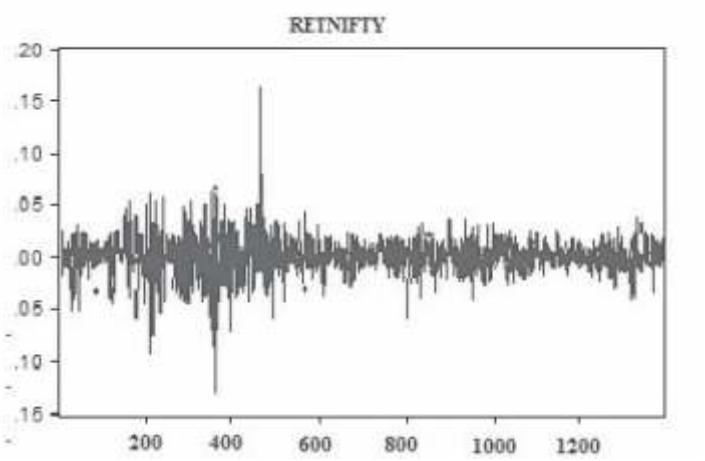
DATA ANALYSIS AND INTERPRETATION

The data is statistically evaluated in this section for stock indices of India and Russia. Descriptive statistics for the index return of India and Russia is shown in Table 1. The results show that they are negatively skewed which means the tail of distribution is on the left or distribution is having a long left tail and the concentration of mass distribution is on the right. The kurtosis, for normal distribution series, has a value of 3. Since the kurtosis value of India and Russia coming out to be less than 3, it infers that these return series are mesokurtic. The mean value of India is 8.835493 whereas the mean value of Russia is 7.042760 which mean Indian stock market has produces higher return than Russia. If we analyse standard deviation of stock index then we find that Indian stock market is less risky than stock market of Russian but coefficient of variation says other way round.

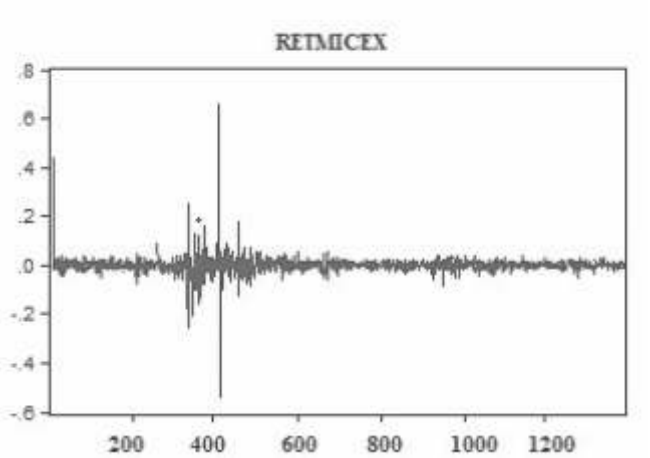
Table 1: Descriptive Statistics

Descriptive Statistics		
	India	Russia
Mean	8.835493	7.042760
Median	8.903686	7.107262
Maximum	9.104563	7.470116
Minimum	8.441769	6.443193
Std. Dev.	0.186787	0.246452
Skewness	-0.238475	-0.280661
Kurtosis	1.548526	1.819830
Jarque-Bera	120.7006	88.31173
Probability	0.000000	0.000000
Sum	10964.85	8740.065
Sum Sq. Dev.	43.26306	75.31574
Observations	1241	1241

Graph 1: Line graph of NSE Nifty Return



Graph 2: Line graph of Russian Index RTSI (MICEX-RTS)



For capturing the econometric results and its interpretation two series representing the stock indices of India and Russia were statistically analysed in EViews 9. Since it is essential to make sure series under study is stationary, in econometric analysis, we have used the log value of indices. The series was tested and found that stationary at first difference. The line graphs are prepared for stationarity. Graph 1 and 2 demonstrate the line graph of Indian and Russian stock indices returns at first difference. Since it is always better to testify and reconfirm the results with other available tools for having more reliability in the data series, we applied ADF test on the indices of Russia and India for unit root testing. Table 2 and Table 3 summarises results of the unit root testing with Augmented Dickey-Fuller. We tested the null hypothesis, data series has unit root, at 5% significance level and we found that since the p-value was more than 0.05 of data series at level making it non stationary but the series was found stationary at first difference as the p-value was lesser than 0.05 with 2 lags. Moreover, the t-statistics is found more than critical values so we must reject null hypothesis i.e., data has a unit root at first difference, hence it makes data fit for further econometric testing.

Table 2: ADF results for Indian Stock Index

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-20.12132	0.0000
Test critical values:	1% level	-3.435423	
	5% level	-2.863668	
	10% level	-2.567953	

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOGIND(-1))	-0.958261	0.047624	-20.12132	0.0000
D(LOGIND(-1),2)	0.034892	0.038742	0.900644	0.3680
D(LOGIND(-2),2)	-0.014504	0.028403	-0.510647	0.6097
C	0.000421	0.000278	1.513544	0.1304

Table 3: ADF results for Russian Stock Index

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-20.39749	0.0000
Test critical values:	1% level	-3.435423	
	5% level	-2.863668	
	10% level	-2.567953	

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOGRUS(-1))	-0.996259	0.048842	-20.39749	0.0000
D(LOGRUS(-1),2)	0.055499	0.039096	1.419529	0.1560
D(LOGRUS(-2),2)	-0.030815	0.028486	-1.081735	0.2796
C	-0.000211	0.000539	-0.390578	0.6962

We applied the Ganger causality test between them the probability value of the hypothesis RETRUS does not Granger Cause RETIND as is more than 0.05 which infers that the null hypothesis is accepted but the probability value of the hypothesis RETIND does not Granger Cause RETRUS is less than 0.05 which implies that the null hypothesis cannot be accepted. It infers that the return at Russian stock exchange does not Granger Cause the return at Indian stock exchange but return at Indian stock exchange Granger Cause return at Russian stock exchange.

Table 4: Granger causality test results

Null Hypothesis	F-Statistic	Prob.	Causal Relationship
RETRUS does not Granger Cause RETIND	2.44369	0.0873	No
RETIND does not Granger Cause RETRUS	3.23999	0.0395	Yes

Having tested Granger causality test, we applied Johansen Co-integration test for evaluating stock market integration and inter-relationship between these two countries. After comparing critical values of the result statistics, it is evident that since trace statistic is less than the critical value and p-value is also coming out to be more than 0.05 therefore we accept null hypothesis that there is no co-integration between stock market of India and Russia.

Table 5 : Co-integration results of India and Russia index return

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None	0.006636	10.67409	15.49471	0.2323
At most 1	0.001976	2.445242	3.841466	0.1179

Trace test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

CONCLUSION

National Stock Exchange (NIFTY) and RTS Exchange (MICEX-RTS) are leading stock exchange of India and Russia respectively and hence they work as a barometer to measure the economic growth of country. Since India and Russia are the part of BRICS consortium, which is a group of fastest growing nations of the world which is also being watched by the whole world, especially during last decade, therefore in this context it is also necessary to see that whether an inter-linkage between two countries of this group also exist or not. This paper tried to explore the financial relationship of India and Russia with the help of stock index and their co-movement with the use of various econometric tests.

We performed unit root test for checking the viability and usability of data series for econometric testing and we found data series non-stationary at level but it was found stationary at first difference. Descriptive statistics confirmed that Indian stock market provide higher return with less risk in compare of stock market of Russia which provides lower return with somewhat more risk but the coefficient of variation says otherwise. Correlation results explain that stock market of Russia is having negative movements with respect to Indian stock market.

It was also found during the study that Russian stock exchange does not Granger Cause the return at Indian stock exchange but Indian stock exchange Granger Cause return at Russian stock exchange. Application of Johansen Co-integration test for stock market integration speaks about no co-integration between the stock market of India and Russia. Therefore, we can say that although India (fastest growing country in Asia) and Russia (one of the technologically advanced country) are the parts of BRICS group

which in turn considered as fastest growing country group in the world, but forming a group and having financial integration, both are different chapters of the book. So, even if Russia and India enjoy a good relationship from years but still the Indian and Russian stock markets are not so co-integrated.

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A RELATIONAL STUDY ON REWARD SYSTEMS AND EMPLOYEE PERFORMANCE OF PRIVATE MOBILE TELECOMMUNICATIONS IN BANGLADESH

Sheikh Abdur Rahim[1]

Every organization needs qualified, committed, dedicated and competent human resources to successfully reach the desired destination. At present in Bangladesh, the mobile telecommunication businesses are highly competitive and challenging. That is why, these mobile telecommunication companies of Bangladesh are badly needed qualified human resources to efficiently face the present challenges and make the company successful. The authority of private mobile telecommunication companies of Bangladesh needs to provide sufficient rewards to their employees so that the performance of their employees would be enhanced. Thus, the paper attempts to explore the relationship between reward systems and employee performance of private mobile telecommunication companies in Bangladesh. Employees work in the organization for getting rewards and these rewards must be provided to the employees maintaining fairness and standard. Otherwise, rewards cannot be enhanced performance of the employees. So, this paper also attempts to find out the problems relating to the existing reward systems of private mobile telecommunication companies in Bangladesh and suggest some measures to ensure fairness and standard while providing rewards to their employees.

Keywords: Reward Systems, Employee Performance, Telecommunication, Effectiveness, Bangladesh.

INTRODUCTION

One of the fastest growing and high –tech developed business sector in Bangladesh is mobile telecommunication business sector. There are six mobile telecommunication companies operating their business activities in Bangladesh at present of which five are private. The number of private telecommunication companies in Bangladesh is gradually increasing. For this reason, the competition among these private mobile companies are also enhancing day-by-day. If a private mobile telecommunication company wants to survive under this highly competitive situation, this company needs adequate efficient human resources which only possible for the organization providing sufficient and fair rewards to them.

Employees are work in the organizations for getting rewards. Probably the most important reward, and certainly the most obvious, is money (DeCenzo and Robbins, 1999). Employees thirst are the money because they are the money makers. They need to earn enough money for meeting different expenditures in their lives. In addition to monetary reward, they want to get other rewards from the organizations. It includes promotion, desirable work assignment, recognition, training & development, good working environment, power, authority, post or position, etc. The authority of private telecommunication companies in Bangladesh must be provided these rewards to their employees according to the rules &

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regulations of the organizations so that they can motivate their employees properly. Employee motivation is badly needed for the private mobile telecommunication companies in Bangladesh to achieve their goals.

Human resources can tremendously influences on the overall performance of the organization in a multitude ways. They conceive and implement the organizational strategies for achieving the superior performance of an organization. The success and failure of an organization is largely depending on the performance of human resources. So, the authority of the private telecommunication mobile companies in Bangladesh must be formulated rules & regulations for providing different types of rewards to their employees fairly.

STATEMENT OF PROBLEM

The private mobile telecommunication business in Bangladesh is very much competitive and challenging at present. Currently, there are five private mobile telecommunication companies operating their business activities in Bangladesh. The competition among these mobile telecommunication companies are increasing gradually. Under this circumstance, they need enough skilled and competent human resources to face the challenges successfully. That is why, they need to formulate and implement laws, rules & regulations, systems, etc. to provide fairly different types of rewards to their employees. In this study, the researcher has tried to explore the relationship between reward systems and employee performance of private mobile telecommunication companies in Bangladesh.

OBJECTIVES OF THE STUDY

The present study has been conducted with the following objectives:

i) To investigate the reward systems of private mobile telecommunication companies in Bangladesh.

ii) To explore the relationship between reward systems and employee performance of private mobile telecommunication companies in Bangladesh.

iii) To evaluate the reward systems and employee performance of private mobile telecommunication companies in Bangladesh.

iv) To find out the problems (if any) relating to the existing reward systems of private mobile telecommunication companies in Bangladesh.

v) To suggest some measurers for ensuring fairness in the reward systems of private telecommunication mobile companies in Bangladesh and bringing motivation among the employees of these private mobile telecommunication companies.

METHODOLOGY OF THE STUDY

The present study is both qualitative and quantitative in nature. Both approaches have been applied to explore and evaluate the reward systems and employee performance of private mobile

telecommunication companies in Bangladesh.

The methodology of the current study has been designed in the following ways:

i) **Population:** The target population in the current study is all employees of private mobile telecommunication companies in Bangladesh operating in Dhaka City.

ii) **Sampling Technique:** The random sampling technique has been used in this study. There are five private mobile telecommunication companies operating their business activities in Bangladesh at present. Among them three private mobile telecommunication companies operating in Dhaka city have been taken as sample size considering market size, number of customers, growth rate, human resources and reputation in the market. These three private mobile telecommunication companies have been represented the other private mobile telecommunication companies operating in Bangladesh.

iii) **Sample Size:** A number of 100 employees from three private mobile telecommunication companies (Grameenphone Limited, Banglalink Digital Communication Limited and RobiAxiata Limited) of Bangladesh operating in Dhaka city has been selected as sample through random sampling.

iv) **Sample Unit:** The 100 employees from three private mobile telecommunication companies in Bangladesh in different positions operating in Dhaka city was surveyed to collect the necessary data/information for conducting the present study through random sampling technique based on number of human resources and operational dispersion of the mobile telecommunication companies. These are shown in following table 1:

Table 1: Sample Size

SL.	Name of the Companies	No. of Employees
1.	Grameenphone Limited	40
2.	Banglalink Digital Communication Limited	35
3.	RobiAxiata Limited	25
Total		**100**

Source: Field Survey

v) **Sources of Data:** The researcher has collected data from two sources for conducting the present study. These are as follows:

a) Primary sources
b) Secondary sources

vi) **Data Collection Technique:** The structured questionnaire has been applied to collect primary data/information from the employees of three privatemobile telecommunication companies in Bangladesh operating in Dhaka city. The secondary data/information has been collected from the following sources:

a) Publications of mobile telecommunication companies
b) Websites of the mobile telecommunication companies
c) Annual Reports of the mobile telecommunication companies
d) Official Records of the mobile telecommunication companies
e) Website of Bangladesh Telecommunication Regulatory Commission
f) Books of Human Resource Management
g) Journals of Human Resource Management
h) National and International Conference Papers of Human Resource Management

vii) Data Analysis Technique: The qualitative data has been analyzed using content and logical analysis techniques. The quantitative data has been analyzed through SPSS (Statistical Package for Social Science) software. The techniques of quantitative data analysis techniques are frequency distribution and percentages, which are used to determine the proportion of respondents choosing the various responses. These are done for each group of items relating to the research questions.

viii) Data Presentation Style: The data has been presented using texts, tables or pictorial figures and graphs in this study. The texts and tables are enable the researcher to show precisely numerical and non-numerical data value and other specific data in a small space. The figures and graphs are enable the researcher to show trends, patterns and relationships across and between data sets when the general pattern is more important than the text data values and to summarize research results.

LITERATURE REVIEW

The private mobile telecommunication business in Bangladesh is very much challenging. The reason behind that the number of private mobile telecommunication companies is increasing day- by-day. In addition to that the government of Bangladesh has been formulating different laws, rules & regulations to control the activities of these companies. As a result, the authority of private mobile telecommunication companies in Bangladesh must follow these laws, rules & regulations to operate their business activities in this country. Now, the private mobile telecommunication companies are required to hire qualified and competent human resources so that they can effectively perform their assigned tasks & duties and contribute to the continuous growth & development of the organizations. If a private mobile telecommunication company wants to hire qualified & competent human resources, this company needs to provide adequate rewards to these employees so that the performance of these employees will be increased.

Organizations must develop a good reward system to provide rewards to the employees on the basis of their performance. Reward systems are the planned activities that organizations implement in order to motivate their employees or individuals to achieve the set goals of the company. Human resources are most valuable asset of an organization. Recently, the authority of the organizations has given much attention to manage the human resources because much more could be gained from a better handling of human resources within organization. Therefore, rewards systems are outcomes in the organization that satisfy work-related needs for employees (Szilagyi and Wallace, 1981). Most organizations view their

systems of rewarding employees as an additional cost of doing business which should not be so because it is very salient to reward employees and the outcome is that it motivates them to put in more efforts, skills and ability which at the long run increases productivity.

Nevertheless, in an increasing knowledge and service based economy, where remuneration can constitute 75 percent of total operation cost, progressive organizations are coming to reward systems as a source of competitive advantage. An effective organizational reward system will help to create a skilled, committed, competent and well-motivated workforce, one that ensures that the organization stays ahead of its competitors (Armstrong, 2001).

Employee rewards has been thus because an important in today's economy in Bangladesh as companies strive to find a balance between reward components, as well as identify those components that provide for employees' personal needs (Rahim, 2009). As competition in the workplace increases are becoming more demanding when it comes to rewards, expecting organizations to make expectations based on their individual performances and needs (Rahim, 2011).

Performance refers to the degree of accomplishment of the tasks that make up an employee's job. It refers how well an employee is fulfilling the requirements of the job. Reward and performance of the employees are highly related. The effectiveness of an organization's performance and reward management have an impact on moral values and productivity of the employees (Yazici, 2008).Many organizations have found that far from complementing the stated aims of the business, their performance and reward systems were actually driving counter-productive behavior. 'Path-Goal Model' is absolutely explain the relationship between reward system and employee performance. The model states that “if a worker sees high productivity as a path leading to the attainment of one or more of his personal goals, he will tend to be a high producer. Conversely, if he sees low productivity as a path to the attainment of his goals, he will tend to be low producer. In other words, the employee would be motivated to expand a greater amount of effort in his work if he felt his previous effort had resulted in his receiving rewards”.

Based on the above literature review it can be said that there is a close relationship between reward systems and employee performance in the organization. Thus, the present study tries to explore the reward systems and employee performance of private mobile telecommunication companies in Bangladesh.

DEFINITION OF REWARD SYSTEMS

Rewards can be defined as “something given to an employee in recognition of his/her service, effort or achievement”. Reward systems are the planned activities that organizations implement in order to motivate their employees or individuals to achieve the set goals of the company.

TYPES OF REWARDS SYSTEMS

There are number of ways to classify reward systems in an organization. Generally, the reward systems can be classified into two ways. Such as intrinsic reward systems and extrinsic reward systems. Intrinsic rewards include recognition, learning opportunity, challenging work, good working environment and

career advancement. Extrinsic rewards include salaries/wages, bonuses, fringe benefits and promotion.

QUALITIES OF EFFECTIVE REWARDS

The effective reward systems should have some qualities. It includes importance, equitable distribution, visibility, flexibility and low cost. The reward work best when they are individualized to reflect differences in what employees consider important, are perceived as equitable, are visible, and can be allocated at a relatively low cost.

CRITERIA OF DISTRIBUTING REWARDS

The rewards should be given to the employees in the organization considering some criteria. It includes performance, seniority, skills held, effort, job difficulty and discretionary time.

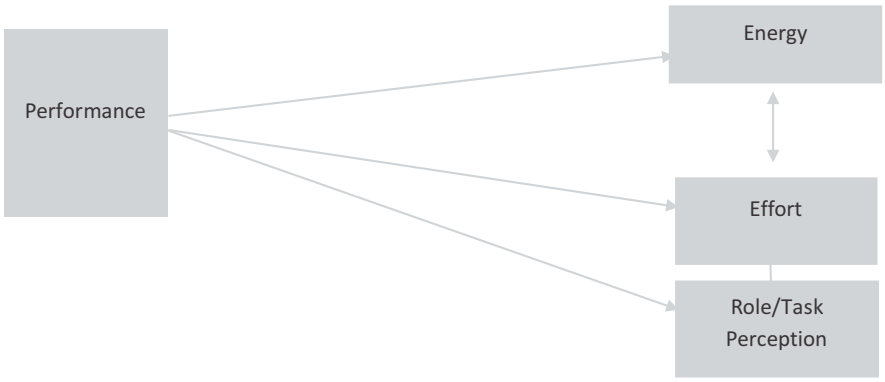
DEFINITION OF PERFORMANCE

Performance refers to the degree of accomplishment of the tasks that make up an employee's job. It refers how well an employee is fulfilling the requirements of the job. Campbell et al (1993)have defined the term 'performance'. According to them, “performance is what the organization hires one to do, and do well”.

INGREDIENTS OF PERFORMANCE

The ingredients of performance can be shown in the following figure 1:

Figure-1: Ingredients of Performance

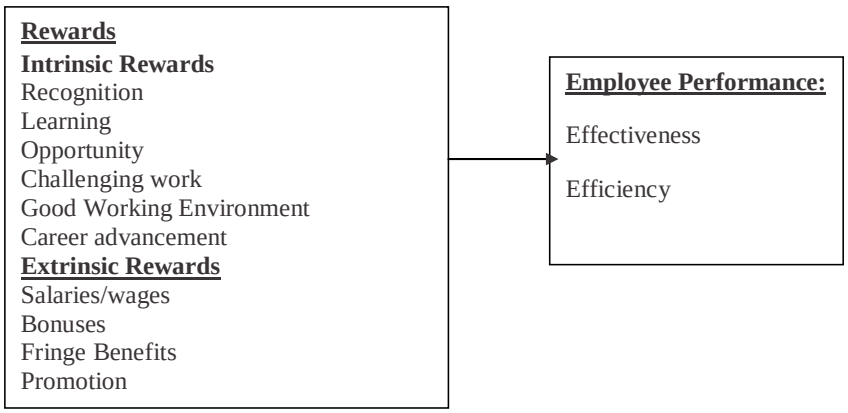


Source: Field Survey

RELATIONSHIP BETWEEN REWARDS AND EMPLOYEE PERFORMANCE

The relationship between rewards and employee performance can be shown in the following figure 2:

Figure-2: Relationship between Reward and Employee Performance



Source: Field Survey

OPERATIONAL DISPERSION OF MOBILE COMPANIES IN BANGLADESH

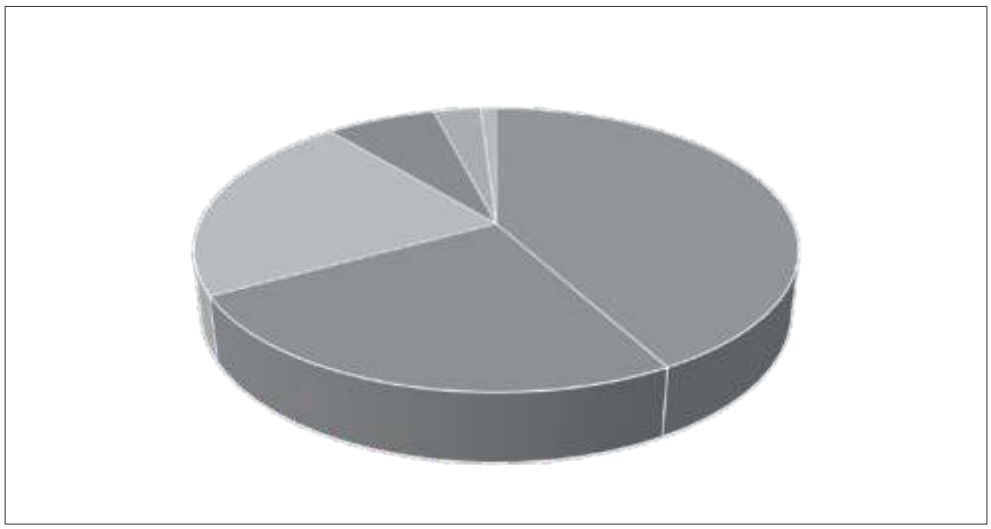
Bangladesh is now striving to obtain the vision 2021. In this regard, the mobile telecommunication business sector has been playing a very significant role by developing knowledge-based economy. There are four pillars of knowledge –based economy. One of the important pillars is information infrastructure with technology. In fact, mobile phones facilitate effective communication & the dissemination and processing of information which is badly needed to develop the knowledge-based economy. The mobile telecommunication business sector consists of six companies of which one is government. It is shown in the following table-2:

Table 2: Market Share of Mobile Telecommunication Companies in Bangladesh

Sl.	Name of the Companies	Market Share (%)
1.	Grameenphone Limited	42
2.	Banglalink Digital Communication Limited	25
3.	Robi Axiata Limited	22
4.	Airtel	7
5.	Teletalk	3
6.	Citycell	1

Source: Bangladesh Telecommunication Regulatory Commission (Annual Report: 2014-2015)

Figure 3:Market Share of Mobile Telecommunication Companies in Bangladesh



Source: Graphical Representation

The above table 2 and figure 3 show that the existing market share of Grameenphone Ltd. is 42 percent, Banglalink Ltd. 25 percent, Robi 22 percent, Airtel 7 percent , Teletalk 3 percent and Citycell 1 percent. It indicates that Grameenphone Ltd. is on the market leader position in the mobile telecommunication business sector of Bangladesh. Other mobile telecommunication companies are now trying to enhance their performances for taking the market leadership position by applying different business strategies. Recently, Robi and Airtel have been merged to operate their future business activities. As a result, the competition among the mobile operators in Bangladesh are increasing day-by-day. Each and every mobile telecommunication company is trying to develop their networks & services regularly for the enhancement of customers' satisfaction.

The government of Bangladesh is now very much committed to make “Digital Bangladesh” and in this case, the mobile companies have been playing a very positive role by expanding their networks & services throughout the country. As a result, the numbers of mobile subscribers in Bangladesh are now increasing rapidly. The present growth trend of mobile subscriber in Bangladesh is shown in the following table 3:

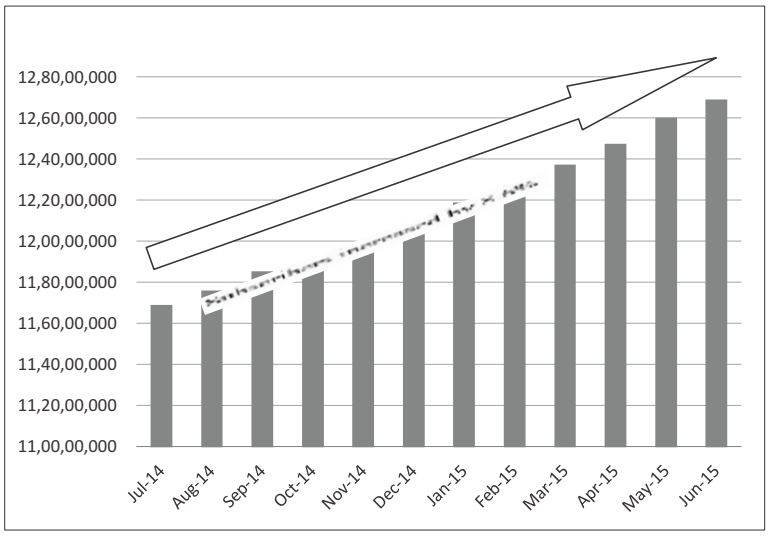
Table 3: Mobile Subscribers in Bangladesh

Month	Subscribers	Growth Rate (%)
July-14	116,870,915	
August-14	117,576,803	1
September-14	118,492,547	1
October-14	118,931,730	0
November-14	119,623,221	1
December-14	120,350,497	1
January-15	121,859,834	1

February-15	122,656,662	1
March-15	123,690,371	1
April-15	124,704,869	1
May-15	125,970,743	1
June-15	126,866,091	1

Source: Bangladesh Telecommunication Regulatory Commission (Annual Report: 2014-2015)

Figure 4: Mobile Subscribers in Bangladesh



Source: Graphical Representation

The above table 3 and figure 4 show that the numbers of mobile subscribers in Bangladesh are increasing very swiftly at present. The mobile subscriber has increased to 126,866,091 in June, 2015. The overall growth of mobile phone subscribers in Bangladesh has increased by 8.6 percent during 2014-2015, which is really very impressive and the monthly growth rate in this period is around 1 percent.

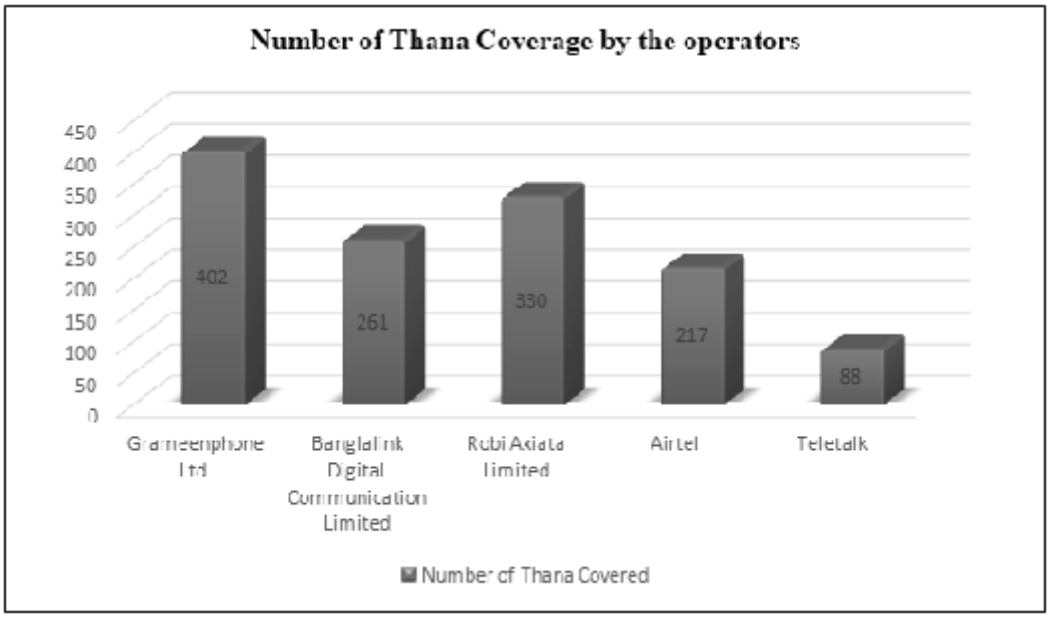
The mobile telecommunication companies are operating their business activities throughout the country after taking 3G license in September 2013 from Bangladesh Telecommunication Regulatory Commission (BTRC). The statistics of Thana and District covered by the different 3G operators licensed by the Commission are given below table 4 & 5 and figure 5 & 6:

Table 4: Number of Thana coverage by the different 3G Operators licensed by the Commission

SL.	Name of the Companies	Number of Thana Coverage
1.	Grameenphone Ltd.	402
2.	Banglalink Digital Communication Limited	261
3.	Robi Axiata Limited	330
4.	Airtel	217
5	Teletalk	88

Source: BTRC Annual Report 2014-2015

Figure 5:Number of Thana coverage by the different 3G Operators licensed by the Commission



Source: Graphical Representation

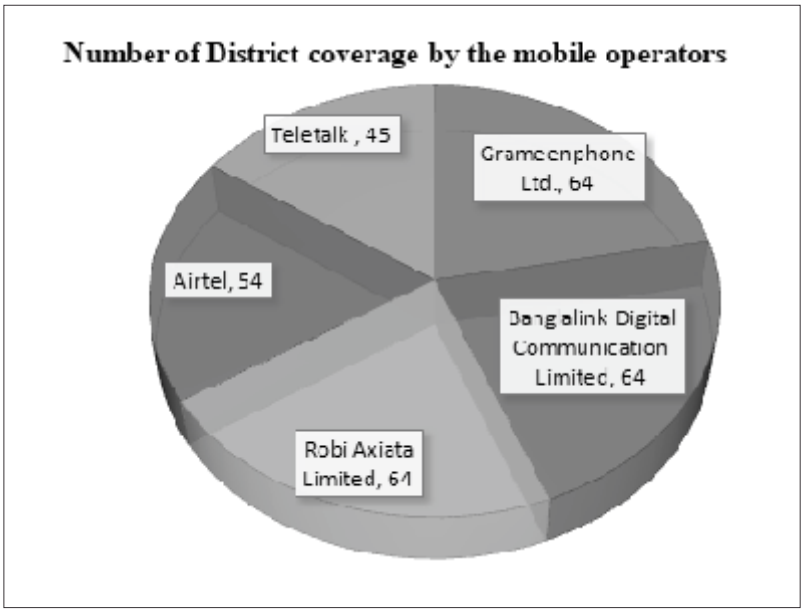
The above table 4 and figure 5 show that Citycell has not got license to operate 3Gactivities. There are 639 Thana at present in Bangladesh. But the table and figure also show that no mobile company could not operate 3G activities in all Thana in Bangladesh.

Table 5: Number of District coverage by the different 3G Operators licensed by the Commission

SL.	Name of the Companies	Number of District Coverage
1.	Grameenphone Ltd.	64
2.	Banglalink Digital Communication Limited	64
3.	Robi Axiata Limited	64
4.	Airtel	54
5.	Teletalk	45

Source:BTRC Annual Report 2014-2015

Figure 6:Number of District coverage by the different 3G Operators licensed by the Commission



Source: Graphical Representation

There are 64 districts in Bangladesh at present. The table 5 and figure 6above show that Grameenphone Ltd., Banglalink Ltd. and Robi Ltd. have already operated 3G activities in all districts in Bangladesh. So, it can be said that the performances of these mobile companies are good in case of district covered with the help of 3G connection. But Airtel and Teletalk need to enhance their performance in this regard. In the meantime, Airtel has already merged with Robi Ltd. to operate their activities jointly in the future.

EXISTING REWARD SYSTEMS OF SAMPLE PRIVATE MOBILE TELECOMMUNICATION COMPANIES IN BANGLADESH

The present reward system of sample private mobile telecommunication companies in Bangladeshis shown in the following table 6:

Table 6: Present Reward Systems of Sample Private Mobile Telecommunication Companies in Bangladesh

Sl.	Name of the Companies	Types of Rewards given to the Employees	Criteria / Systems followed to pay rewards to the Employees
1.	Grameenphone Ltd.	▪ Job enrichment ▪ Flex-time ▪Job rotation ▪Money ▪Promotions ▪Fringe benefits ▪Salaries ▪Wages ▪Bonuses ▪Profit Sharing ▪ Pension plans ▪ Paid vacation ▪Paid sick leaves ▪ Well-located parking space with their name clearly painted ▪Lunch time ▪Prayer time ▪Incentive systems ▪Merit pay plans ▪Cost-of –living increases ▪Salary increases	▪ Promotion or rule changes ▪ 9 hours including 1 hour lunch ▪ Rotating work assignment within the organization based on skills, academic qualifications, necessity of the department/division, etc. ▪ Each band has different salary range comparison from 70% to 130%, Basic house rent, LFA, Festival bonus yearly two basics, Medical allowance, and transport allowance ▪Promotion is maintained through career development framework & salary review policy (changes every year) ▪Health insurance (OPD, IPD), Life insurance, Pension & gratuity, Pension fund loan, Children education loan, Location allowance, Moto bike allowance, Handset allowance, car benefit/allowance for specific funds, Pick drop service, Meal benefit, Day-care facility, Gym service, Cafeteria, Discounted outlets (Well food, Capricorn's, Kivahen), Workers' welfare fund ▪Each band has different salary range comparison from 70% to 130% ▪Given wages to the workers based on company rule ▪ Performance bonus (Quarterly & Individual) ▪Yearly around 3 lac ▪10 % of basic salary of all employees ▪ 10 days casual and 15 days annual leave ▪14 days in a year ▪ Well-located parking only

			▪ Starting from 12 pm ▪Starting from 12 pm ▪Provided sales incentive based on sales performance ▪Provided performance bonus based on company and individual performance Company part: Quarterly disbursed on quarterly KPI achievement of the company Individual part: Yearly disbursed on yearly performance of the employees ▪Increasing salary and other benefits of the employees based on the market situation ▪Increasing salary based on inflation in the market.
2.	Banglalink Digital Communication Limited	The author of the paper has requested to the HR department /division in the written format for providing existing reward systems of the company in several times according the anonymous reviewer comments on the paper. But they were reluctant to give the data/information. That is why, the author couldn't add the existing reward systems of this company.	The author of the paper has requested to the HR department /division in the written format for providing existing reward systems of the company in several times according the anonymous reviewer comments on the paper. But they were reluctant to give the data/information. That is why, the author couldn't add the existing reward systems of this company.
3.	Robi Axiata Limited	The author of the paper has requested to the HR department /division in the written format for providing existing reward systems of the company in several times according the anonymous reviewer comments on the paper. But they were reluctant to give the data/information. That is why, the author couldn't add the existing reward systems of this company.	The author of the paper has requested to the HR department /division in the written format for providing existing reward systems of the company in several times according the anonymous reviewer comments on the paper. But they were reluctant to give the data/information. That is why, the author couldn't add the existing reward systems of this company.

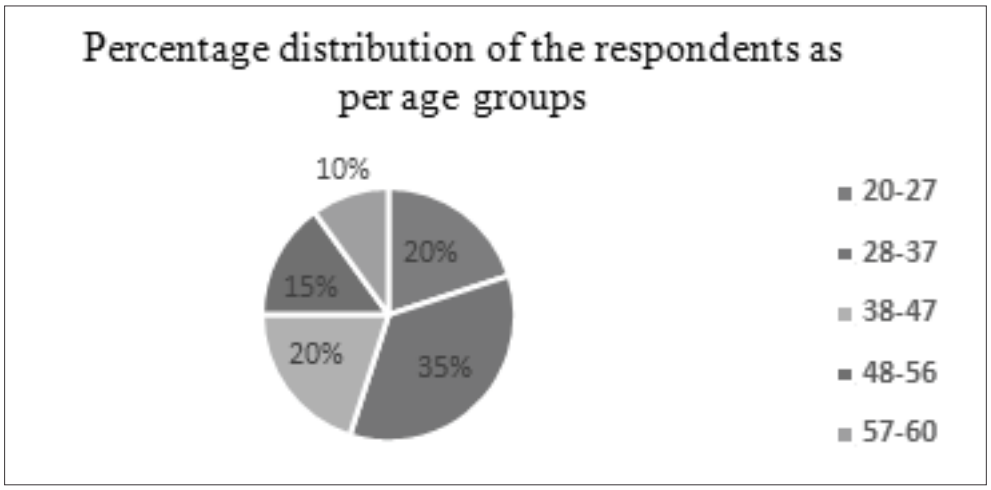
Source: Human Resource Division of SamplePrivate Mobile Telecommunication Companies in Bangladesh, November, 2016

FINDINGS AND ANALYSIS OF THE STUDY

- **Age of Respondents**

The age distribution of respondents is to help the researcher to schedules the employees because the

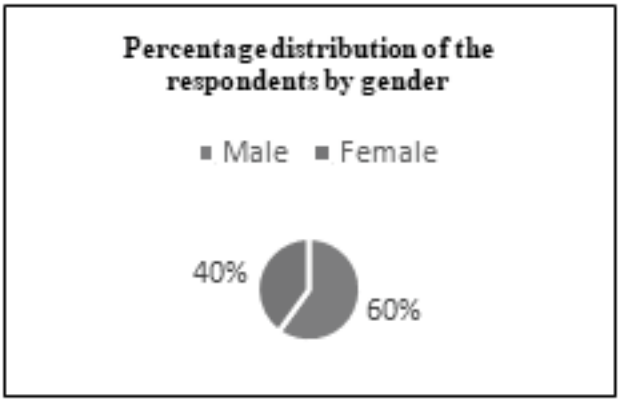
companies employ different types of employees. The following graph summarizes the data obtained on the ages of respondents:



The above graph shows that the majority with 35 respondents between 28-37 years are representing 35 percent. The table and graph also show that 20 respondents between the ages of 20-27 years are representing 20 percent and 20 respondents between the ages of 38-47 are representing 20 percent and ages between 48-56 representing 15 percent with 15 respondents and between 57-60 representing 10 percent with 10 respondents respectively. These statistics indicate that the employees whose ages between 28-37 years are playing significant role to accomplish the activities of the private mobile telecommunication companies in Bangladesh.

- **Gender of Respondents**

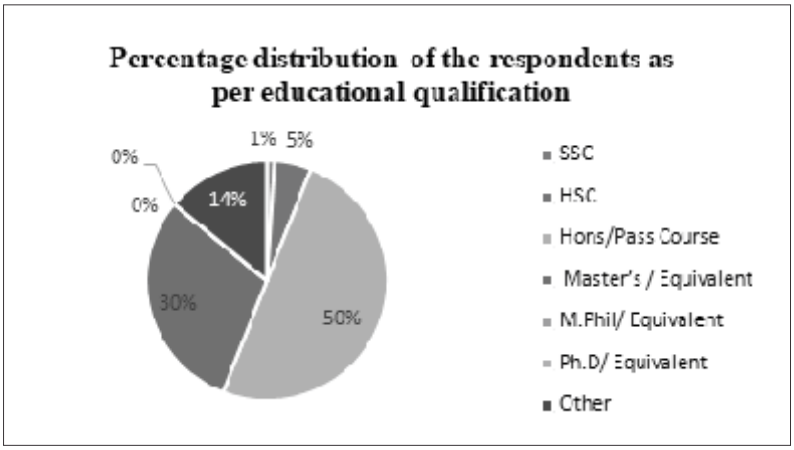
The data obtained on the gender of respondents has been shown in the following graph:



The above graph shows that the majority of the respondents are male which about 60 percent and the rest of 40 percent are female. These statistics indicate that male employees are dominating at work place of private mobile telecommunication companies in Bangladesh.

- **Educational Background of Respondents**

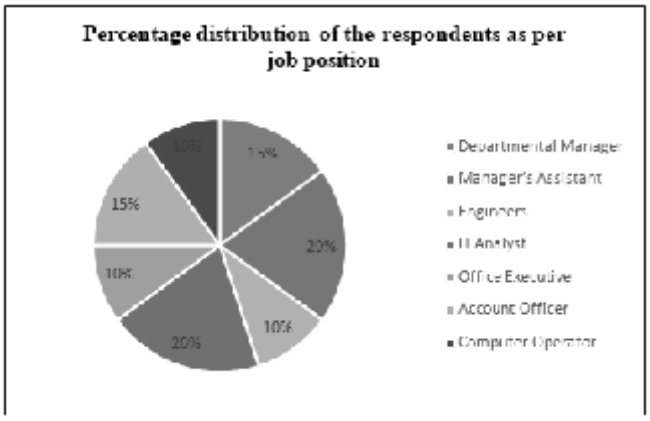
It is also needed for the study to find out the education level of the respondents. The reason behind is to explore what kind of rewards the respondents may want to get from the organization as motivation for their performances. The educational background of the respondents has been shown in the following graph:



The above graph show that the majority of the respondents are the Hons/ Pass Course degree holders whose percentage are 50 percent of total respondents, Master's/ Equivalent degree holders are 30 percent of the total respondents, M. Phil/ Equivalent and Ph.D / Equivalent degrees are 0 (Zero) percent of the total respondents and other degree holders are 14 percent of the total respondents.

- **Job Position of Respondents**

The job position of the respondents has been shown in the following graph:

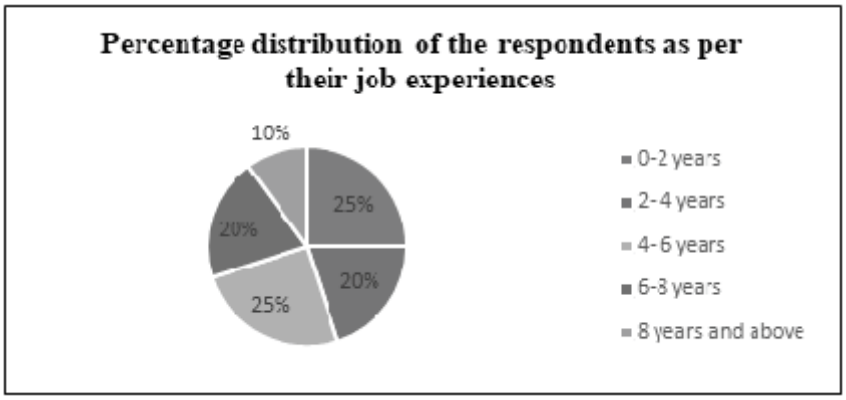


The above graph shows that the various positions of employees who responded to the questionnaires in this study. IT Analyst and Manager's Assistant formed the majority with 40 percent of the total respondents, Engineers scored 10 percent, Departmental Manager's with 15percent representation, Office Executive scored 10 percent of the total respondents, Account Officer representing 15 percent, and Computer Operator representing 10 percent out of 100 percent of total respondents. These statistics indicate that the private mobile telecommunication companies have various positions who provide their

efforts towards the growth attainment of organizational goals.

- **Working Experiences**

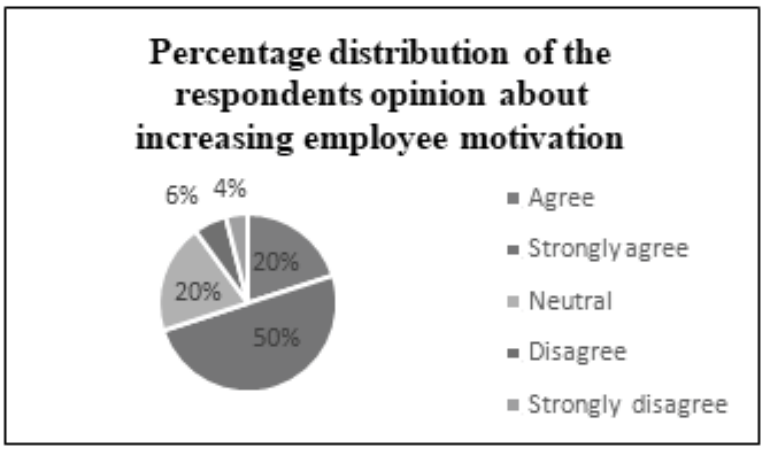
The working experiences of respondents have been shown in the following graph:



The above graph show that the majority of the respondents are between 0-2 years of working experiences in the company representing 50 percent of total respondents, 2-4 years working experiences are representing 20 percent of the total respondents, the employees who have the experience of 6-8 years representing 20 percent of the total respondents, while 8 years and above experienced employees scored 10 percent only.

- **Rewards increase employee motivation**

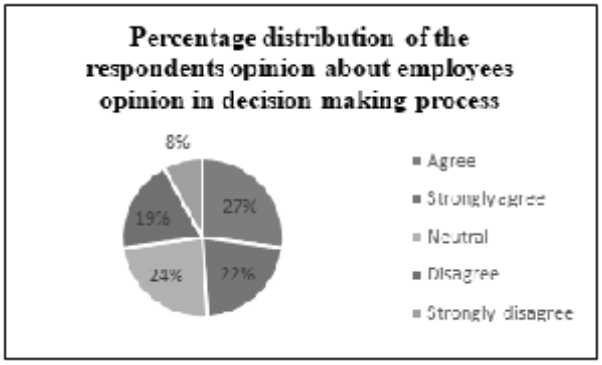
The data obtained on the question 'Reward increases employee motivation' has been shown in the following graph:



The above graph shows that 50 percent of the respondents strongly agreed that reward increases employee motivation. It indicates that if the authority of the private mobile telecommunication companies' pay rewards to the employees fairly, then it increases employees' motivation.

1. Employees have an opportunity to provide opinion in the decision making process of the reward system in the company.

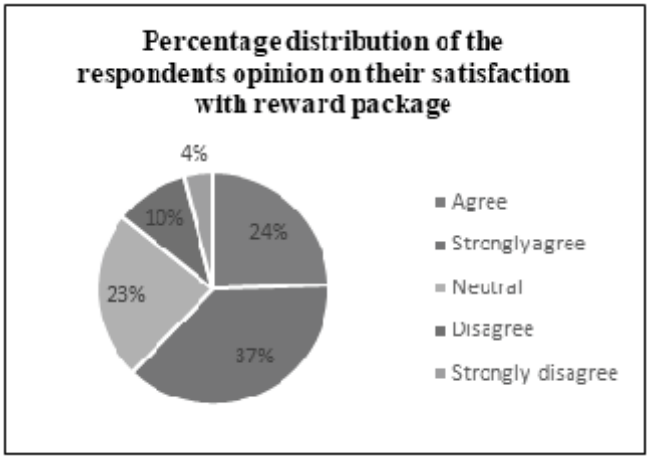
The data obtained on the question 'Employees have an opportunity to provide opinion in the decision making process of the reward system in the company' has been shown in the following graph:



The above graph shows that 27 percent of the respondents agreed that employees have an opportunity to provide opinion in the decision making of the reward system in the company and 22 percent respondents strongly agreed that they have the opportunity to provide opinion in the decision making process of the reward system in the organization. Thus, it can be said that the authority of the private mobile telecommunication companies practices good human resource management systems in the organization.

2. You are satisfied with your present reward package.

The data obtained on the question 'You are satisfied with your present reward package' has been shown in the following graph:

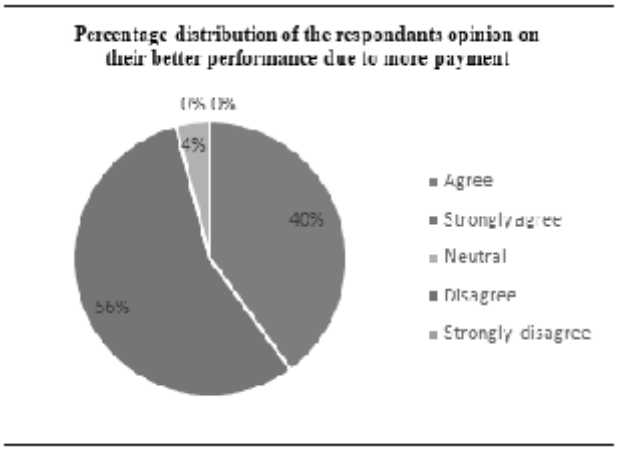


The above graph shows that cumulative 61 percent of the respondents strongly agreed that they are satisfied with their present reward package. It means that the majority of the employees of private mobile telecommunication companies are satisfied with their present reward packages. But 39 percent of the employees of private mobile telecommunication companies in Bangladesh are not satisfied with their present reward packages they received. 23 percent of the employees responded neutral while the remaining 14 percent (10 percent disagreed and 4 percent strongly disagreed) responded that they are absolutely not satisfied with their present reward package they received. Taking these analyzes into

consideration the manager of each private mobile telecommunication company in Bangladesh is recommended that employee satisfaction is the cornerstone of every organization and rewarding of the employees could play a vital role in the organization's well-being.

3. You would do better if you were paid more (or given more incentives).

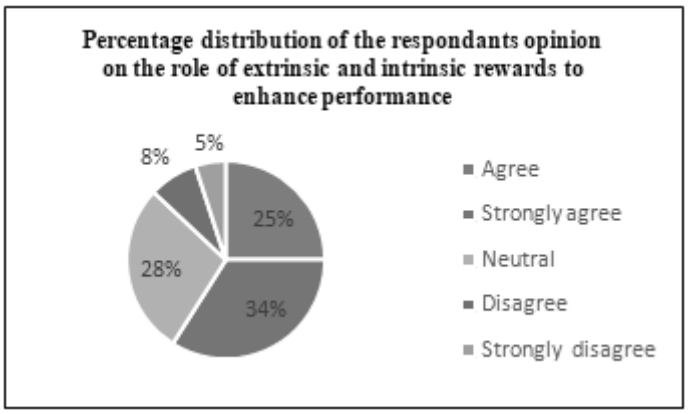
The opinion obtained on the question 'You would do better if you were paid more (or given more incentives)' has been shown in the following graph:



The above graph shows that cumulative 96 percent of the respondents strongly agreed that employees would do better if they were paid more by the organizations. But people are different when it comes to reward some of the employees prefer non-monetary rewards instead of monetary rewards. But in the private mobile telecommunication companies in Bangladesh 4 percent of the employees prefer non-monetary rewards. So, some employees need only to say thank you, while others do better if they get promotions or incentives.

4. Extrinsic rewards are more important than intrinsic rewards for enhancing your performance.

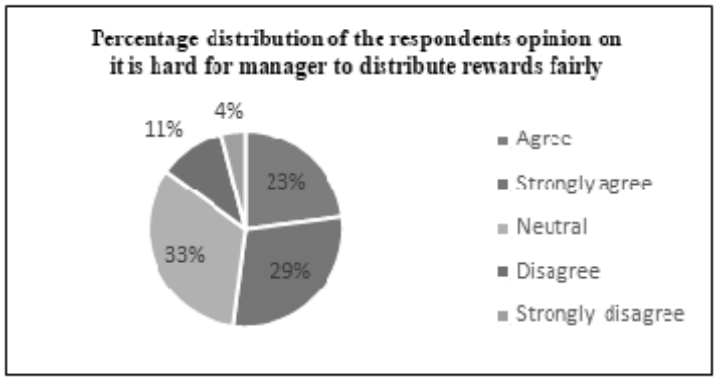
The result obtained on the question 'Extrinsic rewards are more important than intrinsic rewards for enhancing your performance' has been shown in the following graph:



The above graph shows that cumulative 59 percent of the total respondents strongly agreed that employees prefer extrinsic rewards than intrinsic reward, i.e. they tend to receive monetary rewards rather than non-monetary rewards. However, 28 percent of the employees responded neutral which they prefer neither extrinsic nor intrinsic rewards, while the 13 percent of the respondents disagreed that extrinsic rewards are more important than intrinsic rewards. They may prefer intrinsic rewards which mean they like promotion or something similar for enhancing their performances.

5. It is hard for manager to distribute rewards fairly.

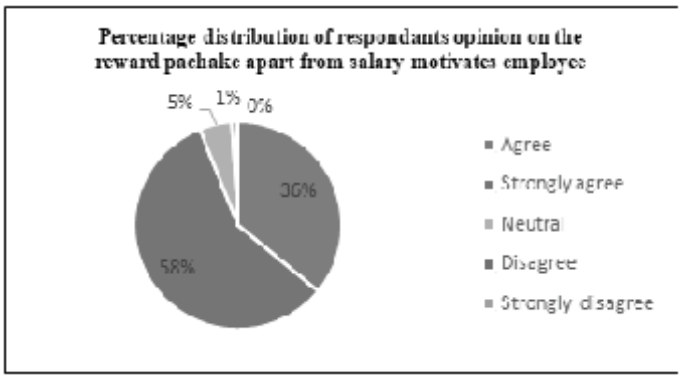
The opinion obtained on the question 'It is hard for manager to distribute the rewards fairly' has been shown in the following graph:



The above graph shows that the majority respondents 33 percent replied that the managers face neither difficult nor easy to distribute the rewards fairly. But 29 percent of the respondents are strongly agreed that managers face difficult in distributing rewards fairly. Taking these analyses into consideration managers have to be careful while distributing rewards among the employees so that he/she can maintain fairness in this case.

6. The reward package apart from your salary motivates you to perform better.

The data obtained on the question 'The reward package apart from your salary motivates you to perform better' has been shown in the following graph:

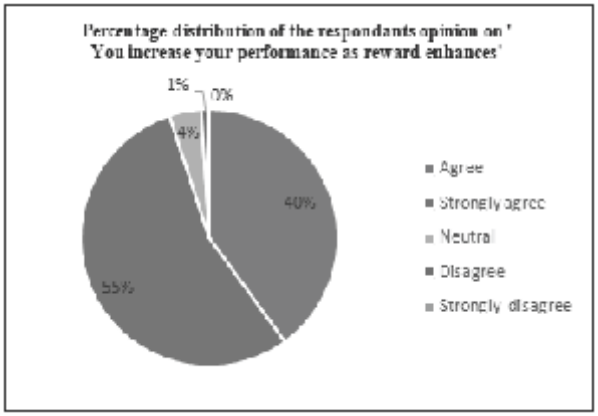


The above graph shows that the majority respondents 58 percent are strongly agreed that reward packages apart from salary enhance the performance of the employees in the private mobile

telecommunication companies in Bangladesh. So, it can be said that if the authority of the companies want to motivate their employees, then they should provide sufficient rewards to employees apart from their salaries.

7. You increase your performance as reward enhances.

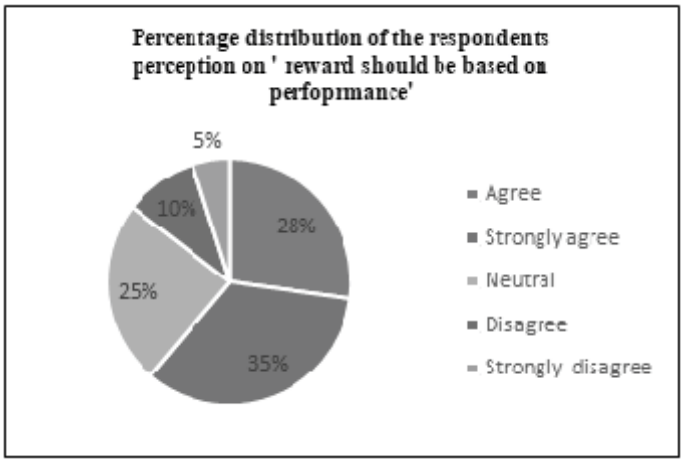
The opinion obtained on the question 'You increase your performance as reward enhances' has been shown in the following graph:



The above graph shows that the majority respondents 55 percent are strongly agreed that employees increase their performance after enhancing rewards. So, it can be said that reward of all kinds plays an important role in motivating employees to do much better.

8. You believe that reward should be based on performance

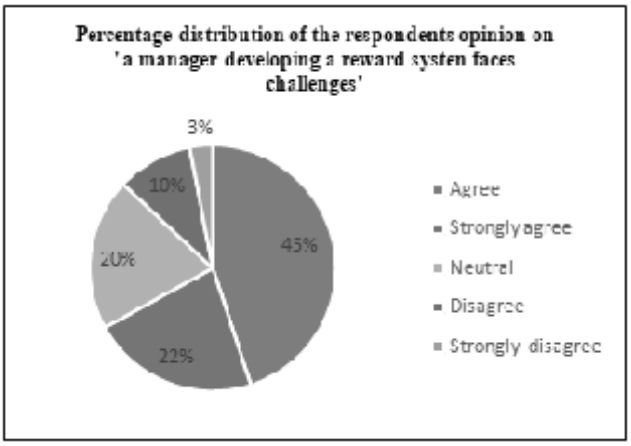
The data obtained on the question 'You believe that reward should be based on performance' has been shown in the following graph:



The above graph showsthat the majority respondents 35 percent are strongly agreed that reward should be provided to the employees based on their performances. Both intrinsic and extrinsic rewards are motivated employees. A reward system is effective when it recognized both sources of motivation. There are many factors that influence and motivate the employees in the organization.

9. You think when a manager developing a reward system faces challenges.

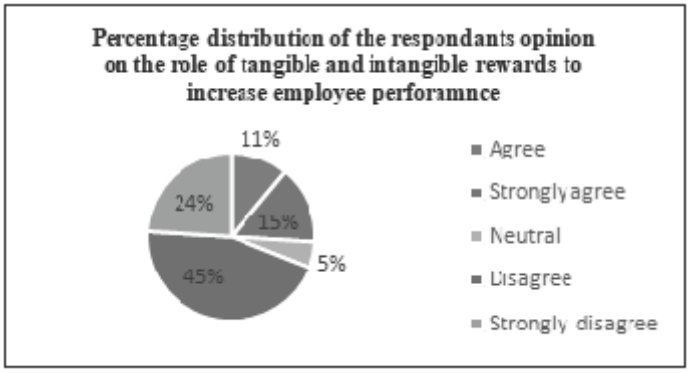
The data obtained on the question 'You think when a manager developing a reward system face challenges' has been shown in the following graph:



The above graph shows that the majority respondents cumulative 67 percent are agreed that the manager faces challenges while developing the reward system. So, the manager needs to formulate strategies to face the challenges effectively while developing the reward systems for the employees in the company.

10. You think that tangible and intangible rewards are equally important to the employees.

The data obtained on the question 'You think that tangible and intangible rewards are equally important to the employees' has been shown in the following graph:



The above graph shows that the majority respondents 76 percentage are disagreed that tangible and intangible rewards are equally important to the employees. It means that most of the employees perceive that tangible rewards are more important that intangible rewards and they prefer monetary rewards instead of non-monetary rewards.

RECOMMENDATIONS

The following recommendations can be helpful for the authority of private mobile telecommunications companies in Bangladesh to overcome the problems associated with the existing reward systems of the

companies, which will lead to enhance the performance of the employees:

i)The authority of the private mobile telecommunication companies in Bangladesh should consider the employee and organization objective while formulating the laws, rules & regulations relating to provide rewards to the employees fairly.

ii) The management of private mobile telecommunication companies in Bangladesh should provide career advancement opportunities to the employees because every employee wants to reach the self-actualization position in the organization.

iii) The authority of private mobile telecommunication companies in Bangladesh should provide opportunities to the employees so that they can participate in the decision making process of the organization.

iv) The management of the private mobile telecommunication companies in Bangladesh should be clearly defined and communicated to the employees about the performance management systems and results.

v) The HR manager of private mobile telecommunication companies in Bangladesh should arrange adequate effective training programs to all employees irrespective of sex, color, religion, race, etc.

vi) The management of private mobile companies in Bangladesh should be given promotion to the employees based on their performance not relationship/personal characteristics.

vii) The authority of private mobile telecommunication companies in Bangladesh should provide salaries/wages and other allowances to the employees fairly.

viii) The mobile telecommunication business is a service oriented business in Bangladesh. This business needs sincere, qualified, competent, and dedicated employees to provide quick and standard service to the customers. Thus, the authority of private mobile telecommunication companies in Bangladesh should provide sufficient intrinsic and extrinsic rewards to the employees so that the employees would highly motivated and they can provide best services to the customers.

ix) The authority of private mobile telecommunication companies in Bangladesh should provide rewards & incentives to the employees in time to keep their satisfaction. If the mobile telecommunication companies pay salaries and other rewards to the employees in time, they become satisfied and perform their tasks & duties with more devotion & utmost sincerity.

CONCLUSION

The mobile telecommunication business in Bangladesh is becoming very challenging and competitive day-by-day. So, the mobile telecommunication companies need efficient human resources to face the challenges successfully. If a private mobile telecommunication company in Bangladesh wants to hire efficient human resources, it needs to provide enough fair rewards and incentives to the employees. Otherwise the human resources of these mobile telecommunication companies may not be satisfied. If

the human resources of the private mobile telecommunication companies are not satisfied, they may not be interested to provide quick and standard service to the customers. As a result, the private mobile telecommunication companies are losing customers gradually.

The effective reward systems is badly needed to all private mobile telecommunication companies in Bangladesh at present. The management of private mobile telecommunication companies in Bangladesh must be rewarded employees fairly. It is a well-known fact that employees' performances are highly influenced by fair rewards & incentives.

The current paper is clearly found and examined that there is a significant relationship between reward systems and employee performance of private mobile telecommunication companies in Bangladesh. So, the management of private mobile telecommunication companies in Bangladesh must motivate their employees by providing fair rewards and incentives.

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