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Highlights

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An Evaluation of Students' Attitude towards Entrepreneurship Education in some Selected Universities in North East Nigeria

By B. M. Pulka R. Rikwentishe & B. Ibrahim
University of Maiduguri, Nigeria

Abstract- The aim of this study is to examine the cognitive, affective, and behavioural components of students' attitude and to examine the overall attitude of students towards Entrepreneurship education in Nigerian universities. The respondents were students from five selected universities in north eastern Nigeria. Purposive sampling was used in selection of the universities, while simple random sampling was employed in selection of the respondents. The instrument used was structured questionnaire based on Likert scales ranging from strongly agree to strongly disagree on four points. Four hundred questionnaires were distributed, but only three hundred and seventy five were successfully retrieved and analysed. SPSS version 16 was used in the analysis of the data. The study falls within the domain of descriptive study. The results indicated that the students cognitive component of attitude is rated at 84.31%, affective at 83.34%, while behavioural component at 78.72%. The overall attitude is at 82.12%.

Keywords: attitude, entrepreneurship, education, universities, cognitive, affective, behavior.

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An Evaluation of Students' Attitude towards Entrepreneurship Education in some Selected Universities in North East Nigeria

B. M. Pulka [α] R. Rikwentishe [σ] & B. Ibrahim [ρ]

Abstract - The aim of this study is to examine the cognitive, affective, and behavioural components of students' attitude and to examine the overall attitude of students towards Entrepreneurship education in Nigerian universities. The respondents were students from five selected universities in north eastern Nigeria. Purposive sampling was used in selection of the universities, while simple random sampling was employed in selection of the respondents. The instrument used was structured questionnaire based on Likert scales ranging from strongly agree to strongly disagree on four points. Four hundred questionnaires were distributed, but only three hundred and seventy five were successfully retrieved and analysed. SPSS version 16 was used in the analysis of the data. The study falls within the domain of descriptive study. The results indicated that the students cognitive component of attitude is rated at 84.31%, affective at 83.34%, while behavioural component at 78.72%. The overall attitude is at 82.12%.

Keywords: attitude, entrepreneurship, education, universities, cognitive, affective, behavior.

I. Introduction

Entrepreneurship has been recognised as the determinant or pivotal element of economic growth and development (Kidane and Harvey, 2009: Nafukko and Muyia, 2010 and Kavitha et al, 2013). This is because Entrepreneurship leads to the creation of small and medium scale businesses, providing employment opportunities, income generation, uplifting of standard of living, and utilisation of human, material and financial resources of a country in the right direction. Many countries have placed intensive and frantic efforts and programmes towards development of Entrepreneurship. Because of the importance and role of Entrepreneurship in the economy, the federal government of Nigeria through national universities commission introduced Entrepreneurship education course under general studies programmes which is mandatory for all undergraduate students in the country. It is believed that it will facilitate the development of favourable attitude towards Entrepreneurship and its education. Similarly, the federal government has established Entrepreneurship study centres in all the federal universities in the country in order to facilitate towards development of entrepreneurs.

According to federal government through the Ministry of Education in conjunction National Universities Commission (2011) has approved the establishment of Entrepreneurship Study Centres (ESCs) in all federal own Universities in the country. The establishment of the centres is to be funded by Educational Trust Fund (ETF). The ministry has also approved the establishment of project implementation committee to fast track the establishment and development of entrepreneurship education in the universities (NBF News, 2011). The primary role of the centre is stimulation of entrepreneurial competencies among students, staff and the community. The Entrepreneurship Study Centre is expected to: Develop and offer courses, seminars, workshops and conferences to advance and propagate entrepreneurship, Offer a 2-credit units course to semi-final/final-year students, Provide entrepreneurial clinical services in entrepreneurship to students, staff and members of the public, Serve as a National Centre for the training and development of experts in entrepreneurship, Promote research and experimenttation in entrepreneurship.

Similarly, another role assigned to the Entrepreneurship Development Centre according to Inegbenebor (2005) the Centre is expected to: Identify all innovations and inventions in the Universities for the purpose of assisting the innovators/inventors to commercialize them and establish contacts with potentials business partners, Provide inventors/ innovators technical and professional expertise to patent and further develop their inventions/innovations (University of Benin, 2002).

Therefore, Individuals/students may form and implement an Entrepreneurial action in anticipation of outcome. When the perceived outcome is poor or pessimistic, they tend to develop negative attitude. Reverse is the case when they perceived the outcome to be positive or optimistic, they tend to develop and retain

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positive attitude towards the attitude object (Entrepreneurship Education).

II. Objectives of the Study

The study has the following objectives:

i. To examine the cognitive component of students attitude towards Entrepreneurship education:
ii. To examine the affective component of students attitude towards Entrepreneurship education:
iii. To examine the behavioural component of students attitude towards Entrepreneurship education:
iv. To examine the overall attitude of students towards Entrepreneurship education.

III. Literature Review

a) *Entrepreneurship Education*

Entrepreneurship and the education of the entrepreneurs are the indispensable foundation of any country's economy. The reason for this fact is the entrepreneurs' position as the corner stone within the economic system. Entrepreneurship Education focuses on developing understanding of Entrepreneurs behaviour, skills and attributes in widely different context (Akponi, 2009). Entrepreneurship Education has been described as a scholarly field that seeks to understand how opportunities to bring into existence future goods and services are discovered, created and exploited, by whom, and with what consequences (Venkatraman, 1997). It is concerned with the creation and recognition of opportunities, as well as the pursuit of those opportunities by turning them into wealth creating businesses during a limited window of time (Sexton, 1997: Smilor, 1997). According to Postigo & Tomoborni (2002) Entrepreneurship Education develops and stimulates Entrepreneurial process, providing all tools necessary for starting up new venture.

Bink (2005) is of the opined that Entrepreneurship Education refers to the pedagogical process involved in the encouragement of entrepreneurial activities, behaviours and mind-sets. Entrepreneurship Education has come to denote all forms of knowledge delivering that seek to empower the individuals/students to create real wealth in the economic sector, thereby, advancing the cause of development of the nation as a whole (Ekpoh & Edet, 2011). Similarly, Entrepreneurship education is the process of imparting knowledge and teaching skills to potential entrepreneurs on how to venture into business that is relatively small in nature for future development or advancement (Aminu, 2009).

The Centre for Entrepreneurial Leadership Clearinghouse on Entrepreneurship Education (CELCEE, 1999) defined Entrepreneurship Education as the process of imparting individuals/students with the concepts and skills to recognized opportunities that others have overlooked, and to have the insight, self-esteem and knowledge to act where others have hesitated. Entrepreneurship Education has been view as a systematic training and instruction that transmit entrepreneurial knowledge and development of skills in students. Entrepreneurship education is meant to change students' behaviour pattern in the desired direction. Therefore, it is a continuing development of relevant Entrepreneurial skills and habits whose understanding and application enable the students to contribute meaningfully towards the growth and development of Nigerian economy. Though there is no consensus definition, but they all the definitions serve as complementary to one another.

b) *Entrepreneurial Attitude*

Different authors have defined attitude, however, the elements that constitute these definitions are similar and complementary. Attitude is the degree or extent to which an individual like or dislike something. Attitude is defined as the predisposition to respond in a general favourable or unfavourable manner with respect to the object of the attitude (Ajzen 1987). According to Allport cited in Banu (1984) an attitude is a mental neural state of readiness, organized through experience exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related. According to Hawkins et al (1983) Allport's definition raises three points: (a) Attitude is a state of readiness leading the individual to perceive things and individual around him in certain ways; that is to be more ready with certain categories and interpretations than with others. (b) Attitude is not innate, they are learned, they develop and they are organized through experience. These states of readiness are relatively enduring but they are modifiable and subject to change. (c) Aspect of Allport's definition follows from that attitude is dynamic. Attitude is not merely latent states of preparedness awaiting the presentation of an appropriate object for their activation. They have motivational qualities and can lead an individual to seek (or avoid) the objects about which they are organized.

An attitude is a tendency to act or react in a certain manner when confronted with certain stimuli. Here stimuli may be object, individual, idea or anything else that an individual can react negatively or positively to it. The reaction may take verbal, physical, mental or behavioural form (Banu, 1984). Simpson and Oliver (1990) defined attitude as emotional trends in response to affairs, persons, locations, events or ideas. According to them the phrase such as "I like Entrepreneurship Education" or "I enjoy Entrepreneurship Education course" is enumerate as attitude. An attitude is an enduring organisation of motivational, emotional, perceptual and cognitive process with respect to some aspect of the environment (Hawkins et al 1983).

Therefore, attitude may be positive or negative, optimistic or pessimistic, rational or irrational, desirable

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or undesirable. Particular attitude may therefore be a problem or solution to a problem depending on the environmental factors that influence the attitude of an individual. According Sorenson as cited in Balama (1992) explains that individual/student acquire attitude from their environment, and learners (students) along with their school books. He further explained that if a student has a positive attitude towards a course he may amaze the teacher with an ability to learn it that out strip what might have been expected of him. Reverse is the case when a student holds negative attitude towards a course, he may strongly resist learning that the teacher's effort no matter how thorough and ingenious are futile.

The research findings of Peterman and Kennedy (2003) indicated that offering entrepreneurship education course is helping students in development of favourable entrepreneurial attitude. Similarly, empirical findings of Autio et al (1997), Tounes (2006), Trenan, Renfrow and Watson (2003), and Audet (2000) indicated that taking entrepreneurship education course has positive effects on students' entrepreneurial attitude. There are many others findings that supported the positive effects of entrepreneurship education on development of entrepreneurial attitude of students, (Lens and Wong, 2003: Teixeria and Davey, 2008: Gorman at al, 1997: and Memitrova et al, 2012). Guerero, Riaph and Urbano (2008) affirm that attitude towards entrepreneurship is one of the determinant factors on decision of becoming an entrepreneurs.

Therefore, there is strong ascertaining that attitude plays very important role in determining the learning behaviours of students in schools. This called for continued effort by the researchers/teachers to make sure that students develop positive attitude and behaviour towards Entrepreneurship Education.

IV. Components of Entrepreneurial Attitude

The components of attitude comprise cognitive, affective and behavioural components.

a) Cognitive Component (Belief, thought and knowledge)

This consists of students' beliefs, thought and knowledge about an attitude object (Entrepreneurship Education). Belief may be correct or incorrect, true or not true, what is needed is only for the belief to exist. Similarly, beliefs are descriptive thoughts that an individual hold about something. According Amdam (2011) belief reflects an individual's knowledge and assessment of attitude object. He further explained that belief is the accumulated feelings and priorities that individuals have about something. Kotler (2000) maintain that the belief and values in a society has high degree of persistence, they shape and colour attitudes and behaviours of individuals/students. Belief is formed by an individual as he/she grow up into the society or associate with reference group. As the relationship of interaction continues to exist cordially, an individual will learn and formulate beliefs. Beliefs are influence mostly by social environment of an individual (family, reference group, and so on). The belief student is having towards Entrepreneurship Education course will help him/her to develop favourable component of this attitude as time goes on.

b) Affective Component (feeling, emotion)

It is the student's emotional reaction and feelings to an attitude object (Entrepreneurship Education). This has concurred with the research finding of Bird (1988) that perceived desirability of Entrepreneurship and its Education may be formed through intuitive thinking. That means perceived desirability of Entrepreneurship is formed through affective attitudinal judgement (Mitchell, et al 2002). The expression I like Entrepreneurship Education course or I hate Entrepreneurship Education course, is the expression of the emotional evaluation of the Entrepreneurship Education to the student. In the words of Hawkins et al (1983) due to individuals' unique motivational, personality, past experience, reference group, and physical conditions may evaluate the same feelings and emotions differently. That means some individuals/students may have a positive feelings towards the entrepreneurship education, while others could respond with a negative reaction.

c) Behavioural Component (behaviour, overt response and willingness)

It is the way in which individuals/students responds or react to a specific set of attitudinal object. According to Mani (2008) this component reflects the willingness of students' behavioural intentions in form of goals, objectives and aspiration and expected responses to the attitude object (Entrepreneurship Education). For example, a student who intend to become an Entrepreneur before or after graduation, may form and plan behaviour towards attending and having keen interest in Entrepreneurship and its Education.

V. Methodology

Descriptive survey research method was used for this study utilizing frequency and simple percentage. The sample for this study is undergraduate students drawn from five Universities in North East geopolitical zone. This is because all undergraduate students are offering Entrepreneurship Education course from the Division of General Studies of the respective universities. Purposive sampling was employed to select five Universities. The reasons for using this method is to compose a sample that has federal (UNIMAID and ATBU) and state (ADSU and GSU) Universities. Secondly, is to involve conventional (UNIMAID, ADSU and GSU) and special University (ATBU). Thirdly, to

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involve private University (AUN), and fourthly, is because the Universities are spread across the study area with exception of Yobe and Taraba states that are having infant Universities.

Simple Random Sampling was used to select four faculties and respondents. The sample size for this study is four hundred. The respondents were collected proportionally from the five selected Universities. The instrument for data collection was questionnaire adopted from the work of Mc Stay (2008) with modifications. The questionnaire was divided into four main sections. The first section is about demographic characteristics of the respondents. The second section measured cognitive component of attitude. Third section measured affective component of attitude, while the fourth section measured the behavioural component of attitude. Structured questionnaire and Likert scale was used. The responses ranges from strongly agree to strongly disagree (4 point scale). Four hundred questionnaires were administered and 375 were successfully retrieved and analysed. The Statistical Package for Social Sciences (SPSS version 16) was used in the analysis of the collected data.

VI. Analysis and Results

Table 1 : Cognitive Component of Students towards Entrepreneurship Education

	Agreed		Disagreed	
Statement	Freq.	%	Freq.	%
Identify new business opportunities	343	91.50	32	8.50
Create products that fulfil customers' needs	315	84.00	60	16.00
Successfully develop a new business	334	89.10	41	10.90
Feasibility study & analysis of starting new busines	316	84.30	59	15.70
Identify new sources of business finance	308	82.10	67	17.80
Development of business relationships	310	82.70	65	17.30
Tolerate unexpected changes, setbacks and Risks	287	76.50	88	23.50
Mean		84.31		15.69

Source: Field Survey, 2013

The results in table 1 show that the students averagely are having favourable cognitive towards entrepreneurship education with mean of 84.31%, while 15.69% indicated unfavourable cognitive. 91.50% of the students believe that they can identify new business opportunities. 84.00% of the students believe that they can create products that fulfil customers' needs. 89.10%gave affirmative response to successfully develop new business. The responses in relation to carrying out of feasibility study and analysis related to starting a new business, 84.30% of the students responded. 82.10% of the students responded positively in relation to their ability to identify new sources of financing businesses. Developing good relation with people to assist in finding business opportunity received 82.70% affirmative response. The students' responses show with 76.50% the strength to tolerate unexpected changes, setbacks and risks in their businesses.

Table 2 : Affective Component of students Attitude towards Entrepreneurship Education

	Agreed		Disagreed	
Statement	Freq.	%	Freq.	%
I desperately want to work for myself	309	82.40	66	17.60
The idea owning my own business is pleasing	313	83.50	62	16.50
Considered self-employment highly desirable	323	86.10	52	13.90
Personal satisfaction with self-employment	30	81.30	70	18.70
Mean		83.34		16.66

Source: Field Survey, 2013

Affective component of attitude refers to the students feeling and emotional reaction towards entrepreneurship education. Therefore, the results in table 2 shows that students a having strong feeling towards entrepreneurship education with average of 83.34%. 82.40% indicated that they want become entrepreneurs. Having pleasure of been entrepreneurs indicated is rated at 83.50%. The students also showed high desirability for entrepreneurs with 86.10%, while personal Satisfaction was rated at 81.30%.

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Table 3 : Behavioural Component of students Attitude towards Entrepreneurship Education

	Agreed		Disagreed	
Statement	Freq.	%	Freq.	%
I enjoy Entrepreneurship education lectures	303	80.80	72	19.20
My interest in a career in this course has increased	293	78.10	82	21.90
The same importance with my major courses	262	69.90	113	30.10
This course prepares me to make good career choices	305	81.30	70	18.70
I am happy to learn Entrepreneurial skills	313	83.50	62	16.50
Mean		78.72		21.28

Source: Field Survey, 2013

Behavioural Component measured the willingness and ability of the students' behavioural intention in relation to entrepreneurship education, which will help the students in having keen interest towards entrepreneurship education lectures, thereby, influencing their intention to be entrepreneurs. The results in 3 indicated that the students a having positive behavioural tendencies towards entrepreneurship education averagely with 78.72%. The students showed that they enjoy entrepreneurship education lecture with 80.80%, interest to be an entrepreneur was rated with 78.10%. The respondents agreed that entrepreneurship education course is of the same importance with their major courses with 69.90%.81.30% agreed that entrepreneurship education have prepared them to make a good career choice as entrepreneurs, while they agreed that they are happy to learn entrepreneurial skills and knowledge with 83.50%.

Table 4 : Overall Attitude of students Attitude towards Entrepreneurship Education

Statement	Agreed (%)	Disagreed (%)
Cognitive Component	84.31	15.69
Affective Component	83.34	16.66
Behavioural Component	78.72	21.28
Mean	82.12	17.88

Source: Field Survey, 2013

The results in table 4 show that generally the students are holding very strong attitude towards entrepreneurship education. The results indicated that the students are having very strong attitude that is rated at 82.12%. This indicates that the student will like to become entrepreneurs.

VII. Discussion of Findings

The results indicated that the overall attitude of students is 82.12%. That means they hold strong positive attitude towards entrepreneurship education. Students with strong positive attitude tend to interpret that going into entrepreneurial activities is feasible and hence desirable. This has agreed with the findings of Mitchell et al (2002), Bird (1988), Shapero and Sokol (1982). Furthermore, the findings of Ajzen (1991) agreed with this result, where if students perceive that entrepreneurship and its education will help them in achieving their goals, they tend to develop positive attitude towards it. These results also agreed with the findings of Ifedili and Ofogbu (2011), where students indicated 81% positive attitude toward entrepreneurship education. It also agreed with the finding of Veciana (2000), which shows the level of students' attitude at 92.2%. Same with the findings of Cheung and Chan (2011) indicated positive attitude of 90%. The research findings of Keal (2011) responded with 75.4% positive attitude. A more favourable attitude would increase the intention of students to become entrepreneurs. Similarly these findings also concurred with the findings of Peterman and Kennedy (2003), Dimitriva et al (2012), Tounes (2006), Trenan et al (2003), Len and Wong (2003) and Texeiria et al (2008), Where the empirical research findings revealed positive relationships between offering entrepreneurship education course and students attitude.

VIII. Conclusion

The study evaluated students' attitude towards entrepreneurship education in Nigeria universities. The results showed that the students are holding strong favourable attitude towards entrepreneurship education.

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This means exposure entrepreneurship education is one of the factors that influence the development of favourable attitude entrepreneurship and its education.

Therefore, Nigerian universities should strive to inculcate sound and qualitative entrepreneurship education to their students. This would lead to development of favourable attitude, and when students are having favourable attitude towards entrepreneurship education, they tend to develop and sustain intention to start businesses. Finally, the intention may lead to actual venturing into business activities.

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E-Business; The New Strategies Ande-Business Ethics, that Leads Organizations to Success

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Abstract- E-business is a new revolution where initiative is needed to fully utilize the capabilities of Internet technology in a specific business setting. Such an initiative has built the fundamental strengths of the organization that creates a huge competitive advantage among the competitors in the market. In this paper, a method is presented for the development of an e-business which is based on the research of value creation, reward or creating promotions for customers to build a strong trust between company and customers, and also knowledge management. The proposed method is designed to help clarify a strategic e-business vision and to solicit management commitment to change and take action on new business opportunities. In addition, it also impacts the environment positively through the societal world demand of moving rapidly in the direction of valuing low-pollution and energy-efficient products.

Keywords: E-business, strategies, positive environment impact.

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EBUSINESSTHENEWSTRATEGIESANDEBUSINESSETHICSTHATLEADSORGANIZATIONSTOSUCCESS

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E-Business; The New Strategies Ande-Business Ethics, that Leads Organizations to Success

Chia Thian Sheung

Abstract - E-business is a new revolution where initiative is needed to fully utilize the capabilities of Internet technology in a specific business setting. Such an initiative has built the fundamental strengths of the organization that creates a huge competitive advantage among the competitors in the market. In this paper, a method is presented for the development of an e-business which is based on the research of value creation, reward or creating promotions for customers to build a strong trust between company and customers, and also knowledge management. The proposed method is designed to help clarify a strategic e-business vision and to solicit management commitment to change and take action on new business opportunities. In addition, it also impacts the environment positively through the societal world demand of moving rapidly in the direction of valuing low-pollution and energy-efficient products.

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I. Introduction

For the sake of finding it increasingly difficult to create a differential advantage among other competitors, retailers spend millions of dollars each year on designing, building, and refurbishing stores [Baker, Levy & Grewal, 1992]. According to Tiwari and Singh (2011), instead of large investments on designing, building, and so on, retailers also utilize the capabilities of internet technology and focus on developing efficient methods and practices which increases productivity in minimum efforts and cost. Companies typically choose to focus on an improvement strategy that is less risky and extends or renewstheir existing strategy [Pateli & Gaiglis, 2005]. The new method followed by the innovation of the technology trends that company uses is E-business. Pateli and Giaglis (2003) state that the accelerating growth of Information and Communication Technology (ICT) has raised the interest for transforming traditional business models or developing new ones, that better exploit the opportunities, enabled by technological innovation. E-business creates new opportunities for companies that are willing to adapt - transforming the traditional market channels to a virtual market. Kalakota and Robinson (2000) claim that old business models are morphing to a new direction; information is replacing inventory; and digital products are replacing physical goods. E-business has radically changed the way the majority of people shop, or the way most businesses are conducted on a day-to-day basis [Coltman; Devinney; Latukefu & Midgley, 2001]. Strategies such as value creation, trust & e-loyalty and knowledge management in E-business are part of the development of a company to increase their productivity and profitability. In addition, the positive environment impacts also presented in E-business aims to develop a caring environment, discarding unethical use of sensitive material, unethical behaviors, superficial codes of conduct, and also ethic of care [Lee, 2008].

II. Value Creation

Organization strategy becomes a conscious plan to align the firm with opportunities and threats posed by its environment [Ansoff, 1965 as cited in Currie, 2004].With the dramatic developments of technology, especially in the area of information technology (IT), companies typically improving their business through virtual markets instead of traditional businesses. Virtual markets refer to settings in which business transactions are conducted via open networks based on the fixed and wireless Internet infrastructure. On electronic markets, firms can create value for customers in a manner that is different from that, which has been achieved in a conventional business [Han and Han, 2001 as cited in Anckar and D'incau, 2002]. E-business has the potential of generating tremendous new wealth, mostly through entrepreneurial start-ups and corporate ventures. According to Amit and Zott (2001), value creation is potentially embedded in virtual markets, and explores the sources of value creation in the received entrepreneurship and strategic management literatures. There are four primary and interrelated value drivers of e-businesses: efficiency, complementarities, lock-in, and novelty [Christensen and Methlie, 2003]. The terms 'source of value creation' and 'value driver' are referred to any factors that enhance the total value created by an e-business, where the value is the sum of all values that can be appropriated by the participants in e-business transactions. The four primary and interrelated value drivers are the key aspects of the e-business model that play an important role of influencing e-business value directly and significantly. According to figure 1, a framework of value drivers are adopted in e-business, that are developed by Amit and Zott (2001) as cited in Christensen and Methlie (2003).

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Efficiency is the first category of value drivers. Low transaction costs and improved market efficiencies are the new transaction mechanisms in the market. The delivery times, either resources from suppliers and partners upstream, or finished goods to customers downstream affects the efficiency gains. The other efficiency gains is the disintegration of the value chain, for example, with more business activities outsourced, the organization is able to take advantage of the economics of scale in production, or eliminating intermediaries in the delivery channels.

Customers have more convenience and lower transaction costs, due to the horizontal integration of products, services and information based on complementary components. According to Christensen and Methlie (2003), "complementarity values may occur in channel options in which customers for instance are given the possibility of browsing through product catalogs online, and buy offline" (p.31). Besides that, horizontal integration exists on the demand side, by creating virtual communities of customers, which may influence the demand externalities.

Christensen and Methlie (2003) also added that opportunities for new types of interactions and relationships have been created by the communication in electronic networks. Customer retention plays an important role on value drivers. Both sellers and buyers enabled to play new roles, to collect, and store information of each other. Customers will shop more for the best buy goods, due to the lower search costs on the Internet. Although long-term customer relationships are difficult to build on the Internet, but it will still offer other opportunities for relationship building. There are few example of relationship building, which includes "personalized web sites, customized products based on stored profiles, proactive customer support through all phases of the product life cycle, and also through branding and trust building" [Christensen and Methlie, 2003, p.31].

According to Hitt; Ireland; Camp and Sexton (2001), innovation is the most important component of a firm's strategy; the successful innovation allows a company to provide directions for the evolution of an industry. These innovations include the development of new products and services, promotion strategies, new production processes as well as new transaction exchange mechanisms. Innovation is the category of value drivers which corresponds to the novelty concept of Amit and Zott (2011) as cited by Christensen and Methlie (2003). Figure 2 has shown the e-business value hierarchy, which based on the unique characteristics of the internet and how these characteristics enable value creation via e-business and, at last impact the company performance.

III. E-loyalty and Build Strong Trust

Loyalty is an economic necessity; customers may sticks around on the specific products and make lots of repeated purchases over the years. According to Reichheld and Schefter (2000), they also know that loyalty is a competitive necessity; some companies will figure a way to harness the potential of the Web and create exceptional value for customers, in order to gain profitable relationships at the expense of slow-footed rivals. A best-designed e-business model will not be successful without the strategy of loyalty. Developing trust between company and customers is the primary step of gain the loyalty of customers. "Trust makes an implicit contribution to the e-business' success" [Srinivasan, 2004, p.67]. People usually trust a business based on a personal past experience as well as by third party recommendations; trust is difficult to measure and needs to be developed over time. Srinivasan (2004) added that a few factors are generated which significantly contributes for enhancing transaction trust, such as "easy access to description of products and services, ease of placing orders, order confirmation, order tracking and also post-sales service" (p.68).

A tree-structured design of the organization's goods and services are aim to easy navigation for the customer. There are few tools available for Web design which enables easy to navigate and look attractive. Organization can easily bring to the Web real time data such as quantity on hand with the function of database tools. Organizations such as Amazon.com contributed significantly to the growth of software that makes placing orders a breeze. There are few third party suppliers who provide the Web cart facility recently. The Web cart virtually parallels the practice in the BAM world of product ordering.

In addition, there is another integral part of replicating the BAM world practice in e-business which is order confirmation. It enables the customer to see what they have been ordered. Technology nowadays can easily facilitate the order confirmation and the most common way is handled today is via email. Sinceorder-tracking information usually comes later than the shipping takes place via an independent carrier. This is not a blemish as long as the order tracking information is linked to the order history. The best thing about the order tracking aspect is that the shipper handles this aspect completely. Organization should partner with the shipper in partaking information to achieve success in building trust between customers.

Furthermore, there is another key element in earning customer devotion and trust call post-sales services. In e-business, the customer most likely to be segregated by distance from the trader and at the same time has access to the trader's Website around the clock. This is the time asymmetry forces in e-business to rely on its information systems to facilitate post-sales

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service such as return of merchandise. Major factor in losing trust occurred if there is any fickle in this aspect.

Besides the four factors for enhancing transactions trust, Bryant and Colledge (2002) also claim that trust generated between "business and customer, on-line accounts might be created, incentives offered, or valued clients might be given the opportunity to share information" (p.37). For example, Tesco Direct enables customers to save their shopping lists and from this enable shoppers to analyze their pattern of past purchases. Other approaches include registration as a frequent user that may provide further incentives such as special offers or access to information. "What is being fostered here is customer loyalty based on trust mechanisms" [Varian, 1999 as cited in Bryant and Colledge, 2002, p.38]. Amazon enables customers to place book reviews on their site and facilitate discussion forums on related topics. Other than that, "firms have unilaterally articulated their policies regarding protection of consumer privacy and security of monetary transactions through their Websites" [Schoder and Yin, 2000, p.77]. Secure socket layer (SSL) and secure electronic transaction (SET) are the two tools that are available to enhance the security on the Internet. According to Papazoglou (2001), "e-business communications that guarded by agents will provide the security services required to conductan e-business" (p.77). Agents can collect commercial date from trusted and controlled sources. According to Rust and Kannan (2003), the security and privacy that a company effectively manages builds strong trust for its customers and contributes to their lifetime value.

IV. Knowledge Management

According to Gold; Malhotra and Segars (2001), the company must "leverage their existing knowledge and create new knowledge that (poses) favorably positions (for) them in their chosen market" to achieve higher efficiency (p.186). Although technologies are advancing and companies have investment large quantity in such technologies, some companies are still looking for the most effective ways to capture, store, and transfer knowledge and also how to ensure that knowledge workers share their knowledge. Innovation and creativity are needed for the renewal of archived knowledge or its creation. These innovative applications of knowledge in new products and services build market share. Malhotra (2000) illustrated that "the context of enabling E-business strategy, the proposed conceptualization of knowledge management" is depicted in figure 3 (p.11). To achieve high levels of efficiency and effective organization, knowledge management indicates a highly visible presence in the efforts of firms to create and sustain winning strategies [Fahey, Srivastava & Sharon, 2001]. Knowledge management reflects a company's process that seek a collaborative combination of data and information processing capacity of information technologies, and the creation and innovation capacity of human beings. Due to the rapid advancing of technologies, there are multiple choices in terms of technologies like customer relationship management (CRM) and supply chain management (SCM) that could precipitate specific ebusiness strategy. However, a "company (is) still able to mesh the evolving business model with technological and structural changes on an ongoing basis will put a premium on creativity and innovation" [Malhotra, 2000, p.12]. The strategic distinction between knowledge and information is relevant to the key emphasis on performance and outcomes of a company.

V. Positive Environment Impact

With the demand of valuing low-pollution and energy-efficient products, companies are using innovation to command price premiums for "green" products and open up new market segments [Porter and Class, 1995]. E-ethical leadership was defined for the virtual project teams; run their e-business with ethics for the sake of developing a caring environment to decrease the pollution in the society. Lee (2008) stated that virtual teams reflected the ever-increasing nontraditional work environments of the 21st century. E-business is the correlative activity among companies and suppliers which is defined as the conceptual model of environmental implications. Its consists of company layer and effect layer, where the company layer has Intranet and Extranet view while effect layer contains three effects, which includes primary effects, secondary effects, and tertiary effects. There are few various infrastructures that cause the primary effect, communication infrastructures, computer infrastructures and Internet infrastructures. "Secondary effects come from diversified applications as shown in warehousing inventories, transportation, packaging, and so on" [Tiwari and Singh, 2011, p.203]. Besides that, the adjustment of the new habits, consumption pattern, and so on refer to the tertiary effects.

On the primary effects, Internet helps to reduce the building energy intensity. "It also encourages sharing of infrastructure like equipment, networks etc. companies providing online movie centers, online advisory agencies, online billing systems do not need physical locations" [Tiwari and Singh, 2011, p.203]. Thus Internet can help to prevent the release of greenhouse gases in the world.

Peng, Li2 and Zhang (2005) as cited in Tiwari and Singh (2011) illustrated that secondary effects is helpful for many organizations to improve their communication whether internal or external:

> Internal departments of the traditional companies, when apply advanced information technologies then it becomes highly efficient with tight

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collaboration, well communication and fast response. Companies grow very fast by moving many of its operations to the Internet. Many organizations are now using the Internet to improve communication between companies; and its departments. It allows the company to better utilize its existing manufacturing capacity for large investments without making any kind of additional investments. In e-business, companies may experience larger numbers of orders with smaller size than experienced in the conventional purchasing system, and this means a new perspective on the packaging issue: durable and reusable packaging sources are needed. (p.203)

On the tertiary effect, the innovation from traditional business to e-business has influenced how people search, read, write, and access information or material online in intra-company systems or inter-company systems. It changes some individuals' habits and avoids the use of paper and thus, reduces paper consumption. Less paper resources are used as more people use digital communication to send bills, pay bills, and also to place orders. A paperless office or paper less society has been generated in e-business. Hence, e-business has concluded that ability to support a green environment through the reduced use of paper.

VI. Discussion

E-business is the new revolution for a company not only for the sake of creating a competitive advantage among other competitors, but also to increase their total sale and productivity. The rapid growth of technology has influenced the way firms conduct their business online, no matter whether it is selling products or services. Creating value for each customer and also building stronger trust between customers and companies, such as improving the security systems and privacy, rewarding customers based on the amount they purchase or their consistent purchase of the products every month, giving discount or promotion to customers so that customers will purchase large amounts of their products. In addition, the leverage company's existing knowledge and creation of new knowledge favorably positions them in their chosen market to achieve higher efficiency is also very important to develop a successful company. E-business is a good way to deal gain business from customers who spend much time on the Internet. E-business also impacts the environment positively as compared to old traditional businesses that spend large amounts of investments to generate their business transactions like building and designing. This paperless solution; E-business helps to conquer the problems of deforestation and is the environmental cure for the damages caused by traditional businesses through the rapid clearing of land to build cities. With a growing number of literate people in the world, E-business is the answer especially when more and more people need to send and pay bills, as well as place orders.

VII. Conclusion

In the nutshell, e-business brings a lot of benefit to a company, such as increasing the demand of the product and productivity that will automatically increase the profitability of their business; well development in the e-business may lead a company to success. Creating value, building strong trust and rewarding customers would ensure customer's loyalty to the specific product. Creating new knowledge to achieve high level of efficiency and effective organization, knowledge management indicates a highly visible presence in the efforts of firms to create and sustain winning strategies. Knowledge management reflects on a company's processes that seek scollaborative combination of data and information processing capacity of information technologies, and the creation and innovation capacity of human being. Lastly, e-business also impacts the environment by helping to decrease pollution, excessive building developments and increasing a paperless society. This may create a large awareness of caring our environment to people who ever want to spent large amount on investment such as building more shops or factories.

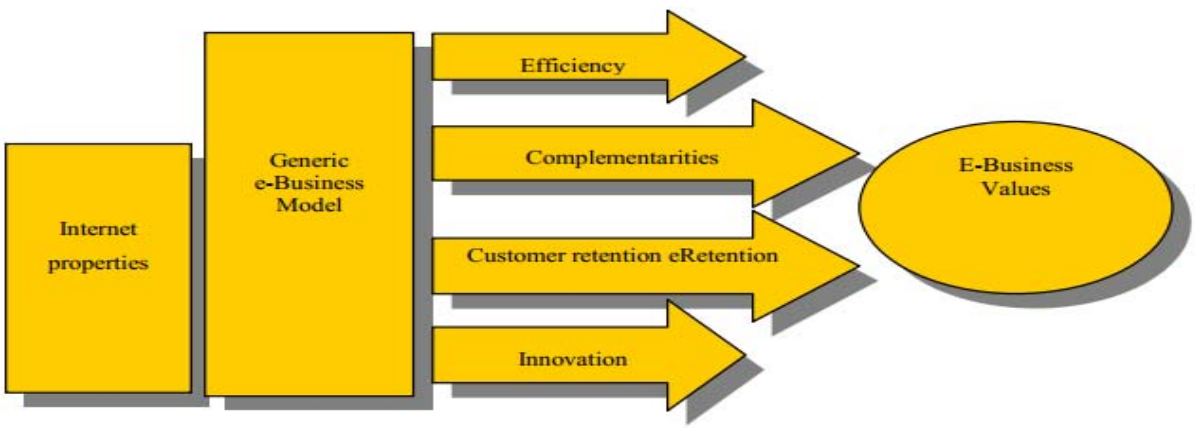

Figure 1 : Research Framework [Amit & Zott, 2001]

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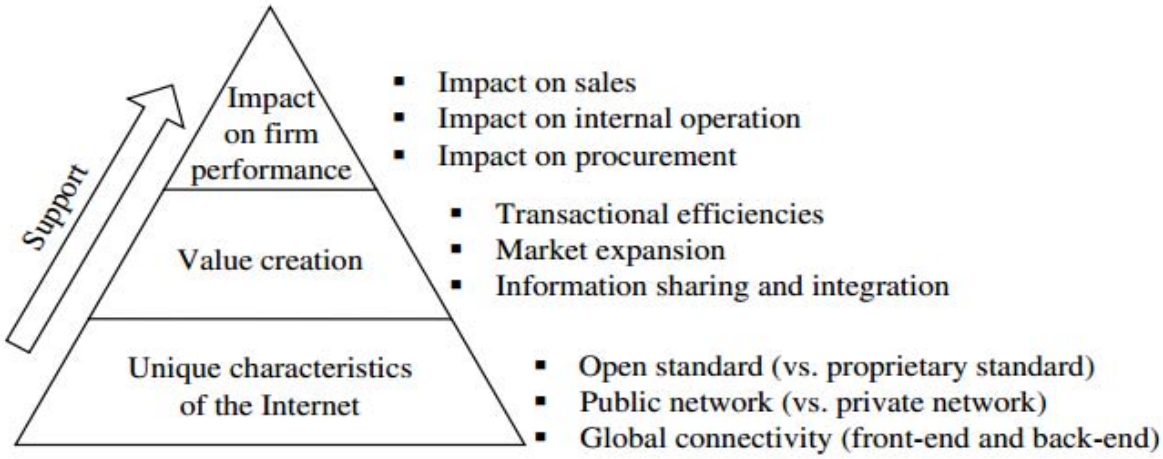

Figure 2 : E-Business Value Hierarchy: From Internet Characteristics to Value Creation [Zhu & Kraemer, 2005]

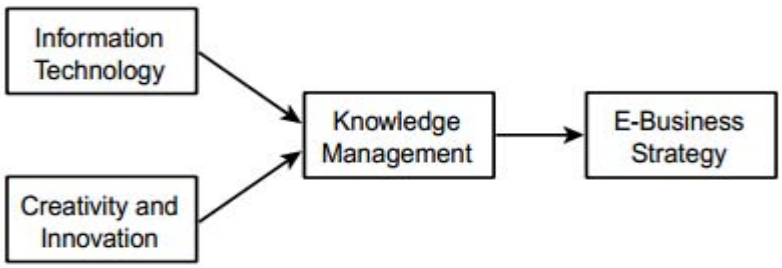

Figure 3 : Knowledge Management and E-Business Strategy [Malhotra, 2000]

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Impact of Methods of Selecting Incentive Schemes on Incentive Performance in Construction Projects in Lagos State Nigeria

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Abstract- This study investigated the impact that methods of selecting incentive schemes had on the characteristics manifested by the schemes while being used by construction firms in Nigeria. One hundred and four project managers of forty randomly selected construction firms participated in a questionnaire survey to determine the characteristics exhibited by incentive schemes based on the methods employed for their selection. Findings revealed that for the study-based selection method and the selection based on performance measurement, the use of incentive schemes did not cause reduction in the quality of work, unhealthy competition among workers nor fight among themselves. While selection based on tradition and discretion. caused the following; reduced quality of work, fighting among workers and generated unhealthy competition among workers. The study therefore recommended the use of the study-based selection and the selection based on performance measurement for incentive schemes used in the construction industry.

Keywords: methods of selecting incentive schemes, impact of methods of selecting incentive schemes, construction projects.

GJMBR-A Classification: JEL Code: M10, M19

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Impact of Methods of Selecting Incentive Schemes on Incentive Performance in Construction Projects in Lagos State Nigeria

Akinlolu Tobi Akinyemi [α], Omotayo Olugbenga Aina [σ] & Jonathan Ademola Ayangade [ρ]

Abstract - This study investigated the impact that methods of selecting incentive schemes had on the characteristics manifested by the schemes while being used by construction firms in Nigeria. One hundred and four project managers of forty randomly selected construction firms participated in a questionnaire survey to determine the characteristics exhibited by incentive schemes based on the methods employed for their selection. Findings revealed that for the study-based selection method and the selection based on performance measurement, the use of incentive schemes did not cause reduction in the quality of work, unhealthy competition among workers nor fight among themselves. While selection based on tradition and discretion. caused the following; reduced quality of work, fighting among workers and generated unhealthy competition among workers. The study therefore recommended the use of the study-based selection and the selection based on performance measurement for incentive schemes used in the construction industry.

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I. Introduction

The construction industry plays a vital role in the economy of Nigeria and its social development. It provides social infrastructure and backbone for economic activities; this is because of the construction industry's capacity to provide employment on a large scale (Sanusi, 2008). It is expected that the vital role the construction industry plays should ensure job stability, labour retention, enhanced worker output, but this is hardly the case as a result of inefficiemcies in the industrys' operations.

Azasu (2003), submitted that there is a need to optimize the use of human resources within the construction industry. This optimization can be partly achieved by the use of incentive schemes, because incentives helps in enhancing worker performance. Incentives therefore, afford organizations a genuine opportunity to create an environment in which employees work together to achieve good results; and it also enable all parties to make reasonable returns and bear appropriate risks (Tang, *et al.*, 2007).

Incentives generally refer to rewards used to induce workers to perform at a given extra level beyond a required level of achievement (Makenzie, *et al.*, 1998). required level of achievement (Makenzie, *et al.*, 1998). Incentives represent a benefit for an exceptional action which may be a stimulus for greater action; they are usually given to workers to motivate them for better performance.

Studies revealed that a number of incentives are available to suit many workers. Clark and Wilson (1961), classified incentives as material (such as wages, fringe benefits, e.t.c), solidary (which are intangible rewards from the act of association) and purposive incentives related to the goals of the organization. However, in the construction industry, incentives offered to construction workers are the financial incentives given to manual workers, non-financial incentives or semi-financial incentives given to managerial or clerical workers (Harris and Mc Caffer, 2005).

Incentive schemes are programmes developed purposely to encourage a specific course of action or stimulate workers to behave in a particular manner. According to Rao (2011), incentive schemes envisage a basic rate usually on time basis, applicable to all workers and incentive rates payable to the more efficient among workers as extra compensation for their deserved performance in terms of cost, time and quality. Specific types of incentive schemes used in the construction industry include the profit sharing, day work, piecework, standard time or hour system, hour saved system, e.t.c (Harris and McCaffer, 2005).

Recent studies have shown that incentive schemes have a huge impact on the workers generally. The study conducted by (Burgess, et al., 2004), revealed that incentives had a substantial positive effect when applied in small teams, and a negative response in large teams in the public sector. Katz (2000), also pointed out the importance of the team size in selecting a group-based incentive scheme. He explained that the smaller the group, the greater the impact of the incentives on the motivation of workers; he further explained that basing rewards on individual performance is generally associated with increased pressure on individuals to perform and to accept responsibility for their own actions. Aina (2011), concluded that non-financial incentives performed better than the financial incentives on construction workers; Suri (1970), showed that wage incentive succeeded in

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raising the productivity while increasing the workers' earnings; and Fagbenle, *et al*., (2004), concluded that non-financial incentives significantly improved bricklayers' productive time.

However, the impact of incentive schemes is greatly affected by their methods of selection. Separate studies conducted by Daniel and Gary (2006), Gregori (2006), and McGinnis and Keng (2012) revealed that most organizations derive the use of incentive schemes through selection by tradition; study-based selection; selection by discretion; selection based on performance measurement, selection based on large group measure; selection by subjective performance measure; and selection by broad financial measure.

When organizations commence the use of incentive schemes, they do this with the purpose of achieving its effectiveness. However, the effectiveness of incentive schemes is manifested in the characteristics resulting from the selection methods employed for the schemes.

Rao (2011), opined that an effectively selected incentive scheme should possess the following attributes: it must be simple to understand; it must guarantee minimum wages irrespective of the performance of the workers; it must be simple and easy to operate; the plan should not be a costly affair; there should be very little gap between performance and pay; it should take the workers' union into consideration; and all workers must get an equal opportunity to earn the incentive pay.

The Incentive Research Foundation's paper (2011), *Motivating Today's Workforce*, further explained that poorly selected incentive schemes can produce poor results, lack of motivational appeal or results to unintended consequences. Moreover, for incentive schemes to be effective in its selection, it must be fully integrated into the organization's culture, clientele and processes and products; it must be fair and transparent and it should be simple and flexible (Holtman, 2002). Bates (1999), had earlier explained that one of the most important ingredients in selecting incentive schemes is setting clear and attainable goals for employees. These goals must be simple, quantifiable, and monitored by strong controls.

The benefits derivable from a well selected incentive scheme are several. For example, Bhattacharya (2011), explained that an effectively selected incentive scheme should increase the productivity of workers, enhance the quality of work and the working life of workers, create a climate for healthy competition among workers and reduce the cost of production per unit and reduce idle time.

Despite all these benefits, construction firms usually assume that the incentive scheme that works for one firm will work for every other firm (Allison and Jennifer, 2010). Furthermore, construction firms often attempt to select incentive schemes without considering in detail how the scheme will best suit their targeted workers. However, since incentive schemes cost money, care needs to be taken in ensuring that incentive schemes are well selected in order to avoid potential drawbacks.

Prominent among the drawbacks that could result from a poorly selected incentive scheme are the generation of potential rifts among workers, especially if some of the workers feel they are being unfairly treated; labour union opposition and low productivity (Bhattacharya, 2011).

Three major thoughts can be summed up from the foregoing, these include: (a) there is a need to effectively select incentive schemes (b) there are advantages derivable from such selection in (a) and (c) there are disadvantages emanating from neglect of the methods of selection. In the construction industry in Lagos state, research have not addressed these areas, they thus constitute the questions to be addressed by this research.

II. Methods of Selecting Incentive Schemes

The need to achieve maximum efficiency in the use of labour for the sole purpose of boosting productivity has brought about the need for incentives. Incentive is a tool for stimulating human effort; people are encouraged to give out their best by inducing them to greater and more productive effort (Duleep, 2004). Incentive schemes are programmes developed purposely to encourage a specific course of action or stimulate workers to behave in a particular manner.

Baumgarten (2013), submitted that a successful incentive scheme focuses on achieving organizational goals by driving the right behavior in employees. Since incentive schemes are a link between workers and considerable changes in their productivity, care needs to be taken in their selection. A key benefit derivable from appropriate selection of incentive schemes is that workers meet their physical and financial goals while organizations become more valuable and marketable.

A study conducted by Heathfield (2013), revealed that while some incentives can be dealt with quickly at an operational level, some will require an important consideration of the methods for selecting the schemes for their use; and a prominent reason for the failure of incentive schemes is that organizations do not take into account the methods of selecting these schemes. Gregorio (2006), reported that the first issue with incentive schemes commonly used in the United State's construction industry is that they are predominantly discretionary. He claimed that seventy five percent of respondents in his studies indicated that their incentives were determined by senior management's discretion. He further claimed that senior management of organizations decides what incentive

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will be of any tangible benefit to organizational performance, divisional contribution or individual achievements based on self judgement.

Burgress and Metcalfe (1999), argued that selection of incentive schemes by subjective performance has a problem of being non-verifiable since selection is based on subjective evaluation which is at risk of falsification by the superior officers. Furthermore, this is likely to be particularly a problem in cases where extra pay associated with a good report comes directly from the assessor's budget.

The importance of considering the selection of incentive schemes is inherent in the advantages and disadvantages manifested by incentives upon use. According to Mc Querrey (2012), incentive schemes could result to increase in the volume of output; reduction of cost of production per unit; reduction of labour turnover and idle time. Aaronson (2012), argued that while incentive schemes may have some benefits, it could deteriorate the quality of production output; affect the introduction of improved methods; and increase the number of clerical work due to calculations involved in computing incentive earnings. Most of these draw backs in the use of incentive schemes could be avoided when incentive schemes are selected using appropriate methods.

Studies conducted by Daniel and Gary (2006), Gregori (2006) and Mc Ginnis and Keng (2012) have identified a number of methods employed by organizations in selecting incentive schemes. They include: selection by tradition; study-based selection; selection by discretion; selection based on performance measurement, selection based on large group measure; selection by subjective performance measure; and selection by broad financial measure.

Selection of incentive schemes by performance measure is based upon supervisors' perception of employee's performance rather than objective results; selection of incentive schemes by tradition involves selection based on the assumption that incentive schemes once adopted by an organization will most likely continue to work for the organization; selection of incentive schemes based on performance measurement makes use of objective data from employees performance and bases its selection on a well defined and understood formulae; selection based on large group measure involves selection based on large group results from employees. Incentive schemes selected through this method include the profit sharing and gain sharing schemes (Gregori, 2006). Furthermore, selection based on broad financial measure entails selecting incentive schemes based on broad financial results such as return on equity, return on assets, e.t.c. Daniel and Gary (2006), argued that employees should not be evaluated or paid for results he or she has little or no impact upon. Lastly, selection by discretion involves selection based on management's judgement where selection measure, criteria, and pay potential are unpredictable and change frequently.

The choice of methods adopted by organizations is greatly influenced by a number of factors. Hottman (2002), listed the factors influencing the choice of methods for selecting of incentive schemes as: composition of workforce, culture, external environment, system of governance and strategy, types, incentive scheme's objective, cost and benefit analysis, timing, availability of standardized work measurement techniques, adequacy of work, availability of equitable wage structure, availability of improved and simplified work methods, presence of new workers, fluctuations in production, nature of tasks, financial capacity of the company, incentives scheme's term, level of understanding of incentive schemes by workers and the need for completion of tasks.

III. Methods of Data Collection and Analyses

This study utilized primary data generated through questionnaire survey. The questionnaires were administered on one hundred and four (104) project managers of forty (40) construction firms selected randomly from the sixty six construction firms in Lagos State that were registered with the Federation of Construction Industry (FOCI). The questionnaire was designed to collect information on the effect of selection on the performance of incentive schemes. The questionnaire comprised two sections. The first section was designed to collect information on the methods they employ in selecting incentive schemes. The project managers were asked to rank the methods on a likert scale of always employed, often employed, sometimes employed, rarely employed and never employed. The ratings were assigned a value of 4,3,2,1,0 respectively.

The second section of the questionnaire was designed to collect information on the characteristics manifested by incentive schemes upon selection. The project managers were asked to rank these characteristics on a likert scale of strongly agree, agree, undecided, disagree and strongly disagree. The ratings were assigned a value of 4,3,2,1,0 respectively.

The data on the methods of selecting incentive schemes and the characteristics of incentive schemes upon selection were analyzed with the use of mean and standard deviation. In order to determine the characteristics manifested by incentive schemes upon selection by each of the methods of selection, the Spearman's Rank Order Correlation was employed. The Spearman's Rank Order Correlation was employed for this analysis because data were obtained using the ordinal scale. The Spearman's Rank Order Correlation Coefficient is denoted by ρ (rho), and it is expressed mathematically as:

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$$\rho = \frac{16 \Sigma d^2}{n (n^2 1)}$$

Where:

ρ = rho rank correlation
d = distance between corresponding ranks
n = number of observations

IV. Results and Discussions

Summarized in the Table 1 are the results of the analysis of the responses on the methods employed by construction firms in selecting incentive schemes. The result indicated selection by discretion ranked first among the methods employed by construction firms in selecting incentive schemes with a mean value of 2.50. Selection based on performance measurement was ranked second with a mean value of 2.30. Selection by large group measure was ranked least with a mean value of 0.95. From the foregoing, the analysis posits that incentive schemes are most frequently selected by discretion. This result supports the view of Gregorio (2006) which confirmed that selection of incentive schemes by management of organizations is mostly discretionary.

Table 1 : Methods of Selecting Incentive Schemes

S/No	Methods	N	Mean	Standard Deviation	Rank
1.	Selection by subjective performance	104	1.88	1.409	5
2.	Selection by tradition	104	2.23	1.450	3
3.	Study based selection	104	2.17	1.178	4
4.	Selection based on performance measurement	104	2.30	1.253	2
5.	Selection based on large group measure	104	0.95	0.702	7
6.	Selection based on broad financial measure	104	1.88	0.784	5
7.	Selection by discretion	104	2.50	1.407	1

Presented in Table 2 are the results of the assessment of the characteristics manifested by incentive schemes in construction firms upon selection. The variable with the highest and the lowest Mean respectively were 'incentive schemes often results in reduction of labour costs (3.52), and incentive schemes poses difficulty in the introduction of improved methods, better tools and machines (0.37)'. The Mean values of respondents' assessment of the characteristics manifested by incentive schemes upon selection in descending order of magnitude were 'Incentive schemes guarantee extra pay that is consistent with extra effort' (3.51), 'Incentive schemes stimulate workers to put in extra effort' (2.59), 'incentive schemes take the safety of workers into consideration'(2.46), 'workers' earnings are not restricted as far as possible (2.43)', 'the schemes are fair in its determination' (2.27), 'the schemes are clear, well understood and easily calculable by all workers'(2.22), 'relationship among workers is ruptured as a result of incentive schemes offered'(1.79) 'incentive schemes cause to fight among workers'(1.75), 'incentive schemes undermine the interest of workers' (1.67), 'incentive schemes often lead to reduction in the quality of work' (1.62), 'incentive scheme creates a manipulative effect on workers'(1.61), 'incentive schemes often lead to unhealthy competition among workers'(1.51), 'Incentive schemes cause workers to avoid risk taking or exploration of possibilities' (1.48), and 'incentive schemes pose difficulty in the introduction of improved methods, better tools and machines' (0.37). This result therefore suggests that the use incentive scheme is mostly perceived to result to reduction in labour costs.

Characteristics of incentive schemes after selection

S/N	Characteristics of Incentive Schemes	N	Mean	Standard Deviation	Rank
1.	Relationship among workers is ruptured as a result of incentive schemes offered.	104	1.79	1.473	8
2.	Incentive scheme creates a manipulative effect on workers	104	1.61	1.529	12
3.	Incentive schemes often lead to unhealthy competition among workers	104	1.51	1.435	13
4.	Incentive schemes cause workers to avoid risk	104	1.48	1.441	14

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	taking or exploration of possibilities				
5.	Incentive schemes undermine the interest of workers	104	1.67	1.368	10
6.	Incentive schemes cause to fight among workers	104	1.75	1.512	9
7.	Incentive schemes often lead to reduction in the quality of work	104	1.62	1.496	11
8.	Incentive schemes pose difficulty in the introduction of improved methods, better tools and machines.	104	0.34	0.474	15
9.	Worker earnings are not restricted as far as possible	104	2.43	1.440	5
10.	Incentive schemes often results in reduction in labour costs	104	3.53	0.539	1
11.	Incentive schemes take the safety of workers into consideration	104	2.46	0.501	4
12.	Incentive schemes stimulate workers to put in extra effort	104	3.51	0.521	2
13.	The schemes are clear, well understood and easily calculable by all workers	104	2.22	1.643	7
14.	The schemes are fair in its determination	104	2.27	1.662	6
15.	Incentive schemes guarantee extra pay that is consistent with extra effort	104	2.59	1.355	3

Correlation Analysis of the Methods of Selecting Incentive Schemes and the Characteristics manifested by the Incentive Schemes

Presented in Table 3 is the correlation analysis of the methods of selecting incentive schemes and the characteristics manifested by the incentive schemes. This correlation analysis was carried out to analyze the characteristics associated with each of the methods employed by construction firms in selecting incentive schemes.

The result in column 1 of Table 3 shows that there is a strong positive correlation between variables- relationship among workers is ruptured as a result of incentive schemes offered (0.659), incentive schemes create a manipulative effect on workers (0.705), incentive schemes often lead to unhealthy competition among workers (0.735), incentive schemes cause workers to avoid risk taking or exploration of possibilities (0.676), incentive schemes undermine the interest of workers (0.680), incentive schemes cause fight among workers (0.716), incentive schemes often lead to reduction in the quality of work (0.543), and the selection of incentive schemes by subjective performance measure at the 0.01 level of confidence while a strong negative correlation exists between variables- workers earnings are not restricted as far as possible (0.622), the schemes are clear and easily calculable by all workers (0.690), the schemes are fair in its calculation (0.768), incentive schemes guarantee extra pay that is consistent with extra effort (0.666), and the selection of incentive schemes by subjective performance measure at the 0.01 level of confidence.

The result showed that the selection of incentive schemes by performance measure causes incentive schemes to manifest following characteristics- 'relationship among workers is ruptured as a result of incentive schemes offered, incentive schemes create a manipulative effect on workers, incentive schemes often lead to unhealthy competition among workers, incentive schemes cause workers to avoid risk taking or exploration of possibilities, incentive schemes undermine the interest of workers, incentive schemes cause fight among worker, incentive schemes often lead to reduction in the quality of work'. Furthermore, incentive schemes exhibit the direct opposite of the following characteristics upon selection schemes by subjective performance: 'workers earnings are not restricted as far as possible , the schemes are clear, well understood and easily calculable by all workers, the schemes are fair in its calculation, incentive schemes guarantee extra pay that is consistent with extra effort'.

The result in column 2 of Table 3 revealed that there is a strong positive correlation between variables - relationship among workers is ruptured as a result of incentive schemes offered (0.783), incentive schemes create a manipulative effect on workers (0.658), incentive schemes often lead to unhealthy competition among workers (0.754), incentive schemes cause workers to avoid risk taking or exploration of possibilities (0.779), incentive schemes undermine the interest of workers (0.765), incentive schemes cause fight among workers (0.589), incentive schemes often lead to reduction in the quality of work (0.640), and the selection of incentive schemes by tradition at the 0.01 level of confidence. A strong negative correlation exists between variables- incentive schemes pose difficulty in the introduction of improved methods, better tools and machines (0.241), workers earnings are not restricted as far as possible (0.687), the schemes are clear, well

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understood and easily calculable by all workers (0.814), the schemes are fair in its calculation (0.834), incentive schemes guarantee extra pay that is consistent with extra effort (0.627), and the selection of incentive schemes by tradition at 0.01 and 0.05 levels of confidence.

The result revealed on the one hand that, the selection of incentive schemes by tradition causes incentive schemes to manifest the following characteristics- relationship among workers is ruptured as a result of incentive schemes offered, incentive schemes create a manipulative effect on workers, incentive schemes often lead to unhealthy competition among workers, incentive schemes cause workers to avoid risk taking or exploration of possibilities, incentive schemes undermine the interest of workers, incentive schemes cause fight among workers, incentive schemes often lead to reduction in the quality of work. On the other hand, incentive schemes were perceived by respondents to exhibit the direct opposite of the following characteristics upon selection schemes by tradition: 'incentive schemes pose difficulty in the introduction of improved methods, better tools and machines, workers earnings are not restricted as far as possible, the schemes are clear, well understood and easily calculable by all workers, the schemes are fair in its calculation, incentive schemes guarantee extra pay that is consistent with extra effort '.

The result in column 3 of Table shows that there is a strong positive correlation between variables- workers earnings are not restricted as far as possible (0.535), the schemes are clear, well understood and easily calculable by all workers (0.0.706), the schemes are fair in its calculation (0.717),), incentive schemes guarantee extra pay that is consistent with extra effort (0.545) and the study-based selection of incentive schemes at the 0.01 level of confidence while a strong negative correlation exists between variables- relationship among workers is ruptured as a result of incentive schemes offered (0.696), incentive schemes create a manipulative effect on workers (0.649), incentive schemes often lead to unhealthy competition among workers (0.729), incentive schemes cause workers to avoid risk taking or exploration of possibilities (0.691), incentive schemes undermine the interest of workers (0.639), incentive schemes cause fight among workers (0.535), incentive schemes often lead to reduction in the quality of work (0.533), and the study-based selection of incentive schemes at the 0.01 level of confidence The result revealed the study-based selection of incentive schemes cause incentive schemes to manifest the following characteristics- 'workers earnings are not restricted as far as possible, the schemes are clear, well understood and easily calculable by all workers, the schemes are fair in its calculation, incentive schemes guarantee extra pay that is consistent with extra effort'. However, incentive schemes were perceived by respondents to exhibit the direct opposite of the following characteristics upon the study-based selection of incentive schemes - relationship among workers is ruptured as a result of incentive schemes offered, incentive schemes create a manipulative effect on workers , incentive schemes often lead to unhealthy competition among workers, incentive schemes cause workers to avoid risk taking or exploration of possibilities, incentive schemes undermine the interest of workers, incentive schemes cause fight among workers, incentive schemes often lead to reduction in the quality of work.

The result in column 4 of Table 3 shows that there is a strong positive correlation between variables- workers earnings are not restricted as far as possible (0.594), the schemes are clear, well understood and easily calculable by all workers (0.681), the schemes are fair in its determination (0.678), incentive schemes guarantee extra pay that is consistent with extra effort (0.652) and the selection of incentive schemes by performance measurement at the 0.01 level of confidence while a strong negative correlation exists between variables- relationship among workers is ruptured as a result of incentive schemes offered (0.609), incentive schemes create a manipulative effect on workers (0.624), incentive schemes often lead to unhealthy competition among workers (0.629), incentive schemes cause workers to avoid risk taking or exploration of possibilities (0.716), incentive schemes undermine the interest of workers (0.674), incentive schemes cause fight among workers (0.682), incentive schemes often lead to reduction in the quality of work (0.659), and the selection of incentive schemes by performance measurement at the 0.01 level of confidence.

The result revealed that incentive schemes manifest following characteristics- 'workers earnings are not restricted as far as possible, the schemes are clear, well understood and easily calculable by all workers, the schemes are fair in its calculation, incentive schemes guarantee extra pay that is consistent with extra effort' , when selected by performance measurement. Also incentive schemes were perceived by respondents to exhibit the direct opposite of the following characteristics upon selection schemes by performance measurement - relationship among workers is ruptured as a result of incentive schemes offered, incentive schemes create a manipulative effect on workers, incentive schemes often lead to unhealthy competition among workers, incentive schemes cause workers to avoid risk taking or exploration of possibilities, incentive schemes undermine the interest of workers, incentive schemes cause fight among workers, incentive schemes often lead to reduction in the quality of work.

The result in column 5 of Table 3 shows that there is a strong positive correlation between variables- incentive schemes create a manipulative effect on

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workers (0.310), incentive schemes often lead to unhealthy competition among workers (0.252), incentive schemes cause workers to avoid risk taking or exploration of possibilities (0.193), incentive schemes often results in reduction in labour cost (0.211), and the selection of incentive schemes by large group measure at the 0.01 level of confidence.

The result revealed that incentive schemes manifest majorly the following characteristics: 'incentive schemes create a manipulative effect on worker, incentive schemes often lead to unhealthy competition among workers, incentive schemes cause workers to avoid risk taking or exploration of possibilities, incentive schemes often results in reduction in labour cost', when selected by large group measure.

The result in column 6 of Table 3 shows that there is a strong positive correlation between variables- workers earnings are not restricted as far as possible (0.382), the schemes are clear, well understood and easily calculable by all workers (0.351), the schemes are fair in its determination (0.395), incentive schemes guarantee extra pay that is consistent with extra effort (0.326) and the selection of incentive schemes by broad financial measure at the 0.01 level of confidence; while a strong negative correlation exists between variables- relationship among workers is ruptured as a result of incentive schemes offered (0.359), incentive schemes create a manipulative effect on workers (0.297), incentive schemes often lead to unhealthy competition among workers (0.629), incentive schemes cause workers to avoid risk taking or exploration of possibilities (0.353), incentive schemes undermine the interest of workers (0.381), incentive schemes cause fight among workers (0.340), incentive schemes often lead to reduction in the quality of work (0.374), and the selection of incentive schemes by broad financial measure at the 0.01 level of confidence.

The result revealed that incentive schemes manifest following characteristics- 'workers earnings are not restricted as far as possible, the schemes are clear, well understood and easily calculable by all workers, the schemes are fair in its determination, incentive schemes guarantee extra pay that is consistent with extra effort' when selected by broad financial measure. However, incentive schemes were perceived by respondents to exhibit the direct opposite of the following characteristics upon selection schemes by broad financial measure - relationship among workers is ruptured as a result of incentive schemes offered, incentive schemes create a manipulative effect on workers, incentive schemes often lead to unhealthy competition among worker, incentive schemes cause workers to avoid risk taking or exploration of possibilities, incentive schemes undermine the interest of workers, incentive schemes cause fight among workers, incentive schemes often lead to reduction in the quality of work

The result in column 7 of Table 3 shows that there is a strong positive correlation between variables- relationship among workers is ruptured as a result of incentive schemes offered (0.555), incentive schemes create a manipulative effect on workers (0.614), incentive schemes often lead to unhealthy competition among workers (0.665), incentive schemes cause workers to avoid risk taking or exploration of possibilities (0.609), incentive schemes undermine the interest of workers (0.573), incentive schemes cause fight among workers (0.606), incentive schemes often lead to reduction in the quality of work (0.621), incentive schemes pose difficulty in the introduction of improved methods, better tools and machines (0.249) and the selection of incentive schemes by discretion at 0.01 and 0.05 levels of confidence, while a strong negative correlation exists between variables - workers earnings are not restricted as far as possible (0.479), schemes take the safety of workers into consideration (0.248), the schemes are clear, well understood and easily calculable by all workers (0.645), the schemes are fair in its determination (0.643), incentive schemes guarantee extra pay that is consistent with extra effort (0.676), between and the selection of incentive schemes by discretion at 0.01 and 0.05 levels of confidence.

The result revealed that incentive schemes manifest following characteristics- relationship among workers is ruptured as a result of incentive schemes offered, incentive schemes create a manipulative effect on workers, incentive schemes often lead to unhealthy competition among workers, incentive schemes cause workers to avoid risk taking or exploration of possibilities, incentive schemes undermine the interest of workers, incentive schemes cause fight among workers, incentive schemes often lead to reduction in the quality of work, when selected by discretion. However, incentive schemes were perceived by respondents to exhibit the direct opposite of the following characteristics upon selection schemes by discretion: workers earnings are not restricted as far as possible, schemes take the safety of workers into consideration, the schemes are clear, well understood and easily calculable by all workers, the schemes are fair in its determination, incentive schemes guarantee extra pay that is consistent with extra effort.

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Correlation analysis between the methods of selecting incentive schemes and the characteristics manifested by the incentive schemes

	Y_1	Y_2	Y_3	Y_4	Y_5	Y_6	Y_7
X_1	0.659**	0.783**	-0.696**	-0.609**	0.126	-0.359**	0.555**
X_2	0.705**	0.658**	-0.649**	-0.624**	0.310**	-0.297**	0.614**
X_3	0.735**	0.754**	-0.729**	-0.629**	0.252**	-0.482**	0.665**
X_4	0.676**	0.779**	-0.691**	-0.716**	0.193*	-0.353**	0.609**
X_5	0.680**	0.765**	-0.639**	-0.674**	0.136	-0.381**	0.573**
X_6	0.716**	0.589**	-0.535**	-0.682**	0.091	-0.340**	0.606**
X_7	0.543**	0.640**	-0.533**	-0.659**	0.092	-0.374**	0.621**
X_8	-0.94	-0.240*	-0.017	-0.040	0.110	-0.003	0.249*
X_9	-0.622**	-0.687**	0.535**	0.594**	-0.098	0.382**	-0.479**
X_{10}	-0.143	0.102	0.025	0.080	0.211*	0.102	-0.046
X_{11}	-0.144	0.105	0.079	0.180	-0.017	0.040	-0.248*
X_{12}	0.73	0.061	-0.102	0.060	0.180	-0.013	0.005
X_{13}	-0.690**	-0.814**	0.706**	0.681**	-0.154	0.351**	-0.645**
X_{14}	-0.768**	-0.834**	0.717**	0.678**	-0.173	0.395**	-0.643**
X_{15}	-0.666**	-0.627**	0.545**	0.652**	-0.127	0.326**	-0.676**

Where: Y1- Selection by subjective performance measure, Y2- Selection by tradition, Y3 -Study based selection of incentive scheme, Y4 - Selection of incentive scheme based on performance measurement, Y5 - Selection based on large group measures, Y6 - Selection based on broad financial measure, Y7 -Selection of incentive schemes by discretion and; X1- Relationship among workers is ruptured as a result of incentive schemes offered, X2 - Incentive scheme creates a manipulative effect on workers, X3- Incentive schemes often lead to unhealthy competition among workers, X4- Incentive schemes cause workers to avoid risk taking or exploration of possibilities, X5- Incentive schemes undermine the interest of workers, X6-Incentive schemes cause to fight among workers, X7-Incentive schemes often lead to reduction in the quality of work, X8- Incentive schemes pose difficulty in the introduction of improved methods, better tools and machines, X9- Worker earnings are not restricted as far as possible X10- Incentive schemes often results in reduction in labour costs, X11- Incentive schemes take the safety of workers into consideration, X12- Incentive schemes stimulate workers to put in extra effort, X13-The schemes are clear, well understood and easily calculable by all workers, X14-The schemes are fair in its determination, X15.- Incentive schemes guarantee extra pay that is consistent with extra effort.

V. Conclusion and Reccommendation

This study concludes that the most frequently used methods for selecting incentive schemes by construction firms were selection by tradition, selection based on performance measurement, and selection by discretion. Findings from this study have also proven that incentive schemes manifest certain traits after their selection through various methods.

On the one hand, upon the selection of incentive schemes by tradition, schemes were perceived to rupture the relationship among workers, create a manipulative effect on workers, generate unhealthy competition among workers, result to fight among workers, cause workers to avoid risk taking or exploration of possibilities, undermine the interest of workers, lead to reduction in the quality of work, and restrict workers' earning among others. Similarly, upon the selection of incentive schemes by discretion, schemes were also perceived to rupture the relationship among workers, generate unhealthy competition among workers, cause workers to avoid risk taking or exploration of possibilities, cause fight, lead to reduction in the quality, pose difficulty in the introduction of improved methods, better tools and machines among others.

On the other hand, upon the study-based selection of incentive schemes, incentive schemes did not restrict workers earnings; schemes were perceived by workers to be clear, well understood and easily calculable; relationship among workers was unaffected; workers did not feel manipulated; unhealthy competition was not generated and quality of work was unaffected. Similarly, upon selection of incentive schemes based on performance measurement, incentive schemes was perceived not to restrict workers earnings; schemes were perceived by workers to be clear, well understood and easily calculable; schemes were considered by workers as fair in its determination; extra pay consistent with extra effort was guaranteed; relationship among workers was not affected, workers did not feel manipulated and the quality of work was not affected.

Based on the characteristics manifested by incentive schemes upon their selection, the study therefore recommends the use of the study-based selection and the selection based on performance measurement for incentive schemes used in the construction industry. The selection of incentive schemes through these methods will serve as a check against trial and error practices in the use of incentive schemes in the construction industry as a whole.

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The Analysis of Plant Location Effectiveness the Study of Sarir Gas Turbine 855 MW Project Site at General Electric Company of Libya

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Abstract- The study presents a reporton Sarir Gas turbine industrial management especially for economical sustainable operation and proper element of plant management due to particularly design of an oil transportation system. It is found that the company is doing relative with some operational challenges and many people in Libya is rely on it and the influence of Government policies and programs on plant locations is quite helpful, particularly in planned economies area.

Keywords: libya, sarir gas turbine, plant location effectiveness.

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Khaled Emraje Mohamed Elderjy [α], Djamhur Hamid [σ] & Hamidah Nayati Utami [ρ]

Abstract - The study presents a reporton Sarir Gas turbine industrial management especially for economical sustainable operation and proper element of plant management due to particularly design of an oil transportation system. It is found that the company is doing relative with some operational challenges and many people in Libya is rely on it and the influence of Government policies and programs on plant locations is quite helpful, particularly in planned economies area.

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I. Introduction

Libya, has initiated several programs that could promote industrials development and among this, is Sarir Gas turbine which also benefited with this scheme.

In this report we observed that, a company has make decisions based on the plant location, which refers to the selection of a particular site for setting up a business or factory. But before making such a choice, it has to go through the detailed locational analysis considering various factors, which influence his decision. It is a long-term strategic decision, which cannot be changed once taken.

II. Background

a) Sarir Field

The Sarir Field was discovered in southern Cyrenaica during 1961 and is considered to be the largest oil field in Libya, with estimated oil reserves of 12 Gbbl (1.9 km^3).Sarir is operated by the Arabian Gulf Oil Company (AGOCO), a subsidiary of the state-owned National Oil Corporation (NOC). The Sarir field or, more specifically, Sarir C is on west edge of the Calanscio Sand Sea at the southeast margin of the Sirte Basin. Sarir C, which is part of a three-field complex, is 56 km long and 40 km wide covering 378 km^2. To its north is Sarir L, covering 15 sq mi (39 km^2). Situated between the two is a much smaller Sarir North pool. Estimated ultimate oil recovery from Sarir L is 1.2 Gbbl (190,000,000 m^3). The best, most sustainable, most efficient nations are going to have the best environmental Practices and sustainable power supply. Nations with a good reputation for sustainability have a competitive edge in sales. Conservation, efficiency, reduction of waste and sustainability buffer a nation against shocks. In Libya, a national, forward-looking environmental policy makes its exports more attractive. As it becomes more attractive for ecotourism.

b) Power Supply in Libya

The power supply is a major challenge for it sustainability, thus various initiative were made to overcome this challenge is the establishment of the Sarir Gas Turbine 855 MW Project Site at General Electric Company of Libya. Although, Libya has 17 significant desalination plants (out of a total of 400 desalination plants according to So E 2002) with an installed capacity of more than 100 mcm/year, or 33,374 cum/day, The less oil is consumed domestically, the more oil is available for export, and the more foreign exchange becomes available for sustainable investments by Libya's Oil Reserve Fund. The actual production is only 18mcm/year (Porter and Yergin 2006), only one percent of annual national demand. Hence, technology plants are co-located at electrical generation facilities. Most desalination plants run only sporadically due to scaling, corrosion, and maintenance problems. Most desalination (60 percent) in Libya is by the thermal plus flash vaporization methods (multistage distillation). Reverse osmosis output is about 20 percent, as at the Tajura facility. Electric membrane separation plants produce about 10 percent. Three BOT desalination plants companies went bankrupt.

c) Gas Turbine 855 MW Project

Gas Turbine 855 MW Project power plant is vital for its long term efficiency and stable power supply to Libya and a lot many factors come into play when deciding where to install the plant. Although, it may not be possible to get everything desired at a single location, place but still it should contain an optimum mix of the requirements for the settings to be feasible for long term economic justification. As the name implies the power plant is meant for generating power which obviously means that it will consume huge quantities of fuel. The exact quantity would depend on the size of the plant and its capacity but it is a general fact that ample

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quantities of fuel must be available either in the vicinity or it should be reasonably economical to transport the fuel till the power plan.

III. Objective of this Report

In the industry management today, the major concern of public, user and clients is the plant location and its affective reliability in operation, availability it amenities based on this location, maintainability and safety. Therefore the objectives of this report are:

a. To describe design process of Sarir Gas Turbine 855 MW Project plant location.
b. To highlight the factors influence the effectiveness of plant location.
c. To explain some of the major factors contribute to plant location errors and explore solutions and understanding of plant location processes

IV. Methods and Approach

The outline of research methodology for this report is presented in the form of a chart given in figure 1. The highly competitive environment, linked to the globalization phenomena, demands from companies more agility, better performance and the constant search for cost reduction. The present study focused on the analysis of plant location effectiveness on the study of Sarir Gas Turbine 855 MW Project Site at General Electric Company of Libya. The Materials are among many factors that contribute to improve a company's performance. The report is related in this work was performed in Sarir Gas Turbine 855 MW Project Site at General Electric Company of Libya. It was founded in the recent years and is classified as large-sized companies that provide electricity to Libya. The Sarir region contains a cluster of industries of metal-mechanic, automotive and metallurgical sectors that in its majority belong to production chains which demand a high internal performance level from their partners so the gas turbine is one them.

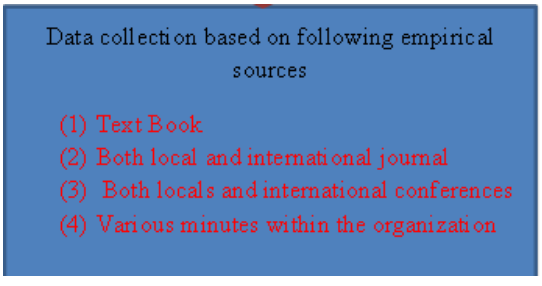

Figure1 : Outline of research methodology

As its name is known, seeks to provide descriptive and accurate description of the phenomenon notes based on the data that has been collected. The goal of the data collection is to describe the basic accuracy of the information as a result, this academic research attempts to describe the current cement company conditions and the performance. The data collection is based on an empirical through quantitative. Anyone considering an empirical project should consider first whether to use primary or secondary data. However, for this report I am solely used going to secondary because there is a substantial cost advantage to doing secondary analysis. Others have borne the cost of collecting the data, and although some costs may be incurred to tabulate the data, these costs will be considerably lower than original data collection. These existing data bases are often far superior in their extent, both geographic and historical, to anything that a single investigator could achieve. Most are in the public domain and many are easily accessible in a machine-readable format. Moreover, the study also relies on company report to find out route company production process this will tremendously help to give clear picture on overall company operation. The secondary data sources are the books, employees of the institution and previous reports any source through various units of the institution, Local reports, data can be access online through net. But there are problems are not available resources help in great extent such as published papers and reports, online data, and websites.

Sarir Gas Turbine 855 Mw Project Site At General Electric Company: - Primary data was collected through interview from some employees in the department of the situation. Since the report will be based secondary data so the analysis that can be done is meta-analysis. Meta-analysis is re-analysis of a number of published research studies to draw a conclusion. Since there is good number of studies on the report interest, these studies are sufficiently comparable, so we can use a meta-analysis to generalize a larger conclusion. Meta-analysis is by now a fairly sophisticated technique of its own, but it shares with other secondary techniques the advantage of being relatively inexpensive. Meta-analysis can also make a substantial contribution to the understanding and various conclusions for decision making which it should be very important tool for this report and the increasing complexity of construction projects creates the need for design professionals trained in all phases of the project's life-cycle and develop an appreciation of the building as an advanced technological system requiring close integration of many sub-systems and their individual components, including sustainability. Building engineering is an emerging discipline that attempts to meet this new challenge.

The results and discussion start with the analysis of plant location effectiveness is strategic. Organizations take the location decision considering various factors related to customers, supply of capital, raw material, power supply, business climate, manpower availability, government policies etc. There are mainly two methodologies to decide the plant

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location viz. Factor Rating and Centroid method. The type of product or services and the type of production system basically affects the plant layout. There are different plant layouts for This different types of production systems viz. Job Shop, Batch production and Mass production. In mass production, equipment's are expensive and used for a solitary purpose (Watanapa et al, 2011). A very small variety of goods are produced in this type of layout. In Job shop type of layout machineries are general and all-purpose machinery.

V. Results and Discussion

a) Sarir Gas Turbine 855 MW Project designed the plant location

Various designs of products may be manufactures in such facilities. Batch production falls between mass production and jobbing. One batch of products must be completed before work on the next one may begin. Similar products are produced on a batch basis, in large quantities Wilsten (2007). The plant layout must ensure the optimum usage of resources by minimizing the movements of the resources within the plant. A good location of a production or service facility will give cost advantage to production or services and may also reduce the raw material and distribution costs. The location aspect is particularly advantageous to small business enterprises and service units. Location adds to competitive advantages and improved profits. Usually location question arises when (1) a new plant or service facility is planned (2) there is addition to the existing business or added capacities in the other regions (3) existing facilities are to be relocated or modified to remove drawback (4) to get advantage of better infrastructure or incentives from the government sources. Location of organization plant or service facilities is a permanent fixture and has considerable expenditure. The selection has to be done considering all relevant aspects. If there is any mistake or wrong choice of location, all the expenditure in the form of site development, factory construction, installation of machinery and other infrastructure development will go waste

Figure 3.1 : Showing pipe line design

The report has acknowledged the challenge face by Sarir Gas Turbine 855 MW Project and how the company has invested huge amount of money into gas but yet, there is problem of gas transportation due plant location problem such as gas and geographic expansion should provide access to a fresh market and to additional resources as shown in figure 3.1. But companies that take a strategic view also realize that the new territory should increase a firm's competitive advantage by complementing and adding value to its current business. After all, the strategic value of a new location depends on three things,: the strength of available resources, such as nearby supporting industries; the company's ability to seek and retrieve knowledge in this setting; and its capability to do something better than competitors. The following problems have been identified

Figure 3.2 : Showing new pipe line construction site

Sarir project have team to design a new site through professional service of creating and developing concepts and specifications that optimize the function, value and appearance of products and systems for the mutual benefit of both user and manufacturer. In designing the location, Sarir determine suitable plant location for interrupted operation and maintaining pipelines and safety fig 3.2. Factors influence the effectiveness of the plant location are near to oil field, employee, material handling, strategic objectives, and socio economic factors. The eeffective plant location factors will achieve various objectives like efficient utilization of available land space, minimizes cost, allows flexibility of operation, provides for employees convenience, improves productivity etc. The entrepreneurs must possess the expertise to lay down a proper layout for new or existing plants. It differs from one plant to another. But basic principles to be followed are more or less same. Although, this report is mainly conducted with Sirir Gas turbine in main but it is applicable to all types of industries or plants.

Some problem error related to this design on the plant location of the Sarir is related with gas and geographic expansion should provide access to a fresh market and to additional resources. An optimum location can reduce the cost of production and distribution to a great extent. Thus great care and appropriate planning is required to select the most

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appropriate location. The efficiency of production depends on how well the various machines; production facilities and amenities are located in a plant. An ideal plant location should provide the optimum relationship among the output, floor area and manufacturing process. At the end, the location and management should be conducive to economic operation, health and safety of employees. It should ensure free and efficient flow of men and materials. Future expansion and diversification may also be considered while planning factory location.

b) The factors influence the effectiveness of the plant location

There are many factors effluence the effectiveness of the plant location and among them is good professional team and the team have proposed a new site and design through professional service of creating and developing concepts and specifications that optimize the function, value and appearance of products and systems for the mutual benefit of both user and manufacturer. Industrial designers develop these concepts and specifications through collection, analysis and synthesis of data guided by the special requirements of the client or manufacturer. They are trained to prepare clear and concise recommendations through drawings, models and verbal descriptions. Industrial design services are often provided within the context of cooperative working relationships with other members of a development group.

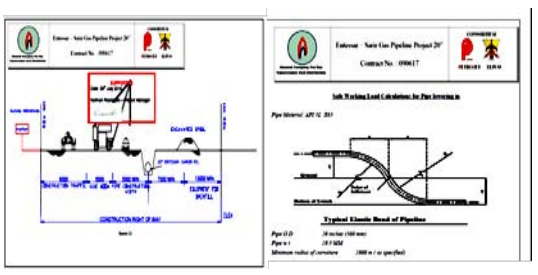

Figure 3.3 : Showing professional site design

With professional team company can excel and typical groups include management, marketing, engineering and manufacturing specialists. The industrial designer expresses concepts that embody all relevant design criteria determined by the group figure3.3

The pipeline is cleaned, primed and coated with a hot, tar-like material to prevent corrosion and wrapped in an outer layer of heavy paper, mineral wool or plastic. If the pipe is to be buried, the bottom of the trench is prepared with a sand or gravel bed. The pipe may be weighed down by short, concrete sleeves to prevent its lifting out of the trench from groundwater pressure. After the underground pipeline is placed in the trench, the trench is backfilled and the surface of the ground returned to normal appearance. After coating and wrapping, aboveground piping is lifted up onto prepared stanchions or casements, which may have various design features such as anti-earthquake shock absorption. Pipelines may be insulated or have heat trace capabilities

c) Problem error related to this design on the plant location and solution these problems

(a) (b)

Figure 3.4 : (a) Current fuel transportation system (b) long term plan for alternative fuel supply

The company is located in desert and the suppliers' side, truck is the most used mode whenever the shipped quantities do not justify the huge truck especially for their gas supply. However, the company demand to the supplier gas is higher and validates the use of truck. Related to the customers for those cases, airfreight is the most convenient choice, though not the least expensive. Facility location problems are unavoidable decisions for many organizations trying to compete on land. It is totally mistake to locate a company in abnormal area.

Figure 3.5 : Showing the desrt area of the company

This type of problem ranges from a simple facility location problem where the only decision made is where to establish a new plant, to more complex problems that decide on several aspects at the same timefig3.5, such as inventory, demand allocation, reliability, routes and others. The company transportation factors have been considered as inputs to several types of models serving as a multiplying weight; however, these factors have not been considered as

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decisions. Some of the factors related to the complex concept of transportation are: availability and reliability of diverse transportation modes and infrastructure; existing capacity in links, nodes and transportation modes; reduction of transit times for each transportation mode; maximization of transportation resources utilization; improvement of routing and scheduling performance; climate; community culture; regulations and quality standards; and others, along with the more traditional factors of distance, demand, and cost. the regular monthly fuel consumption is high and to keep this smooth is very difficult and this is provided in the summary.

Due to low pressure head due location issues and poor road network due location issues, the company suffers a great set back in supply adequate distribution due to location issue. Basically, this has lead Libya not getting a stable power supply for its development and gas turbine which operates at Sarir Gas Turbine 855 MW Project Site at General Electric Company of Libya is one of the main power supply in Libya and in most cases problems associated with such project the material handling or error in material handling due to above mentioned problems and if not properly maintained with result in lower turbine performance which will generally affect the whole system and also will result in and decrease efficiency. Lower efficiency of gas turbine means the lower power output is produced. To increase the performance of gas turbines and maintain stable supply there have several things to be done, so therefore the study want examine following problem and suggest solution in Sarir Gas Turbine 855 MW Project.

VI. Conclusion

In conclusion, the study presents a report on Sirir Gas turbine industrial management especially on plant location.

a. Sarir project have team to design a new site through professional service of creating and developing concepts and specifications that optimize the function, value, appearance of products and systems for the mutual benefit of both user and manufacturer. In designing the location, Sarir determine suitable plant location for interrupted operation and maintaining pipelines and safety.
b. The influence factors of plant location are near to oil field, employee, material handling, strategic objectives, and socio economic factors. The effectiveness of plant location factors will achieve various objectives like efficient utilization of available land space, minimizes cost, allows flexibility of operation, provides for employees convenience, improves productivity etc. The entrepreneurs must possess the expertise to lay down a proper layout for new or existing plants. It differs from one plant to another. But basic principles to be followed are more or less same. Although, this report is mainly conducted with Sirir Gas turbine in main but it is applicable to all types of industries or plants.
c. Some problem error related to this design on the plant location of the Sarir are Poor Road Network due location issues, The company suffers a great set back in supply adequate distribution due to location issue and Plant location designed error for gas flow through geographic expansion should provide access to a fresh market of enhance additional resources. In an optimum location can reduce the cost of production for distribution to a great extent. Thus great care and appropriate planning is required to select the most appropriate location. The efficiency of production depends on how well the various machines; production facilities and amenities are located in a plant. An ideal plant location should provide the optimum relationship among the output, floor area and manufacturing process. Finely, the management atmosphere should be conducive to economic operation, health and safety of employees. It should ensure free and efficient flow of men and materials. Future expansion and diversification may also be considered while planning factory location.

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The Job Satisfaction of District Officers in the Developing State Like; Pakistan A Survey of Local Government of Khyber Pakhtunkhwa

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Abstract- The Job satisfaction of district officers in Pakistan is affected by different factors like, Terrorism, political Instability, poverty and dysfunction of bureaucracy. There is uniqueness as well as differences in the perception of the officers about job satisfaction from situation to situation and from organization to organization. There are consensus among the researchers that job satisfaction increases employee's productivity, commitment and Involvement and decreases absenteeism and turnover. This study is intended to pinpoint the causes, consequences of job satisfaction in developing state like; Pakistan.

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THEJOBSATISFACTIONOFDISTRICTOFFICERSINTHEDEVELOPINGSTATELIKEPAKISTANASURVEYOFLOCALGOVERNMENTOFKHYBERPAKHTUNKHWA

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Dr. Abdul Sattar Khan [α] & Farooq Jan[σ]

Abstract - The Job satisfaction of district officers in Pakistan is affected by different factors like, Terrorism, political Instability, poverty and dysfunction of bureaucracy. There is uniqueness as well as differences in the perception of the officers about job satisfaction from situation to situation and from organization to organization. There are consensus among the researchers that job satisfaction increases employee's productivity, commitment and Involvement and decreases absenteeism and turnover. This study is intended to pinpoint the causes, consequences of job satisfaction in developing state like; Pakistan.

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I. Introduction

Like developed countries, the developing world is also well aware of the importance attached with job satisfaction. Such studies are being managed in every developing state to manage the attitudes of their workforce in public as well as private sector organizations. Most of the studies aim at unearthing the nature, process and consequences of job satisfaction and dissatisfaction. For example, in Nigeria research have been reported on 'burnout, job satisfaction and work situations' (Agunga et al., 1997); person-related variables of job satisfaction in public sector organizations and their impacts on the theory and practice of management in the developing countries (Tella et al., 2007).

Likewise, Mulinge, (2000) explored job satisfaction and organizational commitment in Kenya and Euan, (2007) in Tanzania. Similarly, in Malaysia Saiyadain (1996) have worked on the correlates of job satisfaction in Malaysian managers; Yusof & Shamsuri (2006) have documented their findings on organizational justice as the determinant of job satisfaction and organizational commitment; Wai, (2006) performed a quantitative analysis of the link between organizational culture and job satisfaction in Malaysian health care; while Rahman et al., (2006) have recorded their results about the relationship between Islamic work ethics and organizational commitment. Other research findings are available about Singapore (Koh & Ten, 1998; Tan et al., 2007); Taiwan (Lee & Lin, 1999; Jiunn & Wu, 2005); as well as India (Bhatt, 1997; Lacity & Iyer, 2007).

The researchers in the developing countries are exploring different aspects of job satisfaction in both public and private sector employees. For example, in Nigeria, Agunga et al., (1997) explored burnout, job satisfaction and work situations as perceived by District Extension Officers while, Sokoya, (2000) unearthed personal predictors of job satisfaction for the public sector managers and their implications for management practice and development in a developing economy. In Kenya, Mulinge, (2000) worked on the 'Explanation of Cross-Sector Differences in Job satisfaction and Organizational Attachment among Agricultural Technicians.' Similarly, Tirmizi, et al., (2008) measured the job satisfaction of white collar employees

a) Public Sector Employees

Due to the increasing role of public sector in the development of a developing country, efforts are underway to explore new models of professionalism by focusing on human resource development (Sokoya, 2000). However, public sector workers are usually shown to be lower in job satisfaction and organizational commitment relative to their counterparts in the private sector. Virtually all cross-sector comparative studies, however, have focused on work settings in relatively industrialized nations such as the United States and the developing nations remain understudied (Mulinge, 2000). For example, although Iranian government has made efforts to support formers and Agricultural Extension Officer, the evidence shows that they have not been enough. There is reporting of frustration, delays, lack of funding and differences of administrative and philosophical values (Asadi et al., 2008).

Research shows that public sector managers had a lower level of job satisfaction with those of private sector employees (Sokoya, 2000). Based on the findings of a study, private sector employees are higher in mean job satisfaction, organizational commitment,

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and intention to stay relative to their counterparts in public sector. This finding supports the study's first hypothesis that agricultural technicians working in the public and semi-public sectors are low in job satisfaction and organizational attachment relative to their counterparts in the private sector. Generally speaking, it is also consistent with the existing literature (Mulinge, 2000).

There is growing evidence to suggest that employees are working harder, their workmanship has improved and that they take much pride in their work. Yet they seem to be less enthusiastic and less motivated. This study is an attempt to sensitize organizations to the factors that influence job satisfaction and help them to weave these factors into the blueprints prepared to enhance job satisfaction (Saiyadain, 1996). Due to global pressures, the public sector in developing countries is focusing on the investigation to strengthen the relationships between productivity and job satisfaction because success of any organization has been found dependent on the powerful linkages between productivity and job satisfaction of the workforce (Sokoya, 2000). The research tells that contextual factors and permanent/regular nature of the job are very significant determinants of job satisfaction and can produce higher levels of satisfaction among the human resource. Likewise, age of the employee and relations with supervisors and fellow workers also appear as the major catalysts in changing the satisfaction behavior of the employees (Koh & Ten, 1998).

People who are more internally oriented see themselves as being responsible for events that occur. Those who are more externally oriented attribute the cause of events to luck, chance, fate, or powerful others. In other words, people with an internal locus of control generally think that things happen because of their own choices and actions. Externals, on the other hand, generally perceive that factors outside of themselves are the reason that events happen in their lives. Internals are more likely to be more satisfied than externals for four reasons. First, internals are more likely to leave a dissatisfying job to seek positions that they find satisfying. Second, internals perform better and are therefore more likely to receive more satisfying outcomes. Third, internals are likely to be promoted and receive raises more quickly, again leading to the likelihood that they will receive more satisfying outcomes. Finally, internals are likely to stay in positions and organizations that gives them control which, in turn, allows them to experience a satisfaction of cognitive consistency between their psychological preferences and job experiences (Daniel et al., 1997).

As far as the impacts of demographics on job satisfaction, is concerned, the researchers have come up with differing results. Like the dispositional variables, these control variables were not supported as independently causing the observed differences in satisfaction and attachment among agricultural technicians working in the public and private sectors. When these were analyzed alone, the private sector technicians still emerged to be higher in satisfaction, commitment, and intention to stay than their counterparts in both the public sector (Mulinge, 2000). While a research from Iran reports that low pay and unfair promotion policy are the major negative contributors to job satisfaction. The researchers did not find any relationship between job satisfaction and age and experience. Besides this, personal features (or demographics) of employees partially explains the variation in job satisfaction, meaning that rest of the change is due to other factors (Asadi et al., 2008).

Researchers tell that commonly female are more satisfied than their male counterparts however, some studies also report otherwise. Few studies found a positive relationship between age and job satisfaction. An increase in education has generally been found to be inversely related to job satisfaction. Few studies were conducted to see the relationship between experiences of the employees, somewhere there is linear relationship was found (Saiyadain, 1996 & Asadi et al., 2008).

II. Literature Review

a) *Leading Concerns*

In the developing states the public sector plays a forefront role in economic development; the employment rate has been growing ghastly as compare to developed countries. It is the result of the strategic importance to the public sector in the economic development of many countries, there is a concerted effort to make public sector management respond to the changing needs of developing nations (Sokoya, 2000).

The concepts of job satisfaction and organizational attachment are some of the most studied in industrial and organizational psychology and in the sociology of work and occupations (Mulinge, 2000). Current focus in public sector organizations of developing countries is on the relationship between the personal and job characteristics, and contextual factors of the workplace (Sokoya, 2000).

Although the job satisfaction is a universal problem and both developed and developing countries are struggling to understand the issue and devise most effective measures to handles different issues of their employees' involvement, commitment, absenteeism, and turnover through creating and maintaining job satisfaction. However, due to environmental differences developing countries are having different concerns than the advanced world. Following are the leading issues of developing states with reference to job satisfaction of their employees:

i. *Shortage of Economic Resources*

As the title shows that developing countries are not yet developed. So they have shortage of economic

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resources to meet their requirements. For example, their salary systems and structures are neither according to international standards nor based on the principles of equality. The employees work in the bad working environments with very poor facilities even to perform their jobs. The salaries are very low, work conditions are poor, merits are not observed in appointments and promotions and people are mentally disturbed due to multiple problems.

ii. *Corruption*

Developing countries have higher levels of public corruption. For example, there have been recent surveys by 'Transparency International' (Transparency International, 2010) about the levels and degrees of corruption in Pakistan. The government of Khyber Pakhtunkhawa (KPK) has been found the most corrupt government among all provinces of the country. This corruption has become the main source of job dissatisfaction particularly among the public servants of the province. Corruption happens in different styles, for example, at the time of appointment bribes are given to get 'highly paid' jobs. These highly paid jobs are actually the factories of corruption. So one who is appointed with corruption will definitely do corruption as a ritual.

iii. *Political Interference and Instability*

Another feature of the developing countries is the political interference in public administration and political instability resulting into the frequent change of governments from democratic to dictatorial and then otherwise. Under democratic governments, public servants are treated as the servants of politicians while dictators use them as their spearheads to rule the country. In Pakistan, for example, under democracy political appointments, transfers and promotions become commonplace. When there is martial law then all bureaucracy becomes servant of a single person.

iv. *Dysfunctions of Bureaucracy*

Most of the developing countries have remained the colonies of previous western powers (for example, British in Asia and France in Africa). Most of them still using the colonial models of bureaucracy with very nominal changes. Obviously, those bureaucratic models best suited the objectives of foreign powers but they can never be helpful to the local governors unless they think themselves as 'Desi-Goras'. This perception has created a so called 'Bureaucratic-Elites' who perceive themselves in the shows of their colonial lords. In Pakistan, for example, the so called elites try their level best to recruit (or promote or transfer) their own kids, relatives, friends and supporters on the important posts in any department or on any post with the chances of benefits other than legal ones.

III. Job Satisfaction in Pakistan

In Pakistan, a diversity of research projects has been conducted and the same continues to measure and analyze the job satisfaction of employees in both public and private sectors of Pakistan. Most of them used survey methods (with questionnaire and interview as data collection tools) to record the attitudes of job satisfaction and organizational commitment (Bodla & Naeem, 2004); levels of job satisfaction (Shah & Jalees, 2004); demographic impacts on organizational support and motivation (Qammar et al., 2006); organizational commitment (Chughtai & Zafar, 2006); the relationship of performance appraisal with productivity and job satisfaction (Khan, 2006); determinants of organizational commitment among IT-Professionals (Bashir & Ramay, 2008); and impacts of age, tenure on the job satisfaction of white collar employees in Pakistan (Tirmizi et al., 2008).

a) *Introduction*

Thousands of the published research articles and dissertations report that job satisfaction is related to performance, productivity, organizational commitment, retention and turnover of the employees (Bodla & Naeem, 2004). Job satisfaction has been the focus of many researchers measuring employee commitment level, organizational turnover and absenteeism.

Organizations want their employees to be satisfied to become more productive and efficient (Shah & Jalees, 2004). Tirmizi et al., (2008) tried to find out the relationship between the criteria of job satisfaction and age and tenure of white collar employees working in organizations operating in the area of Rawalpindi and Islamabad. It was found there exits a negative relationship between age, tenure and job satisfaction of white collar workers.

Bashir & Ramay (2008) explored the factors of organizational commitment among IT-Professionals in Pakistan. Research revealed that procedural justice, information sharing and work policies are the critical to lower turnover rates of the professionals. They prefer challenging work, advancement in their career. While, Bodla & Naeem (2004) explored the 'Motivator and Hygiene Factors Explaining Overall Job Satisfaction among Pharmaceutical Sales Representatives' and found female sales representatives are somewhat more satisfied with overall job than male counterparts. Master degree holders are more satisfied with job than graduate degree holders. Married individuals are somewhat more satisfied with job than unmarried individuals. Those employees with more than five years are more satisfied with job than those with less than five years experience. Older sales representatives are more satisfied with job than younger counterparts. Junior employees are more satisfied with job than senior counterparts.

Chughtai & Zafar (2006) conducted a study for determining whether personal attributes of the employee, factors of job satisfaction and organizational justice determine the change in the teachers' commitment working in Islamabad, Rawalpindi,

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Peshawar and Lahore. They found that the demographic attributes like education, age, marital status, tenure and belief in organization are criterion variables to define job satisfaction and commitment.

b) Major Problems of Job Satisfaction in the Country

Job satisfaction is a measure of the balance between expectations and outcomes because organization is a social system where every participant benefits including employees and customers (Khan, 2006). Job satisfaction represents attitude rather than a behavior. Job satisfaction is taken as dependent variable because of two reasons. First, is its demonstrated relationship to performance factors and, second is the value preferences held by organizational behavior researchers (Tirmizi et al., 2008). Researchers have confirmed the relationship between job satisfaction and personal characteristics of the employees like university teachers (Chughtai & Zafar, 2009). The empirical data about the human resources in Pakistan gives the impression that as more resources are becoming available, the income is climbing up, the country is passing through a second phase of demographic change (Economic Survey, 2006-07). This evidence shows that the overall economy of Pakistan is on the rise which will certainly create more jobs in the country. This will invite more researchers to evaluate and analyze the phenomenon of job satisfaction in the country (Tirmizi et al., 2008). There are reports that the number of female workers is increasing in Pakistani organizations in both public and private sector however, it is still a bare fact that males are obviously larger in number therefore they dominate (Bashir & Ramay, 2008).

c) The Problems of Job Satisfaction in Local Government

i. *Political Disturbance in the Country*

Pakistan has been passing through different types of political systems of dictatorship (Martial law) and Democracy. Most of the period characterized by dictatorial rules. Even the democracies have been nominal in the sense that democratic rulers wanted to stay in power for the prescribed period without giving any performance and services to their voters. Most of the democratic governments were dismissed by dictators on the charges of 'Corruption' and 'Maladministration.' These crises have seriously affected the public servants including those working at the local government levels.

ii. *Frequent Changes in the Local Government Systems*

Another problem is special to the District Officers in Pakistan are the continuous changes in the local government structures and operations over history of the country. Three local government systems have been introduced in the country during her lifetime of over sixty years. Unfortunately, all of these systems were introduced by dictators or Martial law administrators therefore none of the political parties like them however, this is not the reason for the failure of any systems. There are several other problems which are making local government systems a constant failure in the country, for example:

1. The political heads of the local government system are considered as a threat to the provincial political powers because distribution of powers between provincial and districts governments are not clear in the legislation of the system.
2. There is a struggle for power between local bureaucrats and the political executives of the district. There are reports that political and bureaucratic disputes are rampant in all the district governments of not Khyber Pakhtunkhawa rather whole country.
3. The political heads of the district are not clear about their duties and functions. This makes the situation very disturbing for the government officers like District officers (DO's) and other provincial bureaucracy. Corrupt officers 'fish in the troubled water' and use things in their own favor but good officers become confused and don't understand whether to listen to their organizational heads or political governors.

iii. *Lack of Coordination between Political and Government Officers*

Linked with the preceding point, there is no coordination system to bring the political and government workforces together into a single structure of local government for the area. This situation has created misunderstanding and confusions between district government and the bureaucrats. These disputes mostly convert into conflicts between different authorities which ultimately distort the work environment of local officers from both political and government domains.

iv. *Problems of General Public*

If the political and bureaucratic officers are confused about the system then what can be expected from the general public. Every local government system in the country has tried to bring citizens involved in the affairs of local government so that they could be made accountable. The systems suggested several structures (like citizen community boards - CCBs) wherein citizens are supposed to become member and thereby practically perform functions of local government. There is very little trend to participate in these committees or boards. Even those who register, they don't understand what to do and face multiple issues in playing their roles. District executive officers have to work in such environments, which is obviously very challenging.

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v. *Terrorism*

For the last more than two decades (since the beginning of Afghan war), the whole region is in the fire of terrorism. People are using religion, language, culture, ethnicity and many other social attributes as the basis of achieving their ulterior objectives. Pakistan is playing a frontline role in the so called 'war against terror' but this is appearing very expensive particularly for the common people. Today insecurity has gone to the peaks. Every citizen is vulnerable to the terrorist attacks anywhere including roads, streets, markets, parks and even 'mosques.' Terrorism is damaging every citizen, private and public employees and even the rulers of the country.

IV. Discussion on Global Job Satisfaction

Job satisfaction can be defined as the degree of feeling about the job and a kind of affective/emotional reaction to the working conditions/context of the job. Individuals at their early stages of employment usually experience low job satisfaction due to unfulfilled expectations. The employees when advanced in their careers gain maturity and work experience, which lead them to a more realistic level of expectations from their job (Tirmizi et al., 2008).

a) *Common Issues*

The concept of globalization in itself hints about the existence of common issues of the world states. The world community is increasingly becoming a global village with common interests, objectives, resources and thus common issues and problems. The citizens of a country are also the world-citizens as a member of world community. Thus, both the developed and developing countries have common problems as well as unique issues to handle. Similarly, job satisfaction of the workforce is a universal issue which is affected by both the national/local and international factors (Perry et al., 2006).

There are common as well as unique factors of job satisfaction. Work, pay, supervision, promotion, environment and co-workers are the universally tested variables as the determinants of job satisfaction of any type of employees in any organization working anywhere in the world. There are differences about the number of these factors of job satisfaction (De Vaney & Chen, 2003). In the developed world several other factors are also included in the questionnaires about the job satisfaction while in the developing states six basic factors are mostly used to measure the attitude. Following are the leading common issues for the developed and developing states with regard to the job satisfaction of their workforce:

1. Job satisfaction is a globally common issue therefore all the countries have to give equal attention to the problem. Every organization working in any country has to constantly measure the levels of job satisfaction in their workforce because research have confirmed that high performance, productivity, involvement and commitment all depends on the degree of job satisfaction.
2. All the basic factors of job satisfaction (work, pay, supervision, promotion, environment and co-workers) are commonly used as the primary measures of job satisfaction throughout the world (Ellickson & Logsdon, 2001).
3. All the theories of motivation and job satisfaction are common to all the organizations in understanding, measuring and analyzing the degree and levels of job satisfaction among their employees. Content theories are used to understand and control the job satisfaction problems of physical workers while to manage job satisfaction of officers and knowledge workers, process models are most popularly applied in both advanced and developing countries.
4. Personality characteristics are constantly reported as the dominant factor in determining the job satisfaction of employees. Thus, the role of personality dimensions is common in all studies conducted either in developed or developing world (Sokoya, 2000).
5. It is also common to both the advanced and developing states that physical and knowledge workers have different trends of job satisfaction. The job satisfaction of physical workers (or blue collar employees) is mostly concerned with visible factors while knowledge workers (or white collar employees) are found insisting for recognition, self empowerment and career development.
6. There are demographic impacts on all the organizational attitudes of employees including the job satisfaction. A huge body of research around the world repeatedly reports that the demographic diversities based on age, experience, gender, education, race etc play dominant role in determining the organizational attitudes of any type of employees.
7. The factors of job satisfaction and demographic attributes of the employees are used as the predictors of the employees' attitudes towards the organization. This practice is very common to all the organizations around the world (William & Sandler, 1995; Saiyadain, 1996; Sokoya, 2000; Ellickson & Logsdon, 2001; Shah & Jaleese, 2004; Jiunn & Wu, 2005; Beyth-Marom et al., 2006; Hiroyuki et al, 2007). Researchers have used personal attributes of the employees, their demographic diversities as well as the factors of job satisfaction as independents to predict positive (involvement and commitment) and negative (absenteeism and turnover) consequences of job satisfaction and dissatisfaction.

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b) Unique Concerns of the Developing Countries

Besides the common concerns of job satisfaction, the developing states have to handle multiple issues which are unique to their own environment. For example, there is big gap of resources between the poor and advanced countries so it is not possible for the developing countries to provide same type of facilities to their employees as they get in the rich world. Developing states exist on the other side of 'Divide'. Whether it is 'economic-divide', political-isolation or digital-divide - the developing states are struggling to abridge this distance within their limited resources. Following is a list of the unique problems faced by the developing states in handling the job satisfaction of their employees:

1. There is lack of economic resources in the developing world. They are not free in providing sufficient resources to even simply manage their organizations at the basic level of operations. They give limited pay, below standard work facilities and environment and employees are constantly in a diversity of problems with reference to their job, pay, supervision, promotion, environment and co-workers. Thus, lack of resources is a big issue for the developing states which hinders in human resource management and development.
2. The problems of over population, low levels of literacy, political instability, and no or very slow growth rates are the unique problems for the developing nations which further aggravate the problems of job satisfaction in both the private and public sector organizations.
3. Western countries characterize individualism and autonomy while in the Asian context; collectivism and harmony are more prevalent (Williams & Sandler, 1995). Every employee is not supposed to take care of himself rather a big family of dependents, which definitely changes the satisfaction levels and degrees of every employee working either in public or private sector. For example, Chughtai (2008) notes that Pakistan can be considered as similar to China in terms their score on collectivism as well as power distance.
4. Qualification or education of employees plays dominant role in the developing world. People with higher education and particularly those with foreign qualification have differences with their counterparts. For example, foreign-returns and highly qualified workers are less satisfied than the others (Sokoya, 2000). The problem is that these 'foreign-returns' start expecting the behavior of advanced countries in their own state forgetting that developing countries have their own resources and systems therefore have unique problems. The job satisfaction in the developing country must be analyzed in the perspective of native threats and opportunities.
5. Though demographic impacts are common to all countries however, the degree and intensity of their impact varies from advanced to less advanced states. In the developing nations, illiteracy changes the whole demographics of the communities. Thus, the advanced countries have less demographic differences than the poor world (Moynihan & Pandey, 2007). Due to lack of education, people are classified according to more demographic attributes than in the educated societies. In the developing countries, societies are strictly divided into groups based on language, color, race, economic status, religious sects and many other criteria.
6. Although six basic factors of satisfaction are similar to all the organizations and countries however, advanced states have moved up in the hierarchy of needs while poor nations are still struggling to handle traditional factors of job satisfaction. For example, pay is still a big issue in the developing world while rich states are working beyond pay at the social and psychological requirements of their employees (Crossman & Abou-Zaki, 2003). Since developing states are economically weak therefore they cannot raise their pay levels at par with the advanced countries. Every year government declares an increase in pay which is always less than the price index therefore the impacts are either nominal or marginalized by the increasing prices in comparison to additions in pay.
7. In the countries like Pakistan, the organizational rules and regulations and their implementation is yet not that much mature as it exits in the developed countries. Merit is not so much appreciated therefore promotions are still affected by corruption, nepotism and favoritism. Such practices make the personnel management a unique problem thereby requiring different treatment than the rich countries. The books and news papers have long been discussing bureaucratic problems of red-tapism, formalism, secretive-administration, and politicization of bureaucracy.
8. The reward systems in the developing courtiers are not compatible with the environment. There are several structures for this purpose. Government says something while practically something else happens. For example, recently government has fixed the minimum salary of a laborer equal to six thousand. But this is not being implemented practically by many of the private and public organizations. The private organizations save their expenses while public officers take their share in the pay of laborers.

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Exploratory Factor Analysis of Service Quality Dimensions for Higher Educational Institutes: A Students Perspective

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Abstract-Purpose: The paper, which is a part of the study to monitor the service quality in the education sector, sought to empirically validate the service quality dimensions that are relevant to the higher education institutes across India.

Design and Methodology: Exploratory Factor Analysis (EFA) was carried out to identify the underlying latent variables that significantly determine the service quality in higher education institutes (HEI's) in India. 600 Post-Graduate (PG) students were sampled from three universities located in Punjab in a cross-sectional survey wherein a self-administered structured questionnaire was used for getting the relevant information.

Findings: On analysis four factors emerged highlighting the importance of faculty & staff behaviour, tangibles, delivery and attitude, as the ones which significantly affect the quality of service being offered by the HEI's. The initial reliability testing for the dimensions yielded a Cronbach alpha ranging from 0.906 to 0.943 indicating that the modified instrument I- SERVQUAL can be conveniently used by HEI's for measuring service quality.

Keywords: service quality, I-SERVQUAL model, higher education, HEI's, universities, dimensions, exploratory factor analysis.

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EXPLORATORYFACTORANALYSISOFSERVICEQUALITYDIMENSIONSFORHIGHEREDUCATIONALINSTITUTESASTUDENTSPERSPECTIVE

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Exploratory Factor Analysis of Service Quality Dimensions for Higher Educational Institutes: A Students Perspective

Gurbinder Singh [α] & Maneek Kumar [σ]

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Practical Implications: The focus on higher education in the last two decades or so has led to the establishment of many public and private higher education institutes (HEI's) and universities in the country. The students, now-a-days, before joining any institute tend to look at, not only the type, but also quality of the services being offered by the institutes. This paper does provide an extensive block of thirty one items; split into four dimensions, for assessing the service quality of HEI's.

Keywords: service quality, I-SERVQUAL model, higher education, HEI's, universities, dimensions, exploratory factor analysis.

I. Introduction

The term globalization, which has formed the backbone of an open market regime, signifies open competition among firms for customers in worldwide markets *(P.N. Rastogi, 2002)*. The cornerstone of this competition is quality, cost and performance of their products and services. As globalization, implying free trade in products/services, offers a wide choice to customers across borderless world, it also exerts continuous pressure on competing companies to upgrade quality, reduce costs and develop superior products/services in terms of customer's need and expectations. Demand from customers, technological development, change of value and globalization are some of the factors that drive the need to change and develop an organization (*Bruzelius and Skarvad 2004*). The changes in business environment have led to the development of new techniques for organizing and managing companies/ organizations. These changes have been necessitated due to international competition and higher education is no exception.

Higher education in India, even if we look globally, is very costly and it has all come down to consumers wanting value for their money. They need quality education to go with the higher fee, which they have to shell out. They expect the universities, where they intend to study, to have the best infrastructure, highly qualified faculty and the best of facilities. Thus, universities too have been brought under the ambit of so called 'service' organizations, where most important characteristic separating them neatly from products is the sheer impossibility to separate production from consumption. In India we have approximately 480 universities in public and private sector. In the current scenario as it exists, the Indian Higher Education Sector is facing turbulent times. Entry barriers are being lowered, distance education is being expanded GNOU for example, has become world's largest university having 3 million students on roll with presence in 35 countries, private universities are mushrooming all over and foreign universities are all set to enter India in a big way. Those in the higher education sector are certainly in for a stiff competition and only those which provide the best of services at an affordable price will survive. This huge growth in student numbers, international-lization of education, government looking at reducing funding and increasing competitive pressures have prompted many universities and other education providers to focus on quality customer service.

II. Service Quality and Service Management

As the service sector grows and begins to play a very vital role in the global economy, the study of services and innovation are becoming increasingly important. As service products distributed regionally, nationally and globally have started contributing large

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amounts to company revenue streams; knowledge-intensive business services aimed at enhancing performance require reliable methods of measurement, assessment, and improvement (*Spohrer & Maglio, 2008*). As a result, accurate and reliable instruments that assess service quality are of great interest to companies whose revenues come from service delivery.

It is well known that service quality is based on multiple dimensions (*Parasuraman et al, 1985*). *Gronroos (1982)* identified two service quality dimensions, the functional and the technical aspect. The functional aspect concerns "how" service is provided while the technical aspect concerns "what" service is provided. The "what" is received by the customer as the outcome of the process in which the resources are used, i.e. the technical or outcome quality of the process, however, the customer also has become very much interested in as to how the process itself functions, i.e. the functional or process quality dimension. *Lehtinen & Lehtinen (1982)* view service quality in terms of physical, corporate (image) and interactive quality. Physical quality refers to the tangible aspects of the service. Corporate quality refers to how current and potential customers, as well as the other public, views (image) the service provider. Interactive quality concerns the interactive nature of the service provider and refers to a two-way flow that occurs between service provider and the customer, or her/his representative, including both animated and automated interactions.

Gronroos (2001) also presented, similar to what *Lehtinen and Lehtinen (1982)* proposed on service quality, the importance of corporate image and the experience of service quality. Customers often have contact with the same service firm, which implies that they bring their earlier experiences and overall perceptions of a service firm to each encounter. Hence, the image concept was introduced as yet another important attribute. *Gronroos (2001)* expressed that the image can be viewed as a filter in terms of a customer's perception of quality.

Parasuraman et al (1985) derived ten dimensions that influence service quality from what they suggested that quality evaluations are not made exclusively on the outcome of service. Moreover, they also involved evaluations of the service delivery process. The first dimension, when evaluation happens after service performance, focuses on "what" service is delivered and is called 'outcome quality'. The second dimension, 'process quality', is when the evaluation occurs while the service is being performed. In 1988 they defined service quality as "the degree of discrepancy between customer's normative expectations for the service and their perceptions of the service performance" *(Parasuraman et al, 1988). Brady and Cronin (2001)* presented a three-factor model describing service quality, ambient conditions, facility design and social factors. They defined that service environment are elements of the service delivery process and it seems best to include them as components of the functional dimension.

Higher education has increasingly been recognized as a service industry and, as a sector, it must strive to identify the expectations and needs of its clients, who are the students *(Mello et al, 2001).* According to *Lovelock (2001),* education service is classified as a service with intangible actions, directed towards the minds of people, with continuous delivery, conducted through a partnership between the service organization and its client, and although it provides high personal contact, there is low customization.

Many scholars like *Bemoski (1991), Bill D. (1992), Chadwick and Ward (1987),* Comesky et al (1991) and many others have attempted to measure service quality in higher education, but it is still a challenging job to find a suitable measuring tool. *Ewell (1993)* suggested that there may be a danger in a strict application of the tenets of consumer service to students if the only recognized bottom line is student's satisfaction. *Astin (1975)* expressed his view that students' perception of his/her experience may be one of the most critical elements of education.

One of the foundational approaches to identifying service quality parameters has come from the developers of SERVQUAL instrument and the creator of Gaps theory approach to Service quality *(Parasuraman et al, 1991),* who have identified six dimensions of service quality which are tabulated as below in Table 1. The present work is aimed at finding the reliability of the questionnaire developed for measuring the service quality of higher education providing universities. The questionnaire, I-SERVQUAL, has been developed by modifying the parameters ensconced in the SERVQUAL to suit the needs of the survey to be conducted for the purpose. The modified parameters have been put up alongside those identified by *Parasuraman et al (1991)* in Table 1.

Table 1 : Dimensions of Service Quality

SERVQUAL		I-SERVQUAL	
Parameter	Meaning	Modified Parameter	Meaning
Faculty	Specialization/Experience	Faculty	Quality of service provided by the faculty members of the university
Tangibles	Appearance/Physical facilities	Facilities	Availability of facilities for academic, Co and extra-curricular activities, sports etc.,

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		Tangibles	Quality of facilities and infrastructures on campus
Reliability	Ability to perform promised services.	Reliability	Curriculum and Services as put-up in the prospectus/website are delivered or not
Responsiveness	Willingness to help customers	Delivery	Concerns whether equitable service is provided to all without bias.
Assurance	Trust & confidence		
Empathy	Caring attitude	Attitude	Concerns with the attitude of the administrative staff and faculty

III. Research Methodology

For determining the dimensions affecting the service quality of the academic institutions, the original SERVQUAL Model of *Parasuraman et al (1991)* was modified completely, making it suitable for universities/educational institutes. The modified and refined model had 55 items tentatively distributed to cover the six main dimensions of Faculty, Facilities, Tangibles, Attitude, Reliability and Delivery. The service quality as perceived by the students was measured on a five point Likret Scale ranging from 'Strongly disagree' to 'Strongly agree' as a response to the statements in the questionnaire. In order to distinguish between the revised SERVQUAL and the version customized for this study, the latter has been referred to as I-SERVQUAL.

a) Sampling

As suggested by Deming consumers determine quality. Consequently service quality should be researched studying customers' preferences and needs. Thus, the unit of analysis of the present study was the consumers, in this case, the PG students studying in various universities of Punjab. The PG students were chosen for the study, as they have already studied for their undergraduate program in the same or another institute and thus would be better equipped to respond to the items of the questionnaire. The survey was conducted for the PG students, studying in various disciplines, on the campus of the three Universities of Punjab, each belonging to a different category. Of the participating universities considered, one was a full-fledged government university, the second one a deemed-to-be-university and the third participating university was a private university established under the state act.

A self-administered, structured questionnaire was used to collect the data from the respondents, who were the students studying in final year at the above-mentioned campuses in various PG courses. The combined student strength of the above three universities, enrolled in various PG courses, would be approximately 10,000, and for a population of 10,000 a sample size of 370 is appropriate according to *Krejcie & Morgan (1970).* Thus, of the 10,000 students, the survey questionnaire responses were obtained from 600 students (200 students of each University). The questionnaire for the study had six items related to the respondent's identification data, and included fifty items qualifying the proposed six dimensions of service quality. The specific items of the questionnaire are depicted in Table 2.

Table 2: Service Quality Dimensional Items

CODES	DIMENSIONAL ITEMS
V1	University faculty shows interest to solve students' problems
V2	University faculty is well qualified and knowledgeable
V3	University faculty gives confidence and motivation to students.
V4	The faculty provides correct answers to students' questions.
V5	Faculty is never too busy to attend to students' problems and is available beyond office timings i.e. easily accessible.
V6	University faculty inculcates interest in the subject among students.
V7	The faculty is immaculately dressed befitting their status.
V8	The faculty provides prompt and timely service to you
V9	Faculty communicates in a language that you understand.
V10	Examination papers are evaluated without bias and in time
V11	The university library is easily accessible to students
V12	The university library is modern and well stocked with access to print and e – journals
V13	University Hostels are comfortable to stay in with modern and appealing facilities
V14	Food/Beverages served in Hostels are as per students liking
V15	University hostels have internet connectivity and other facilities like Gymnasium, common room etc.
V16	The university has a proper arrangement to give medical aid to students in emergency
V17	University canteens are hygienic and have a wide range of servings of food and beverages.

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V18	University genuinely helps students in placements and has a dedicated placement cell.
V19	University arranges recreational activities (Co and extra-curricular) for students around the year
V20	University arranges sports activities for students around the year
V21	The university has sufficient transportation facilities
V22	Accurate and secure student records are maintained
V23	Specific opportunities and support for you to attain your personal goals are provided in the form of finishing schools etc.
V24	Complete and accurate information is provided to you in good time.
V25	The university has a student counselling cell to cater to the needs of weak students
V26	The university has excellent infrastructure like buildings, roads etc.
V27	The university has excellent infrastructure for sports and games
V28	The university has excellent infrastructure for organizing cultural and technical festivals
V29	University classrooms are well lit and are modern with appealing fixtures
V30	University classrooms are well equipped with projection systems
V31	University laboratories are well lit and are modern and well equipped to handle classes
V32	The university has well equipped computer labs with requisite and licensed software
V33	A full range of up-to-date physical facilities and equipment are provided in the laboratories
V34	University academic staff is easily available to students for guidance
V35	The administrative staff is courteous to students and willing to solve their problems
V36	The university maintains cleanliness at the campus
V37	Teachers and students communicate well in the classroom
V38	Your complaints are constructively handled
V39	A flexible service is provided to meet your individual needs.
V40	Faculty/Staff reassures you in terms of your personal anxieties, concerns and problems.
V41	Staff are sympathetic to your individual needs, while respecting your privacy
V42	You feel safe under the care of the staff
V43	Staff respect your confidences and feelings
V44	The behavior of the staff makes you feel that you can trust them and have confidence in them.
V45	The teaching and learning process is up-to-date as promised by the university
V46	Students feel safe and secure in the university
V47	University curriculum is need based and useful for future job
V48	The behavior of the staff makes you feel that you can trust them and have confidence in them
V49	University shows interest in solving problems
V50	The required level of service is delivered, with clearly stated terms and conditions
V51	The full range of services is delivered to meet your changing needs.
V52	Appropriate services are delivered as promised
V53	A dependable service which does not vary over time is provided
V54	An equitable service is delivered to individual students, as well as groups of students
V55	The interpersonal skills are adequately addressed in the curriculum

The questionnaire was pre-tested with a sample of thirty seven PG students selected purposively. *Fink (2003b in Saunders, Lewis, Thornhill, 2007)* had suggested that a minimum of ten respondents was sufficient for pre-testing of the questionnaire, and the same was kept as the basis for the pre-testing size of the sample. After carrying out the pretesting, the questionnaire was provided to the respondent population of the three universities (200 PG students each) through personal contact by the research assistants.

b) Method of analysis

Factor Analysis (FA) is a data reduction technique that uses correlations between data variables. It assumes that some underlying factors exist that explain the correlations or the interrelationships among observed variables *(Chatfield and Collins 1992).* It had been used extensively by various researchers in the varying fields of economics, marketing, sociology, and education *(Nimako et al, 2012; Bollen 1989; Doll et al 1994; Li et al 2002).* The statistical data analysis for the present study of FA followed the approach similar to the one used by *April & Pather (2008).* The steps involved herein included Exploratory Factor Analysis (EFA) and subsequent regrouping of items on the basis of the analysis.

EFA is a method that aims at extracting maximum variance from the dataset within each factor *(Chatfield and Collins, 1992).* In the empirical work of *Costello and Osborne (2005)* on best practices in exploratory factor analysis, it was strongly recommended to use Principal Component Analysis (PCA) because of its potency of revealing the underlying structure of the latent variables with an appropriate

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rotation method. In rotation methods, it has generally been seen that, ML (Maximum Likelihood) or PAF (Principal Axis Factoring) gave the best results, depending on whether the data are generally normally-distributed or significantly non-normal, respectively (2005: 2). Thus, for the present study ML extraction method with Promax with Kaiser Normalization rotation method was chosen for EFA. This was performed on all the fifty-five items (Table 2). On the criteria for selecting factor loading, generally factor loading above 0.6 is considered high while factor loading greater than or equal to 0.3 is considered moderately high *(Klien, 2005).* Therefore the cut-off for analysing factor loading was 0.50 ± 0.03.

IV. Analysis of Data

The data pertaining to the respondents was examined for demographic and other academic details. The factor analysis and item/scale reliability were carried out for the responses to the dimensional items using SPSS22 software. The details are provided in the succeeding sub-sections.

a) Respondent Characteristics

The characteristics of the students who responded to the I-SERVQUAL questionnaire are presented in Table 3. In terms of the gender, 58.67% of the students who participated in the survey were males and remaining 41.33% were females.

73% of the respondents were less than 25 years of age, whereas, only 27% of them belonged to an age group of more than 25 years, implying that most of the respondents were fairly young.

Table 3 : Characteristics of Respondents

		Frequency	Percentage
Gender	Male	325	58.67
	Female	275	41.33
Age	Less than or equal to 25 years	438	73.00
	More than 25 years	162	27.00
Postgraduate Course of study	Engineering	200	33.33
	Science	200	33.33
	Management	200	33.33
Academic performance (Marks)	Less than 60%	98	16.33
	Between 60 to 75%	307	51.17
	Between 75 to 85%	131	21.83
	More than 85%	64	10.67

From the point of view of the course of study undertaken by the respondents, an equal percentage of students (33.33%) were doing their post-graduation in engineering, science and management, respectively. In terms of the academic performance of the students, who were in the final year of their respective program, it can be observed that majority of them, 51.17% had an average percentage score till their pre-final year term. Only 16.33% of the respondents were having below average academic performance and more than 32% of the respondents had performed admirably in their respective academic discipline. This implies that the respondent's data is slightly skewed towards students with above average performance.

V. Discussion of Results

The pre-testing analysis of the data, sample of thirty seven PG students selected purposively, showed a very high value, 0.958, for the Kaiser-Meyer-Olkin Measure, thereby indicating the suitability of the research data for structure detection, i.e. the proportion of variance in the items that might be caused by underlying factors. Thus, generally the data were found to be useful for factor analysis. This was confirmed further by the significance of the Bartlett's test of sphericity tests (X2: 5259.079, df: 465.000, Sig.: 0.000) indicating that the variables were not unrelated and therefore suitable for structure detection.

After examining the suitability of the questionnaire through pre-testing, the responses to all the fifty five items were obtained from a total of 600 PG students spread across the three selected universities. Exploratory factor analysis was carried out for the data so obtained. The Tables 4 (a) and 4 (b), showing the pattern matrix and structure matrix, emerged after factor analysis. As can be observed from the tables, a total of four factors or components emerged and 24 items, out of the fifty-five measurement indicators, got eliminated. All the eliminated measurement indicators had a corrected item-total correlation below 0.50. As a result, 31 measurement indicators of service quality were retained for subsequent analysis. On careful examination of the data it could be seen that most of the items pertaining to faculty, tangibles and delivery were the least affected and thus, are the main components which affect the service quality being offered by higher education universities.

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a) Regrouping of items and discussion

As can be observed from the Table 5, the emerged items could be conveniently grouped into four dimensions.

Looking at the regrouped items of the emerged Factor 1 after EFA, it was found safe to label 15 of the 31 retained items (V44, V42, V43, V1, V37, V5, V4, V8, V10, V9, V48, V3, V41, V39, V40) under the dimension of 'Faculty and Staff Behaviour', as all the items intrinsically related to that aspect only.

The emerged Factor 2 contained seven items (V26, V28, V27, V29, V36, V30, V31) which could be categorized under the 'Tangibles' dimension of service quality.

On careful examination of the emerged Factor 3, which had six items (V53, V54, V52, V55, V51, V50), it was discovered that these items relate to the 'Delivery' aspect of service quality.

The emerged Factor 4 had only three items (V14, V13, V15), which clearly identified with the 'Facilities' aspect of the service quality of the HEI's.

Table 4 : (a) Pattern Matrix

Factor	1	2	3	4
Cronbach's Alpha	0.95	0.888	0.925	0.841
Item Loading				
V44	0.998			
V42	0.875			
V43	0.865			
V1	0.678			
V37	0.667			
V5	0.649			
V4	0.644			
V8	0.625			
V10	0.621			
V9	0.605			
V48	0.602			
V3	0.600			
V41	0.569			
V39	0.556			
V40	0.474			
V26		0.891		
V28		0.865		
V27		0.785		
V29		0.592		
V36		0.575		
V30		0.565		
V31		0.445		
V53			0.863	
V54			0.837	
V52			0.735	
V55			0.729	
V51			0.514	
V50			0.454	
V14				0.882
V13				0.788
V15				0.751

Extraction method: Maximum Likelihood. Rotation method: Promax with Kaiser Normalization Rotation converged In 7 iterations

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Table 4 : (b) Factor Analysis

Structure Matrix									
Item Loading	Factor				Item Loading	Factor			
	1	2	3	4		1	2	3	4
V1	0.706*	0.500	0.548		V36	0.558	0.699*	0.525	
V3	0.719*	0.532	0.594	0.433	V37	0.747*	0.596	0.583	
V4	0.738*	0.530	0.616		V39	0.780*	0.531	0.716	0.541
V5	0.678*		0.564	0.439	V40	0.735*	0.480	0.720	0.518
V8	0.731*	0.508	0.599	0.489	V41	0.768*	0.519	0.705	0.496
V9	0.682*	0.646	0.462		V42	0.836*	0.584	0.496	0.489
V10	0.574*		0.439		V43	0.855*	0.574	0.645	0.500
V13	0.467		0.461	0.790*	V44	0.831*	0.503	0.579	0.413
V14	0.435		0.512	0.857*	V48	0.806*	0.617	0.709	0.458
V15	0.480	0.455	0.441	0.766*	V50	0.754	0.628	0.792*	0.573
V26	0.468	0.793*	0.401		V51	0.727	0.596	0.797*	0.581
V27	0.476	0.762*	0.491		V52	0.674	0.544	0.820*	0.483
V28	0.501	0.813*	0.482		V53	0.631	0.479	0.842*	0.520
V29	0.532	0.689*	0.487	0.492	V54	0.609	0.507	0.811*	0.453
V30	0.579	0.692*	0.464	0.405	V55	0.663	0.559	0.803*	0.432
V31	0.576	0.659*	0.602	0.446					

Extraction method: Maximum Likelihood. Rotation method: Promax with Kaiser Normalization

** Retained factor loadings*

Table 5 : Regrouping of the Components into Four Groups

Emerged Factor	Items retained	New Dimension
1 (15 items)	V44, V42, V43, V1, V37, V5, V4, V8, V10, V9, V48, V3, V41, V39, V40	Faculty and Staff behaviour
2 (7 items)	V26, V28, V27, V29, V36, V30, V31	Tangibles
3 (6 items)	V53, V54, V52, V55, V51, V50	Delivery
4 (3 items)	V14, V13, V15	Facilities

Emerged 'Factor 1' had a good mix of the items related to the behaviour and personality of the Faculty and Staff members, with whom the PG students interact very frequently. The behavioural aspects were very prominent in all the items of this dimension. It included items unequivocally associated to the day-to-day interactions faculty and staff members have with the students, like: How much the University faculty shows interest to solve student's problems (V1); How much confidence and motivation does the university faculty offers (V3); Does the faculty provide correct answers to student's questions (V4); Is the faculty easily accessible (V5); Does the faculty provide prompt and timely service (V8); Does the faculty communicates in a language that student's understand (V9); and Does the faculty evaluates the examination papers without bias and in time (V10). The remaining items were also found to mirror the behavioural aspects of the faculty and staff, which included: Do the teachers and students communicate well in classroom (V37); Are the faculty and staff members flexible in providing the service desired (V39); Do the faculty/staff members reassure student's in terms of their personal anxieties, concerns and problems (V40); Are the faculty and staff members sympathetic to individual needs, while respecting privacy of students (V41); Do students feel safe under the care of faculty and staff (V42); Do the faculty/staff members respect confidence and feelings of students (V43) and Does the behaviour of staff makes students feel that they can trust them and have confidence in them (V44). The V48 item in this group was similar to the V44 item. As all these items correlated the behavioural aspects of the faculty and staff members, thus the most appropriate label for this was considered to be 'Faculty and Staff Behaviour'.

Emerged 'Factor 2' contained seven items which very well allied to the Tangibles dimension of service quality. These items refered to the infrastructure facilities on the university campuses like, buildings and roads (V26), infrastructure for sports and games (V27), infrastructure for organizing cultural and technical festivals (V28), well lit modern class rooms with appealing fixtures and equipped projection systems (V29 & V30), well lit and modern laboratories well equipped to handle classes (V31), and cleanliness on campus (V36).

Emerged 'Factor 3' had six items which relate to the 'Delivery' aspect of the services provided by the

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university. This dimension included items like, Whether required level of service is delivered, with clearly stated terms and conditions (V50), Is a full range of service delivered to meet the changing needs (V51), Are appropriate services delivered as promised (V52), Is dependable service provided (V53), Is equitable service delivered to the students (V54), Are inter-personal skills adequately addressed in the curriculum (V55).

Emerged 'Factor 4' had only three items which belonged to the 'Facilities' dimension. This included items like, Whether university hostels are modern and have appealing facilities and are comfortable to stay in (V13), Are food and beverages served to students liking (V14), Do the university hostels have internet connectivity and other facilities like Gymnasium, common room etc. (V15).

Thus, from the above discussion, it could be concluded that, as perceived by the PG students, the most important factor of service quality which emerged after EFA is the 'Faculty and Staff Behaviour', which has

b) Goodness of fit and reliability of the model

The advantage of using ML method of extraction was that it provided the goodness of fit statistics for the factor model, very similar to Confirmatory factor analysis. As could be observed from the Chi-square, goodness of fit test was non-significant, indicating that there was a difference in perception amongst the groups included in this study. The alternate measure for evaluating the goodness of the fit was CMIN/Df value which is the ratio of Chi-Square statistics and degree of freedom. The value of CMIN/Df should lie between 1 and 3, and lower the value, better the model is. The calculated CMIN/Df value for the model was 1.59 which exhibits adequate factor model fit, as could be observed from the statistic given in Table 6.

Table 6 : Goodness-of-Fit Test

Chi-Square	df	Sig.	CMIN/Df	Recommended
552.260	347	.000	1.59	Between 1 and 3

Table 7: Relaibility Statistics

Factor Label	Cronbach's Alpha	Specification
Faculty and Staff behaviour	0.950	Reflective
Tangibles	0.888	Reflective
Delivery	0.925	Reflective
Facilities	0.841	Reflective

Reliability refers to the ability of the instrument used to deliver consistent results every time it is applied. Statistically, a Cronbach alpha measurement could be used to determine the reliability of the instrument used. A Cronbach alpha value of more than or equal to 0.7 *(Hair et al., 2010)*, if achieved signifies a very high level of reliability. The Cronbach's alphas for the extracted factors are shown in the Table 7, along with their labels and specification. All the alphas were above 0.85, which was an indicator of a very high level of reliability. The factors were all reflective because their indicators were highly correlated and are largely interchangeable *(Jarvis et al. 2003).*

Thus, the four factors, which have emerged from the EFA were Faculty and staff behaviour, Tangibles, Delivery and Facilities. These are very much in line with the earlier studies which have been carried out for evaluating the service quality dimensions in higher education institutes. *Palli & Mamilla (2012),* found out that students at SV University, Tirupati, were satisfied with services in terms of their reliability, assurance, tangibility, and empathy but not much satisfied with responsiveness. The study revealed that the respondents who had studied self-supporting course were more satisfied than the respondents who had studied different courses. *Sproule (2000),* also found that teachers' ability, excellence, coordination and reasonability greatly influenced students' class performance, and these items too form a major component of the service quality dimensions of HEI's as had also been found in the present study. *Navarro et al. (2005)* also mentioned that students evaluate the quality of organization on the basis of tangibility (teachers), reliability and responsiveness (methods of teaching) and management of the institution and these factors have direct influence on the level of students' satisfaction (opinions).

VI. Conclusions

It is well known that service quality is based on multiple dimensions and most of the studies on service quality are based on SERVQUAL developed by *Parasuraman et al (1985),* and little attention has been given to the use of alternative models of service quality. *Nimako et al (2012),* in one such study, had proposed a framework of latent factors that were critical for understanding the service quality in mobile telephony industry in Ghana. They modified the SERVQUAL model to fit the mobile telephony context and used EFA

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approach to identify the dimensions that best define the service quality.

This research paper, herein, is an attempt to identify the service quality dimensions that are best suited to the service provided by the HEI's in Punjab state of India, as perceived by the post-graduate students.

The four emerged dimensions with thirty one items, being Faculty and Staff Behaviour, Tangibles, Delivery and Facilities could be used by the higher educational institutes as critical factors in evaluating their service quality. It is also concluded that alternative SQ models, like the one proposed in the paper (I-SERVQUAL), aside the popular SERVQUAL model could be useful in determining the SQ dimensions relevant to the HEI's. The results of the study have found out four major dimensions, which are necessary for maintaining a high level of service quality in HEI's. These are similar to the results of the earlier studies carried out by *Palli & Mamilla (2012), Sproule (2000), Navarro et al. (2005)* etc. Thus, as a major outcome, in context with the higher educational institutes in the country, this paper does provide an extensive block of thirty one items; split into four dimensions, for assessing the service quality of HEI's.

VII. Limitations of the Study

There are a number of limitations to this research. First, the constraint of our data collection, which has been gathered from only three universities of Punjab, limits the scope of validity and reliability of data beyond the specific circumstance that is the subject of our analysis. Second, the findings are limited to India and about Indian Higher Education System, so may not be generalizable to other forms of courses offered and/or in other countries. However, we do believe that the outcomes of this research can be applied to other countries and it will be helpful for those countries as well.

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- One should avoid outdated words.

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References

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1. Choosing the topic: In most cases, the topic is searched by the interest of author but it can be also suggested by the guides. You can have several topics and then you can judge that in which topic or subject you are finding yourself most comfortable. This can be done by asking several questions to yourself, like Will I be able to carry our search in this area? Will I find all necessary recourses to accomplish the search? Will I be able to find all information in this field area? If the answer of these types of questions will be "Yes" then you can choose that topic. In most of the cases, you may have to conduct the surveys and have to visit several places because this field is related to Computer Science and Information Technology. Also, you may have to do a lot of work to find all rise and falls regarding the various data of that subject. Sometimes, detailed information plays a vital role, instead of short information.

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15. Use of direct quotes: When you do research relevant to literature, history or current affairs then use of quotes become essential but if study is relevant to science then use of quotes is not preferable.

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18. Pick a good study spot: To do your research studies always try to pick a spot, which is quiet. Every spot is not for studies. Spot that suits you choose it and proceed further.

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20. Use good quality grammar: Always use a good quality grammar and use words that will throw positive impact on evaluator. Use of good quality grammar does not mean to use tough words, that for each word the evaluator has to go through dictionary. Do not start sentence with a conjunction. Do not fragment sentences. Eliminate one-word sentences. Ignore passive voice. Do not ever use a big word when a diminutive one would suffice. Verbs have to be in agreement with their subjects. Prepositions are not expressions to finish sentences with. It is incorrect to ever divide an infinitive. Avoid clichés like the disease. Also, always shun irritating alliteration. Use language that is simple and straight forward. put together a neat summary.

21. Arrangement of information: Each section of the main body should start with an opening sentence and there should be a changeover at the end of the section. Give only valid and powerful arguments to your topic. You may also maintain your arguments with records.

22. Never start in last minute: Always start at right time and give enough time to research work. Leaving everything to the last minute will degrade your paper and spoil your work.

23. Multitasking in research is not good: Doing several things at the same time proves bad habit in case of research activity. Research is an area, where everything has a particular time slot. Divide your research work in parts and do particular part in particular time slot.

24. Never copy others' work: Never copy others' work and give it your name because if evaluator has seen it anywhere you will be in trouble.

25. Take proper rest and food: No matter how many hours you spend for your research activity, if you are not taking care of your health then all your efforts will be in vain. For a quality research, study is must, and this can be done by taking proper rest and food.

26. Go for seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

27. Refresh your mind after intervals: Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

28. Make colleagues: Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research.

29. Think technically: Always think technically. If anything happens, then search its reasons, its benefits, and demerits.

30. Think and then print: When you will go to print your paper, notice that tables are not be split, headings are not detached from their descriptions, and page sequence is maintained.

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33. Report concluded results: Use concluded results. From raw data, filter the results and then conclude your studies based on measurements and observations taken. Significant figures and appropriate number of decimal places should be used. Parenthetical remarks are prohibitive. Proofread carefully at final stage. In the end give outline to your arguments. Spot out perspectives of further study of this subject. Justify your conclusion by at the bottom of them with sufficient justifications and examples.

34. After conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print to the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects in your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form, which is presented in the guidelines using the template.
- Please note the criterion for grading the final paper by peer-reviewers.

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A purpose of organizing a research paper is to let people to interpret your effort selectively. The journal requires the following sections, submitted in the order listed, each section to start on a new page.

The introduction will be compiled from reference matter and will reflect the design processes or outline of basis that direct you to make study. As you will carry out the process of study, the method and process section will be constructed as like that. The result segment will show related statistics in nearly sequential order and will direct the reviewers next to the similar intellectual paths throughout the data that you took to carry out your study. The discussion section will provide understanding of the data and projections as to the implication of the results. The use of good quality references all through the paper will give the effort trustworthiness by representing an alertness of prior workings.

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- Separating a table/chart or figure - impound each figure/table to a single page
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In every sections of your document

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· Keep on paying attention on the research topic of the paper

· Use paragraphs to split each significant point (excluding for the abstract)

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· Present your points in sound order

· Use present tense to report well accepted

· Use past tense to describe specific results

· Shun familiar wording, don't address the reviewer directly, and don't use slang, slang language, or superlatives

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The summary should be two hundred words or less. It should briefly and clearly explain the key findings reported in the manuscript--must have precise statistics. It should not have abnormal acronyms or abbreviations. It should be logical in itself. Shun citing references at this point.

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- Fundamental goal
- To the point depiction of the research
- Consequences, including definite statistics - if the consequences are quantitative in nature, account quantitative data; results of any numerical analysis should be reported
- Significant conclusions or questions that track from the research(es)

Approach:

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- Center on shortening results - bound background information to a verdict or two, if completely necessary
- What you account in an conceptual must be regular with what you reported in the manuscript
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- Present a justification. Status your particular theory (es) or aim(s), and describe the logic that led you to choose them.
- Very for a short time explain the tentative propose and how it skilled the declared objectives.

Approach:

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- Shape the theory/purpose specifically - do not take a broad view.
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- Explain materials individually only if the study is so complex that it saves liberty this way.
- Embrace particular materials, and any tools or provisions that are not frequently found in laboratories.
- Do not take in frequently found.
- If use of a definite type of tools.
- Materials may be reported in a part section or else they may be recognized along with your measures.

Methods:

- Report the method (not particulars of each process that engaged the same methodology)
- Describe the method entirely
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures
- Simplify - details how procedures were completed not how they were exclusively performed on a particular day.
- If well known procedures were used, account the procedure by name, possibly with reference, and that's all.

Approach:

- It is embarrassed or not possible to use vigorous voice when documenting methods with no using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result when script up the methods most authors use third person passive voice.
- Use standard style in this and in every other part of the paper - avoid familiar lists, and use full sentences.

What to keep away from

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- Skip all descriptive information and surroundings - save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part a entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently.You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.

Content

- Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables.
- In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation an exacting study.
- Explain results of control experiments and comprise remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or in manuscript form.

What to stay away from

- Do not discuss or infer your outcome, report surroundings information, or try to explain anything.
- Not at all, take in raw data or intermediate calculations in a research manuscript.
- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

Approach

- As forever, use past tense when you submit to your results, and put the whole thing in a reasonable order.
- Put figures and tables, appropriately numbered, in order at the end of the report
- If you desire, you may place your figures and tables properly within the text of your results part.

Figures and tables

- If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts
- Despite of position, each figure must be numbered one after the other and complete with subtitle
- In spite of position, each table must be titled, numbered one after the other and complete with heading
- All figure and table must be adequately complete that it could situate on its own, divide from text

Discussion:

The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a argument should be. Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly described. Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved with prospect, and let it drop at that.

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."
- Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work
- You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea.
- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

- When you refer to information, differentiate data generated by your own studies from available information
- Submit to work done by specific persons (including you) in past tense.
- Submit to generally acknowledged facts and main beliefs in present tense.

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Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
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Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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