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The Productivity of SMEs in Mexico and Their Effect on Innovation, Using the Survey on Information Technologies and Communications, 2013 (ENTIC)

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Abstract

Small and medium enterprises (SMEs) in Mexico represent one of the main entities of economic activity that supports the bulk of the Mexican population; using statistics as a fundamental tool for conducting studies in the economic, natural, health sciences, among others, allows us to have proactive foundations for decision making within companies by senior executives and in the field public by officials responsible for promoting the growth of the industry in our country. This research tries to represent, under a statistical scheme, the use and disposition of Information and Communication Technologies (ICTs) as a tool to increase average productivity levels within companies and under the Cobb production function. -Douglas determines the ICT impact.

Keywords: SMEs, Innovation, Productivity, ICTs.

1. Introduction

In Mexico, the economic effects of the economic crisis suffered in 2008, as a result of excessive spending by Americans due to low interest rates, triggering an imbalance in the mortgage sector, is identified as the main cause of this crisis. For the country, the effects were evidenced in the real economy when our exports and remittances from the United States contracted, together with the reduction of confidence in the Mexican economy by entities that promoted the increase in R & D (Research and Development). From these consequences the economy seems to have consolidated its stagnation in different areas of the economic activity, such as: mining,
electricity, construction, manufacturing, commerce, services, transportation and communications. These activities represent the sectors that mostly absorb the Economically Active Population (PEA: Population aged 15 and over) through small and medium enterprises (SMEs).

With regard to the income from oil exports for December 2015, these prices are down, due to pressure from the member countries of the Organization of Petroleum Exporting Countries (OPEC) to promote the supply of crude oil. If this trend continues for the fourth quarter of 2016, an oil surplus is expected (El Economista, 2015). All these factors that limit the dynamism of the Mexican economy cause the deepening of the weakening of economic activities, negatively impacting the activities carried out by SMEs in the quest to absorb as much of the EAP as possible.

One of the challenges for Mexican companies is to be at the forefront of current technological systems. Mexico as a developing economy is subject to the imitation of technologies from central countries such as the United States, Germany, Japan, France and the United Kingdom (G5). As Myro points out in 2010: in economies with a low level of development, [...] technical progress should be more based on imitation than on one’s own technological effort, so that cases such as Mexico’s policies on technological innovation should focus on imitation to achieve the technical progress sought by SMEs in our country.

This is how Mexico bases its innovative activity through reactive strategies that follow and imitate organizations. Pioneer nations such as Germany, Japan, the United States, among other developed nations, follow reactive strategies, since they are pioneers in technological innovations. Among the main results that Mexico has in terms of Science, Technology and Industry that was carried out by the Organization for Economic Cooperation and Development (OECD) in 2013, are summarized those:

A. Mexico suffers the consequences of a weak innovation environment, and investment in science and technology remains at a low level by OECD standards.

B. Among the main obstacles are: patterns of industrial specialization, high prevalence of micro-enterprises, skill gaps and an ICT infrastructure insufficiently developed and high cost.

C. Linkages between the research base and the underdeveloped economy, which translates into few scientific publications (OECD, 2013).

These characteristics, which currently prevail in conjunction with the low quality of educational services, make it difficult to build a solid technological base in the much sought-after technical progress, even though imitation. In this same report, it is mentioned that Mexico also faces a series of challenges due to the weaknesses of its ICT infrastructure, which include low penetration of broadband (both fixed and wireless), low average speeds of broadband connection and high prices (OECD, 2013).

Information and Communication Technologies (ICTs) play in business logistics a fundamental role in the praxis of economic subjects. Because of the importance that these tools have among the relations of the global economies, keeping them up to date is fundamental for the Mexican capitalist system.

The following pages of the document describe the general aspects of the methodology used, the statistical design in which the basic statistics are calculated, at first about the stratification carried out by INEGI, followed by the segmentation proposed in this research. At the end of the
methodology section establishes the relevance of using the average productivity and the Cobb-Douglas production model.

In the results section, the general statistics for the stratification of INEGI and the proposal formed by small, large and medium-sized companies are presented, the description of the type of activity they perform, the distribution of their income, the items to the that allocate their investment. This section also describes the use of traditional communication media, as well as the impacts of ICTs. In this same section we present the impacts of ICTs such as email, the Internet, social networks and the website in aspects of competitiveness. The results of the two regression models are also presented. Finally, in the last section, the conclusions and a series of recommendations are presented.

2. Background of the problem

In the reconfiguration of productive paradigms, SMEs use sciences and techniques for the reconstruction of new technologies. Technology is understood as the sum of knowledge about the means and methods of production of goods and services (Luter, 1998), this same technology plays an important role in economic theory.

To define innovation, it is necessary to differentiate between invention and innovation (Galindo, 2012 pp.53). Invention as the idea of a person about a product or process and innovation as the first attempt to put it into practice. Galindo (2012) also considers that for an invention to become an innovation, the company must combine different elements, such as: knowledge, skills, abilities and resources.

In neoclassical economic theory, innovations are understood as exogenous phenomena in the equation that seeks the equilibrium between supply and demand while the current of the positive school that interprets the economy as a dynamic system considers innovation as a variable endogenous (Hernández, 2009). The positive theory makes reference that although the human being could not create the matter, if it can create his utility, to increase it or to diminish it, in this it consists precisely the innovation. With this, it assumes the importance of the reasoning of the human being, the capacity to invent and to create new forms from subjects.

Schumpeter being one of the modern authors, distinguishes the innovations themselves and technical innovations in the studies on growth and economic development. Hernández, (2009) distinguishes these two types of innovations, the first referring to the systemic search for general explanations of a phenomenon and technical innovation as an original solution resulting from the synthesis of information about needs or desires, and information about the technical means by which they can be satisfied (Utterback, 1971, p.77 in Hernández, 2009). This appreciation previously noted, where the human being seeks welfare through the least effort, the invention of the wheel, the steam engine and the innumerable instruments we use in our lives reflect the technical progress we have made to meet "n" human needs. Innovation is therefore an economic phenomenon that serves to create wealth and satisfy needs.

In this context, Hernández (2009) states that the variables that explain innovation are: entrepreneurial profits or the reduction of production costs, intentional research and development efforts, accumulation of human capital, exploitation of new inventions or in the application of mature technologies or new uses. For the company innovation is an important factor from any point in which it is considered, since it frees the market pressure in the creation or improvement of new products. Many companies that integrate markets base their innovations on scientific knowledge and technological developments measuring the innovation in number of patents for a certain period.
Hernández, 2009 indicates that independent variables have to do with intensity or investment in research and development (Mansfield, 1963, Koeller, 1995, Gatti, 1998); with the provision of human capital according to the proportion of scientists and engineers in relation to company personnel, as well as the number of workers with the ability to execute changes or learn new skills (Koeller, 1995, Gatti, 1998, Afuah, 2002).

Companies being the primary entities of economic activities, innovation is a competitive advantage that allows them to extend their life in the market. Innovation and technological change serve each other so that the company that produces them obtains better returns. Cantú, 2006 classifies the innovations according to the magnitude of the change they imply, mentioning the following typology (Cantú, 2006 in Dussage, Hart and Ramanantsoa, 1992, p.14-15):

A. Incremental: the articulation between concepts and components or architecture of the product is not changed, only some of its components or concepts are reinforced or improved.

B. Radical: both the architecture and the components are altered, in fact it is a new product.

C. Modular: the modular components of a product are radically changed but its architecture remains unchanged; the change from analogue to digital telephones is an example of this type of technological innovation.

D. Architectural: modifies the way in which the components and concepts of the product are articulated but the components and concepts only reinforce or remain without change, examples of these changes occur in personal computers and are not easily identifiable by consumers because they are at the system level.

In this way, innovations are transformations made by the human being of the goods provided by nature with the purpose of facilitating the activities carried out and obtaining some benefits when exchanging them with other individuals, not limited to exclusively technological concepts, but rather to find also innovations in the economic, social, organizational, strategic areas of the companies.

The PyMEs are the economic units by excellence that train the individuals, that when realizing a physical activity exchange this effort for an economic remuneration, this in order to solve their physical needs and those of their dependents. Since small and medium-sized companies are responsible for absorbing this population stratum, it is necessary to analyze the use of ICTs as an alternative to growth. That is why one of the main problems faced by SMEs is the lag in technological equipment that causes competitive asymmetries and disadvantages compared to foreign companies established in our country.

The process of equipping companies in their different dimensions when settling in defined geographical areas causes economic growth in the region. The study of this process is necessary to determine the effects it has on human capital, both in the average productivity, and the effect of ICTs on production levels in the company.

This investigation seeks to analyze this process and the influence on the living conditions of the country. Companies in the country represent a great source of employment that encourage economic growth and social welfare. Thus, statistics supports the operational alternatives in the decision making of the company in order to promote growth and with it the living conditions of workers.
3. Review of the empirical literature

To solve the changes that our global environment demands of different societies is through knowledge, the different economic, political and social facts rethink the solution of problems through new and sustainable techniques. The promotion and development that governments make regarding managing knowledge is directly linked to the work of enterprises, to increase profitability, generate regional growth, improve living conditions and other promoting environmental care.

In this quest for knowledge management, companies create new and better products, improve their production systems, utopian looking solving major social and economic problems such as health, education, poverty, quality of life, etc., claiming that these new improvements do not compromise environmental conditions. In this way, companies, universities and the government are responsible for responding with solutions, using different strategies, mechanisms and policies that contribute to the improvement of current conditions. The conception of economy, the knowledge that is currently developed and involved in the tasks of companies to achieve higher returns, has to do with analyzing the situation, setting the objectives and finally optimizing knowledge.

Among the main features of this global knowledge economy, as stated by ECLAC, in its report "Innovating to grow", it must be:

A. Greater codification of knowledge.
B. A Closer relationship between technology and science, with higher innovation rates and shorter product life cycles.
C. A Growing importance of innovation in GDP growth, as well as education and continuous learning.
D. Greater investment in intangible elements (research and development, education, software, among others) than in fixed capital, and
E. Substantial changes in the demand for qualifications in the labor market (Figueroa, 2015)

These characteristics that foster the emergence of technological innovations imply a process to reach a final product or technological improvement. The process to follow can be clearly understood through the following funnel, (Figueroa, 2015).

![Figure 1. Funnel of innovation. Source: Oxford English Dictionary, 2010 (Figueroa, 2015)](image_url)
In this funnel, all ideas are filtered by ideas that are feasibly applied and that respond to a market need, so its implementation results in new products, services, processes and business processes. The importance of working under this scheme is reflected in the decrease in costs of the companies. Finally, to ensure the success of any technological innovation as Figueroa (2015) mentions, a social need, social resources and a receptive social concept have to be combined.

4. Research method

A. General aspects

The use of Information and Communication Technologies (ICTs) by companies in our country has seen considerable growth in recent years. The use of computers, landlines, mobile phones, internet, among other technological resources, has become essential for the operation of any company.

The following pages analyze the situation for 2013 of the use of ICTs by companies with a staff of more than 10 people. These companies are carrying out activities such as: mining, electricity, construction, manufacturing, commerce, services, transportation and communications, according to the classification made by the North American Industrial Classification System 2007 (SCIAN2007). This analysis is done taking the Survey on Information Technologies and Communications 2013 (ENTIC, 2013) conducted by the National Institute of Statistics and Geography (INEGI).

The survey was designed under a probabilistic scheme so that the results obtained can be generalized for the total population. The population of companies that integrate with 10 workers and more gives a total of 157, 611 and the total sample selected is 6, 941 companies. The available results are those presented for 42 companies.

It is worth mentioning that in this descriptive research, it had a limited sample of the results of the ENTIČ, 2013 published by INEGI within its website, which is a mere approximation as an exercise that it intends to do as a research work at the international level. mastery with the complete survey. This is a cross-sectional study since the survey deals with the use of ICTs in 2013.

B. Statistical design

The design used to carry out this research was an observational study, in which the ENTIČ, 2013 is taken with the 42 companies that make up the database published by INEGI on its website. When carrying out this research it was decided to take all the companies as it was a limited database, so the results represent an exercise for the calculation of the final results that is proposed as thesis for the master’s level.

The new stratification was carried out according to the size of the number of employees working in the company, so 3 groups were consolidated consisting of small companies that have a number of workers ranging from 1 to 50 employees, the medians of 51 to 250 employees and large companies that have more than 250 people employed.

C. Statistical analysis

In the statistical analysis are the basic statistics of the original stratification presented by the INEGI according to the employed personnel, which includes data on the investment in fixed assets of the companies that allow identifying the items with greater influence on average productivity, the availability of the media in which the behavior of companies is identified with the media to position their products and services. These same basic statistics were also determined for the impacts of the use of ICTs in the productivity of companies. This as an
alternative to promote competitive advantages over larger national companies as well as foreign companies established in the country that represent a potential competition.

In the proposal that is made to restructure the sample in 3 new groups, the structure of their income, the disposition of the means of communication, the use of computer equipment and the impact of ICTs, are finally proposed. 2 regression models to determine the average productivity and a modification to the production model using the Cobb-Douglas model using the Minitab statistical program.

5. Analysis of results

INEGI performs a stratification according to the employed or employed personnel, classifying the companies based on this criterion.

Table 1. Classification of companies.

<table>
<thead>
<tr>
<th>Estrata of personnel employed</th>
<th>Sample of companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>42</td>
</tr>
<tr>
<td>More than 751</td>
<td>10</td>
</tr>
<tr>
<td>251 a 750</td>
<td>6</td>
</tr>
<tr>
<td>51 a 250</td>
<td>14</td>
</tr>
<tr>
<td>21 a 50</td>
<td>5</td>
</tr>
<tr>
<td>10 a 20</td>
<td>5</td>
</tr>
<tr>
<td>1 a 9</td>
<td>2</td>
</tr>
</tbody>
</table>

The results presented by INEGI, stratum 3 absorbs 33% of companies, followed by Stratum 1 with 24%, this stratum being large companies in terms of personnel, with more than 751 employed persons. The turn of the activities carried out by these companies are: television monitors, electric power commercialization, clothing retail trade, personnel transport service, crude oil, to name a few, this explains in some way the amount of personnel they require to develop their activities.
The business of the companies is presented in table 2. This classification is carried out by the OECD, with a total of 23 branches. The shift that predominates in the results presented by INEGI are the wholesale and retail sales and the complements of the service.

Table 2. Distribution of the companies by branch of activity.

<table>
<thead>
<tr>
<th>Branch of activity OCDE</th>
<th>Description OCDE</th>
<th>Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Mining</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>Textile</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Clothing and leather</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>Pulp, paper and paper products</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>Publications, printers and reproduction of recording media</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>Chemical (pharmaceutical)</td>
<td>1</td>
</tr>
<tr>
<td>20</td>
<td>Rubber and plastic products</td>
<td>1</td>
</tr>
<tr>
<td>23</td>
<td>Ferrous basic metals</td>
<td>1</td>
</tr>
<tr>
<td>25</td>
<td>Products made of metal</td>
<td>2</td>
</tr>
<tr>
<td>28</td>
<td>Office, accounting and computer machinery</td>
<td>1</td>
</tr>
<tr>
<td>32</td>
<td>TV, radio and communications equipment</td>
<td>1</td>
</tr>
<tr>
<td>34</td>
<td>Motor vehicles</td>
<td>1</td>
</tr>
<tr>
<td>37</td>
<td>Aircraft</td>
<td>1</td>
</tr>
<tr>
<td>40</td>
<td>Furniture</td>
<td>1</td>
</tr>
<tr>
<td>41</td>
<td>Other manufactures not specified elsewhere</td>
<td>1</td>
</tr>
<tr>
<td>43</td>
<td>Electricity</td>
<td>1</td>
</tr>
<tr>
<td>46</td>
<td>Wholesales</td>
<td>5</td>
</tr>
<tr>
<td>48</td>
<td>Transportation and storage</td>
<td>3</td>
</tr>
<tr>
<td>53</td>
<td>Real estate, income and business activities</td>
<td>1</td>
</tr>
<tr>
<td>59</td>
<td>Community, social and personal services</td>
<td>3</td>
</tr>
<tr>
<td>SER</td>
<td>Complement services</td>
<td>4</td>
</tr>
<tr>
<td>46b</td>
<td>Retail sales</td>
<td>7</td>
</tr>
<tr>
<td>MEC</td>
<td>MEC Complement mining - construction</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>42</strong></td>
</tr>
</tbody>
</table>

A. Investment and equity participation of companies

Throughout economic history, talk about investment involves the injection of current assets to promote and reactivate some economic activity in order to grow this type of asset through yields. Within companies and any organization investments are made through direct injections of capital, for example the payment of wages and salaries, purchases of different inputs to make labor productive as the same production process, ICT equipment, among others. In the case of the study companies, it can be observed the distribution that is made of this investment being the items in machinery and equipment and the investment in computer equipment and peripherals that concentrate the largest amount of capital invested.
The information presented about the amounts of investment in fixed assets that companies make results with a large variance. In this way, through ranges it can be have a clearer vision. It can be seen that 54.76% of companies invest less than $ 999.00 pesos. This investment ratio is a function of the size of the companies that for this research has been stratified in terms of the staff they have occupied.

### Table 3. Investment amounts of companies

<table>
<thead>
<tr>
<th>Rank</th>
<th>Investment</th>
<th>Total companies</th>
<th>% of investment rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>De $0 a 99</td>
<td>13</td>
<td>30.95</td>
</tr>
<tr>
<td>2</td>
<td>De $100 a 999</td>
<td>10</td>
<td>23.81</td>
</tr>
<tr>
<td>3</td>
<td>De $1,000 a 9,999</td>
<td>10</td>
<td>23.81</td>
</tr>
<tr>
<td>4</td>
<td>De $10,000 a 99,999</td>
<td>5</td>
<td>11.90</td>
</tr>
<tr>
<td>5</td>
<td>More than $100,000</td>
<td>4</td>
<td>9.52</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>42</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Own elaboration

Continuing with the formation of the participation of the social capital of these companies, of the 42, 78.57% is 100% national capital, then we have 19.05% with participation of foreign capital and a public company. Within companies with foreign capital participation (8 companies), 3 have 99% of foreign capital and 2 companies have 100% of this same type of capital.

### B. ICTs in companies: Investment, uses and impact

The technological advances that society is currently suffering correspond to the satisfaction of the new needs that this has. Within the market composed of large, medium and small
companies, the relationships between them have become closer. They link such simple matters as the purchase and sale of articles of daily commercial use, to the movement of large capitals that would, in short, impact the living conditions of the residents of any place or country where these movements occur.

In this way the use of ICTs is a tool within companies to make large and small movements of capital, to perform the administrative and operational tasks of the company, understood here the operability from inputs - outputs of goods until its commercialization and arrival to the final consumer.

The situation that predominates in the companies analyzed through the following graph, show that the companies which responded through a dichotomous variable (yes, no) about the resources with which they had at their disposal in the year immediately prior to the publication of the survey, the results are presented below:

![Figure 4. Availability of means of communication used by companies.](image)

Source: Own elaboration with data from the ENIC, 2013.

The provision of means of communication such as telephone lines, fax, switch, mobile, email and social networks by companies involves multiple internal and external tasks. The companies, as shown in figure 4, represent the use of the traditional means of communication par excellence, such as fixed telephones, a strong percentage, 80.95 and 76.19% in fax and commutator, respectively. The provision of mobile telephony is on par with the same percentage of a traditional means of communication such as fax (76.19%). The email with 88.10% of the companies, proves to be only below the traditional landline phone the importance that has for the companies to have this ICT tool in the operation of their activities. On the other hand, it is seen that only 30.95% of these companies have social networks. Denote here the importance of the rise of social networks in recent years as they currently represent a niche of opportunity for the positioning and sales of companies.

The investments made by companies in the ICT category, are in the acquisition of computer equipment that includes: desktop computers (PC), mobile phones or laptops (laptop, notebook, netbook, tablet), workstations, servers, minicomputers, mainframes, supercomputers. In the results that INEGI presents, it is identified that on average each person employed within these companies has .35 computation equipment as media to perform the assigned activities.
Within the use of these equipment 92.85% that declare percentages in stock, it is noted that 63.67% of that 92.85%, is older than two years and only 17.62% of this equipment is less than one year. Taken into account the speed at which they depreciate (30% each year) this represents for companies a signal to be updated with new products that allow them to increase their productivity.

Another important aspect to highlight in the use, management and acquisition of computer equipment by Mexican companies are the support that the Mexican government has to support productive economic activities of companies. One of these programs is the PROSOFT 3.0 that supports companies with low levels of development for the adoption and development of new ICTs. Even within their calls, the innovations of companies are encouraged, all with the objective of increasing productivity levels in the strategic sectors of the economy (SE, 2016).

For the results presented by the ENTIC (2013), 93% of the companies did not receive any government support for these purposes. In the theoretical framework on the advances in the use of information technologies by companies, this use would imply significant advantages in the progress of the activities they carry out. When analyzing the situation of these 42 companies, it can be observed in the year of study, that the use of internet and email have impacts on the reduction of time of the processes of the companies.

The information collected by INEGI when applying its questionnaire on the impact of ICTs in the increase of sales and customers, reduction of time and costs, quality of services and market expansion is proposed based on the opinion of the person in charge of responding the survey, so it is a yes and no answer.

Although we do not count on the percentages of these increases or decreases to make specific estimates, this information helps to later consider the probabilities that these items have in decreasing or increasing productivity and production by making use of the internet, website, email or social networks. The most used instruments to increase sales were email and the Internet, which predominated in most of the categories: cost reduction, quality of services and customer growth.

Regarding the use of the website, it only impacts more or less significantly on the increase of customers. The issue of social networks turns out to be the one with less weight in these categories, having its greatest impact with 20.51% of companies that have social networks in the geographic expansion of their market.

In broad terms, these results represent the delay of companies in the use of ICTs to increase their productivity, since they are the tools we have in this century and mean the possibility of promoting competitiveness and growth in each of them. Stopping to observe the impact that the electronic mail is having within the operations of the companies in the period of surveying, it is noted that on average companies have .97 units of computer equipment to use with Internet access. Because the Internet network conditions the use of electronic mail, the people who used computer equipment with Internet access reach an average of 1.45 email accounts.

The average of email accounts combined with computer equipment with Internet access introduce, among other variables, the electronic commerce of goods and services offered by companies, which it will be analyzed later. In figure 5 we can observe these behaviors.
The increase due to the intensive use of ICTs would be a key factor together with the increase in productivity in the increase of yields, although as previously indicated, yields may increase due to the increase in prices, without this meaning an increase in the productivity of the company. These market forces are not very controllable by SMEs.

One aspect in which SMEs can have interference is in the training of their workers when using ICTs, since by keeping them trained they can update their knowledge of the factors that affect their market. Of the results presented by INEGI, only seven companies trained personnel taking between 2 to 100 courses in this period, a figure that shows information asymmetry due to the size of the company according to its personnel.

C. The structure of the market of companies

The outputs direction of companies made up of goods and services that they produce in the form of manufacturing, mining, energy and services in the construction and sales branches, among others, determine the capacity of companies to determine the final consumer. In this way, large companies, due to the magnitude they represent, are external to the national market, while small and medium-sized companies have a more or less local scope, with the exception of one company for each group, who export part of their products to the market. Externally, these sales contribute very little to their total income.

It is also the case of companies that do not sell either inside or outside the local market. So, it is about companies that obtain their income from other sources, their field therefore are the communal, social and personal services. In the following graphs it can be observed how the sales in the national market and the sales abroad (exports) as well as other sources of income, contribute to the total income of the companies.
Figure 6. Structure of the income of large companies.

Source: Own elaboration with data from the ENIC, 2013.

Figure 7. Structure of the incomes of medium-sized companies.

Source: Own elaboration with data from the ENIC, 2013

Figure 8. Structure of the income of small businesses.

Source: Own elaboration with data from the ENIC, 2013
When classifying the companies in these 3 groups according to the size as mentioned above, it is a function of the total number of personnel employed. It is analyzed the disposition of the means of communication. It can be seen that the results are similar between medium and large companies. The large companies to be hypothetically consolidated within the market, their technological equipment is also, a situation that shares with medium-sized companies. Companies classified as large achieve in this way 100% provision in fixed telephone lines and email and only 31.25% of the total of companies in social networks, percentage below the medians that report a 35.71% of the total of companies.

On the other hand, there is a considerable gap between small companies with these two groups (medium and large), although they share a low use of social networks and a high percentage in telephone lines. Being the group of small companies which represents 84.18% of the total population, according to the methodological document presented by INEGI for the ENTIC (2013) represents a central issue to guide policies for the use of ICTs by the bodies of competent governments. The following graph details the use of the media by companies in the classified groups:

![Disposition of the media by small, medium and large companies.](image)

Source: Own elaboration with data from the ENTIC, 2013

Differentiating the size of the companies to perform the analysis allows to identify the technical and technological advantages of medium and large companies in terms of cutting edge and acquisition of computer equipment. In terms of equipment per worker, medium-sized companies have a .38 computer equipment greater than the average of the whole (.35). Large companies are in the middle and small businesses, as expected, are below the average half.

The high percentage of obsolescence of the computer equipment of small companies is evident, which results in a disadvantage when competing with medium and large companies. Because of this, small businesses have a market to gain and equipping can be a powerful measure to achieve this goal. We see this information summarized in the following table 7:
Table 7. Obsolescence and per capita equipment of companies according to their size.

<table>
<thead>
<tr>
<th>Type of company</th>
<th>Age of computer equipment %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Computer equipment per capita</td>
</tr>
<tr>
<td>Large</td>
<td>0.35</td>
</tr>
<tr>
<td>Medium</td>
<td>0.38</td>
</tr>
<tr>
<td>Small</td>
<td>0.31</td>
</tr>
</tbody>
</table>

Source: Own elaboration

Regarding the use of ICTs to create competitive advantages within the market, it is found a more or less uniform behavior among the groups of companies. On the one hand, 50% of small businesses saw their sales favored with the use of the internet and 60% of these same companies increased their customer base. This speaks of a significant use of the internet. In the case of medium-sized companies, their time of processes and administrative activities was reduced with the significant use of the internet with 64.29% of the companies that declare using these ICTs for their operations.

With this indicator, it can be spoken at a first moment that medium-sized companies are more productive with respect to small and large companies. The results of the large companies are mainly due to the field of their activities highlighting manufacturing as predominant, in the medium-sized manufactures and services and small businesses services. It can be seen this in the following figure 10:

![Figure 10. Competitive advantages of the internet for small, medium and large companies. Source: Own preparation with data from the ENTIC, 2013](image)

The advantages provided by having an official website for each of the companies would represent an image positioning. The results presented for the web pages of the companies highlight the little use by small companies, having the biggest impacts for medium-sized companies, which is a more effective use to increase sales, offer quality services and a geographical expansion of the market. Large companies again fall short of the effects that
medians could have, with web pages being a website where the characteristics are captured and the magnitude of these companies would expect these results. It can be seen this below:

![Chart showing competitive advantages of web pages by small, medium, and large companies](image)

**Figure 11. Competitive advantages of web pages by small, medium and large companies.**

Source: Own elaboration with data from the EN Tic, 2013

E-mail is another tool of ICT for the realization of the activities of companies and in view of its impact on promoting the skills seen in its prevalence for medium-sized companies in the points on the increase in sales, cost reduction, improvements in the quality of their products as well as increases in the client portfolio.

For medium-sized companies, it is a tool for brand expansion and positioning. The benefits that the medium companies declare in the EN Tic (2013) because they have emails with considerable percentages in these items show the importance of the adoption of this ICT.

On this point large companies were favored by the use of mail in a slightly longer time reduction on medium-sized companies with 73.33% over 71.43%, while 40% of these same companies saw their market expanded geographically. In relation to small businesses, the percentages in terms of the impact of the use of electronic mail do not indicate a significantly beneficial trend, as shown below:
Finally, there are social networks as an ICT in which most of the companies have insignificant impacts as seen jointly and strengthen this thesis according to size. There seems to be a complementarity between large and small companies on the benefits of this ICT. The limited exploitation of ICTs by companies limits them to take advantage of benefits that would allow them to increase their sales through the positioning of their product, increase their customers and through these networks can be made known and achieve greater expansion of its national market and on a smaller state or regional scale.

Summarizing small companies are those who obtain advantages over social networks to increase their sales and increase the number of customers, although this tool is not the most remarkable of the analysis, this behavior can be reviewed in the following graph.
Efforts in the adoption of ICT should be and is, as shown by this detailed analysis, by small and medium enterprises, since they are the entities that are obligated to invest in order to grow. In the case of large companies, the effort turns out to be less since they have reached a degree of maturity and consolidation within their market, they already have a client portfolio and their market is national and foreign.

The undoubted importance of technical and technological equipment for the disposition and use of ICTs by companies in any of its dimensions accompanied by users of these technologies: human capital converges in higher or lower revenues for companies.

For the analysis it is taken the total income of companies, presented previously and made up of sales to the domestic market, sales abroad and other types of income as an indicator of productivity that depends on the level of ICT equipment in this case is the investment in computer equipment and labor factor as the number of total personnel employed. The model to make the approximation to the productivity of the company would be represented by the following expression:

Average productivity model

\[ \ln P_{MEi} = \alpha + \beta \ln I_{ICT} + \gamma \ln I_{NOTIC} + \delta Tam + \epsilon_i \]

Where:
\[ \alpha = \text{intercept} \]
\[ \ln P_{MEi} = \ln \text{Productivity average per worker of the company i} \]
\[ \beta I_{ICT} = \ln \text{Investment in ICT per company worker i} \]
\[ \gamma \ln I_{NOTIC} = \ln \text{Investment in NOTIC equipment per company worker i} \]
\[ \delta Tam = \text{Dummy of the size of the company} \]
\[ \epsilon_i = \text{random error} \]

Certain characteristics acquired by companies according to capital, personnel, type of activities they develop, size, administrative and production processes, among others, make them adopt working mechanisms, decision making about the distribution of functions, tools to be used. Thus, in the search for increasing returns, technical and technological tools are provided with which the times of the processes can be minimized and generally optimizing the company’s human and material resources.

Through the general linear model of double logarithm to determine the average productivity of the workers through elasticities that show the increases that have the increase in 1% plus the ICT equipment or the non-ICT. The results of the model by stratum show a significance of 24.53% (R).

The constants by strata, 6.58 for the large ones, 5.83 for the medium ones and 5.25 for the small companies shows the level of equipment that each group has. These results are to be expected since large companies by size would have to have a fixed capital greater than medium and small companies.

In the coefficients of the general model, it is identified that the investment in ICTs increased by 1% through computer equipment, the average productivity per worker increases by 0.18%, while by doing so in non-ICT investments (investment in furniture and equipment) the average productivity of workers grows by 0.25%. These significant differences correspond to a low
intensive use of ICTs by small Mexican companies that, as indicated before, represent 84.18% of the total population of the ENIC, 2013.

By strata of companies, it is observed that for large companies the average productivity is 0.64% higher than the average productivity of small and medium enterprises. Being a linear regression statistical model it is referred to the characteristics of the data to validate the assumptions, so we find that the data come from a normal distribution.

**General Regression Analysis: LN de la pro versus LN I TIC x t, LN I en Mob , ..**

Regression Equation

<table>
<thead>
<tr>
<th>Term</th>
<th>Coef</th>
<th>SE Coef</th>
<th>T</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>5.89113</td>
<td>0.286289</td>
<td>20.5776</td>
<td>0.000</td>
</tr>
<tr>
<td>LN I TIC x trabajador</td>
<td>0.13046</td>
<td>0.298888</td>
<td>0.4417</td>
<td>0.658</td>
</tr>
<tr>
<td>LN I en Mob y Equipo x trabajador</td>
<td>0.25956</td>
<td>0.120802</td>
<td>2.1487</td>
<td>0.036</td>
</tr>
<tr>
<td>M2O_ESTRAIO 1</td>
<td>0.69368</td>
<td>0.374024</td>
<td>1.8566</td>
<td>0.065</td>
</tr>
<tr>
<td>M2O_ESTRAIO 2</td>
<td>0.06548</td>
<td>0.358987</td>
<td>-0.1828</td>
<td>0.859</td>
</tr>
</tbody>
</table>

**Summary of Model**

\[ S = 5.57328 \]
\[ R-Sq = 24.53\% \]
\[ R-Sq(adj) = 16.37\% \]
\[ PRESS = 114.072 \]
\[ R-Sq(pred) = 6.00\% \]

Figure 14. Results of the linear regression of the Average Productivity model

**D. Production model**

Starting from the function of production mostly used and exposed by Cobb and Douglas in 1948, it is determined the relationship between the product with labor and the capital in which technology remains constant (Sánchez, 2016), in this way we will have:

\[ Q = AL^\alpha K^\beta \]

Where:

- **Q** = Product
- **L** = Labor (Employed personnel)
- **K** = Stock of Capital
- **α** = Work participation in the generation of added value or product
- **β** = Share of capital in the generation of added value or product
- **A** = Factor scale or efficiency parameter, which reflects the level of technology

Finally introducing the double logarithm, we will have:

\[ \ln IN_i = \ln A + \alpha \ln L_i + \beta \ln K_i \]
Under this model scheme it is obtained the elasticities of the product of labor and capital. In this sense we take Q as the total income of the company, A referring to a scale factor or parameter of technological efficiency and supported by the regression analysis where we calculate average productivity, where large companies are intensive in ICTs use, medium-sized companies to a lesser degree and finally to small ones such as those that make the best use of ICT. It will be used this same classification or parameters, where 1 uses the most technology, 2 uses medium technology and 3 uses less technology.

For L we will take the total of employed personnel and for K that represents the stock of capital, we take the total variable of investment in fixed assets 2012. In the first stage where we calculate the relations that have the product taken as the income of the companies of the sample with the explanatory variables, in this case of the total staff, the stock of capital and the level of technology, where stratum 1 is intensive companies, 2 medium-intensity companies and 3 those that use less technology, we have as a result that this model is adjusted by 76.9%.

By increasing the 1% employed personnel, the product increases by 1.10% as the most relevant variable, followed by stock of capital that increases by 0.78% in the same percentage. In the case of the strata that represent the intensity of the use of technology as a parameter, increasing one stratum to another results in a weight of 0.031%, remembering that this is a classification variable, which is the result of moving from one stratum to another.

In the following figure, we can find the results of the regression, the normality graphs are presented to fulfill the assumptions of distribution of the data of the sample.

**Regression Analysis: LN Ing Tot versus LN Total perso, NVO_ESTRATO, ...**

The regression equation is

\[ \text{LN Ing Tot} = 4.40 + 1.11 \text{LN Total perso} + 0.03 \text{NVO_ESTRATO} + 0.787 \text{LN Stock} \]

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Coef</th>
<th>SE Coef</th>
<th>T</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>4.401</td>
<td>1.920</td>
<td>2.29</td>
<td>0.028</td>
</tr>
<tr>
<td>LN Total perso</td>
<td>1.1058</td>
<td>0.2628</td>
<td>4.21</td>
<td>0.000</td>
</tr>
<tr>
<td>NVO_ESTRATO</td>
<td>0.031</td>
<td>1.147</td>
<td>0.03</td>
<td>0.979</td>
</tr>
<tr>
<td>LN Stock</td>
<td>0.7871</td>
<td>0.3432</td>
<td>2.29</td>
<td>0.027</td>
</tr>
</tbody>
</table>

\[ S = 1.55822 \quad R^2 = 76.9\% \quad R^2(\text{adj}) = 75.1\% \]

**Analysis of Variance**

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>3</td>
<td>307.96</td>
<td>102.65</td>
<td>42.28</td>
<td>0.000</td>
</tr>
<tr>
<td>Residual Error</td>
<td>38</td>
<td>92.27</td>
<td>2.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>41</td>
<td>400.22</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source**

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Seq SS</th>
</tr>
</thead>
<tbody>
<tr>
<td>LN Total perso</td>
<td>1</td>
<td>295.02</td>
</tr>
<tr>
<td>NVO_ESTRATO</td>
<td>1</td>
<td>0.17</td>
</tr>
<tr>
<td>LN Stock</td>
<td>1</td>
<td>12.78</td>
</tr>
</tbody>
</table>

Figure 14. Results of the linear regression of the production model.

Source: Own elaboration
6. Conclusions and recommendations

The delay that Mexican companies present in their technological equipment allows them to be placed at a disadvantage compared to multinational companies established in our country. The companies collected for this analysis place most of their sales in the national market, so it is of significant importance the decision making by the top managers to rethink investment efforts aimed at Information and Communication Technologies.

These results are preliminary and represent an exercise so it is recommended to conduct future studies thoroughly and with the entire sample. The efforts made by companies in their investments are based on the purchase of machinery and equipment (30%), followed by computer equipment and peripherals (26%), which means the importance in the operation of the companies the use of TIC’s.

The companies studied continue to use traditional means of communication such as fixed telephone lines, fax and commutator. On the other hand, by making use of e-mail and the Internet, companies benefited from reducing their costs, increasing the quality of their services and increasing their client base.

In the results of the regression model in the coefficients identified that the increase in 1% investment in TIC’s through computer equipment average productivity per worker increases by 0.18%, while doing so in non-ICT investments (investment in furniture and equipment) the average productivity of workers grows by 0.25%.

It should also be noted that by increasing the 1% employed personnel, the product increases by 1.10% as the most relevant variable, followed by stock of capital that increases by 0.78% in the same percentage, in the case of the strata that represent the intensity of the use of technology as a parameter, increasing one stratum to another results in a weight of 0.031%, remembering that this is a classification variable, which is the result of moving from one stratum to another.

The positioning of the companies in the Mexican market does not turn out to be simultaneous, but it raises a series of actions that guide the companies in the growth and permanence, within the actions that these companies carry out, the product of the realization of this research is a low investment with less than $ 999.00.

The companies under study, mainly national capital (78%) have to increase the training of their staff to make use of ICTs, programs such as PROSOFT 3.0 created to promote innovation and for the adoption and development of new ICT’s must be exploited since 93% of companies do not receive support of this type.

Another point that should be noted is the necessary update of the computer equipment used by companies, since 63.67% of companies have equipment greater than two years old and taking into account depreciation per year (30%) is relevant to take measures for replacement.

The medium and large companies to have consolidated their market their efforts do not have to be comparable to those that have to do small businesses, so it is necessary to formulate strategies through subsidy ways of taxes, strengthening of government programs for the small business, so that this gap is shortened. This obsolescence in small businesses represents a significant obstacle since they have a market to win.

It is important to mention that the low equipment in computer equipment (.35 per capita of the total of the companies) responds to a circumstance of disadvantage. The employed personnel are limited to the development of their activities through these technologies that would allow them to limit their efforts and minimize times and costs.
Finally, electronic commerce should be encouraged among companies, since this way marks the future of a new virtual generation that is friendly to the environment, which would allow cost reduction and meet human needs simultaneously.

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CEO-TMT Exchange, TMT Psychological Empowerment and Firm Performance: The Moderating Effects of TMT Incentive Pay

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Abstract

This study is an attempt to investigate the associations of CEO-TMT exchange; psychological needs and incentive pay are highlighted to elucidate the complicated psycho-socio cognitive dynamics among top management team (TMT) members and are valued of their competence and, subsequently, their effect on firm performance. The study adopts the upper echelon perspective, by collecting sample from firms in Jordan, using the structural equation model (SEM). The research results show that both of CEO-TMT exchange and psychological empowerment have significant effects on firm performance. TMT psychological empowerment plays a mediating role in linking CEO-TMT exchange with firm performance. Moreover, incentives pay a moderate with psychological empowerment to support in enhancing firm performance. An integrated consideration of CEO-TMT exchange and TMTs perceive empowerment may provide a more understanding of empowerment process, team-level, leader dynamics and interactions. CEO-TMT compensation system design also can provide very strong incentives to stimulate TMT members. Limitations and implications are discussed.

Keywords: Upper-echelons perspective, incentive pay, psychological empowerment, CEO-TMT exchange, firm performance.

INTRODUCTION

Conversely, research in workplace team context has shown the power distribution of team members proximal work environment and, consequently, strength on various team outcomes (Smith, Houghton, Hood, & Ryman, 2006). Research has also presented us with quite a few insights about the determinants and consequences of psychological empowerment (Chen, Kirkman, Kanfer, Allen, & Rosen, 2007). Nonetheless, an examination of the degree to which top management team (TMT) members perceive empowerment is consequential (Ling, Simsek, Lubatkin, & Veiga, 2008), and understanding how TMT empowerment affects firm performance (Smith et al., 2006).

Although a little investigation has been made into the ways in which CEO-TMT uses their psychological characteristics sources to overcome these biases and/or relationship between TMT
socio-psychometric characteristics and the properties of the firm outcome (Lin & Rababah, 2014), research on upper echelons theory has yet to fully explain the processes that convert TMT characteristics into firm performance (Souitaris & Maestro, 2010). Therefore, an examination of psycho-cognitive dynamics among TMT members thus will have great filtering mechanisms that may explain how attributes dispose TMT toward specific strategic behaviors and performance implications for a firm (Nadkarni & Herrmann, 2010).

Additionally, upper echelon approach in an organization typically “often yields better explanations of organizational outcomes” (Hambrick, 2007: 334) that focuses on ways to achieve and maximize organizational performance. There is omission also in the study of the upper echelon especially the TMT compensation can affect firm performance. Researchers have suggested that team process should be considered a moderator of the link between TMT process and performance (Hambrick, 1994). Although the importance of TMT incentive pay has not been stressed in past theorizing, “The literature on executive compensation, steeped in classic economics logic, has little to say about how executives might differ in their reactions to incentive arrangements”(Hambrick, 2007: 340). However, incentive pay is considered important because of the potential benefits that can result from it, including increased commitment, building, and improved quality of decision. Incentive and ability were seen as the primary moderators of deep-level processing of information in social psychological models of social perception and judgment (Chaiken & Trope, 1999).

The study contributes to the upper echelons literature by examining the deep-level cognitive dynamics among TMT members and their effects on TMT collective psychological strength and then firm outcomes. Contributing to TMT research also, by builds a far-reaching model that reveals the intricate interplay between a CEO and the rest of team member’s empowerment can advance organizational performance sensory abilities within the broad context of a psychological process (Cho & Hambrick, 2006), advances the generalizability of a team-level empowerment (Chen et al., 2007), and understanding how top management affects firm performance (Smith et al., 2006).

However, an integrated consideration of CEO-TMT psychological empowerment provides a more complete picture of how a dominant coalition functions, and that such consideration in combination with the idea of TMT incentive pay as a moderate mechanism may help to TMT compensation system design, and introduces the possibility that the effects of TMT incentive pay as a moderator variable, as a view also is critical avenue of upper echelon research in which these moderators are conceptualized and measured.

The study also advances the generalizability of the upper echelons theory by responds to the recent call upon doing research in the Arab Middle East. The “majority of empirical upper echelons studies have used samples of American firms” (Hambrick, 2007: 339), with very few empirical studies conducted in non-US settings (Papadakis & Barwise, 2002). As a result, an examination of TMT issues in the Eastern context can expand the theoretical and practical implications of the upper-echelons theory (Cannella, Park, & Lee, 2008).

THEORETICAL BACKGROUND AND HYPOTHESES

CEO–TMT exchange quality and its influence on TMT psychological empowerment

Upper-echelons perspective proposes that the values, cognitive bases, and breadth of perspective of top executives will lead a firm’s directions and determine its strategic and ultimate effectiveness (Carpenter, Geletkanycz, & Sanders, 2004). Conversely, upper echelon literature has not yet paid significant attention to the sequential relationships among TMT social/psychological characteristics, strategic choices and their impact on performance (Lin &
Shih, 2008). Yet researchers have been equivocal about the general importance of CEOs role in affecting such firm-level outcomes (Ling et al., 2008). Indeed, the examination of CEO-TMT exchange is consequential because it’s the interactions, and relationships of top executives that form the cornerstone of the upper-echelons theory (Hambrick & Mason, 1984).

Equally, psychological empowerment refers to a process of enhancing feelings of self-efficacy among team members (Conger & Kanungo, 1988). This study advances the conceptualization and measurement of psychological empowerment at team level (Hyatt & Ruddy, 1997; Kirkman, Rosen, Tesluk, & Gibson, 2004), which emerges from collective or socially-constructed cognitions or reflects “team members’ collective belief that they have the authority to control their proximal work environment and are responsible for their team’s functioning” (Mathieu, Gilson, & Ruddy, 2006: 98) and is composed of four shared cognitive attributes (Chen et al., 2007; Spreitzer, 1995). Meaningfulness refers to the value of a task in terms of team members’ ideas or standards, and it can energize people to work (Spreitzer, Kizilos, & Nason, 1997). Potency, or self-efficacy, reflects the degree to which member’s perceived ability to accomplish work-related tasks (Conger & Kanungo, 1988; Chen et al., 2007), autonomy or self-determination to choose how team members carry out their tasks (Mathieu et al., 2006). As to impact, it reflects the degree to which team members feel their tasks affects their organization (Chen et al., 2007).

To characterize TMT process concerns, the study focuses a psycho-socio integration which is comprised of TMT cognitive, social behavior and task by CEO-TMT exchange, such as information exchange and joint decision, which have advance constructive dialogues among TMT members (Simsek, Veiga, Lubatkin, & Din, 2005), and expands team information-processing capacity (Hambrick, 1994), leading to greater team potency (Kirkman et al., 2004). Equally, the basis of CEO-TMT exchange is the relationship between leaders and members built on reciprocity, which is influenced by emotional support and valuable resources this exchange provides (Wilson, Sin, & Conlon, 2010).

As research aims to demonstrate, TMT members will be motivated to accomplish their tasks if they feel empowered by the CEOs. High-quality CEO–TMT exchanges can increase value congruence (Ford & Seers, 2006) and promote collective efficacy (Zhao & Seibert, 2006), which can improve members’ perception of their impact on the organization (Lin & Rababah, 2014). The study expects that high-quality CEO–TMT exchanges will lead to the development of entrenched individualized relationships within a TMT and foster a climate of mutual trust (Dooley & Fryxell, 1999), thus advancing the collective belief in team empowerment (Lin & Rababah, 2014).

Hypothesis 1: CEO–TMT exchange is positively related to TMT psychological empowerment.

TMT Psychological Empowerment and Firm Performance

However, access to the information resources require distribution of power on a team members, has been also identified as a capacity to mobilize resources’ which has relates to team decisions and firm outcomes (Lin & Rababah, 2014). Although TMT members with such empowerment are able to make more informed decisions quality that is more aligned with organization performance. The more perceived team empowerment, the more TMT members feel they need to account for a firm’s strategic decisions (Kirkman & Rosen, 1999), which can advance information search and idea inquiry for decisions and then enhance firm outcomes.

Conversely, team members who feel that their task are meaningful and that by completing their job responsibilities (Lin & Rababah, 2014), they to be have an impact on others and organization, because empowerment provides an opportunity for members to determine work
roles and accomplish meaningful jobs. When TMT members are confident to make decisions, the more TMT members feel they need to account for a firm’s strategic decisions that are high-impact to a firm outcome (Kirkman & Rosen, 1999). As results, prepare the firm for taking new competitive initiatives, increasing the probability of being extend in the marketplace.

Hypothesis 2: TMT psychological empowerment will be positively associated with firm performance.

TMT Psychological Empowerment as a Mediator

The upper-echelons perspective states that the relationships between executive profiles and firm outcomes are punctuated by various intervening mechanisms (Hambrick, 2007). However, to date the TMT literature has paid little, if any, attention to how TMT psychological states mediate the effects of CEO-TMT interplay and TMT deep-level characteristics on outcomes (Amason, 1996; Peterson, Smith, Martorana, & Owens, 2003). Conversely, the degree of top team empowerment has been viewed critical in most studies of team effectiveness, in which TMT will lead a firm’s directions and determine its strategic and ultimate firm performance. Research has shown that self-efficacy, an important element of psychological empowerment, mediates the relationship between TMT personality and performance outcome, because positive emotions and the traits (e.g., self-efficacy, confidence) lead people to think and feel they are successful.

Researchers have also shown that empowerment in team elevates strategic decision making, which in turn diminishes firm performance (Chen et al., 2007; Mathieu et al., 2006; Spreitzer, 1995). At a team level, CEO-TMT also can increase team potency, a key dimension of psychological empowerment (Boies & Howell, 2006). Indeed, TMTs members may therefore feel more empowerment to seek an innovative approach (Bass, 1999), by participative decision making process, because CEO-TMT exchange may interactions within-team member differentiation in predicting team-outcomes (Boies & Howell, 2006).

Hypothesis 3: TMT Psychological empowerment partially mediates the relationship between CEO-TMT exchange and firm performance.

TMT Incentive Pay as a Moderator

Both practitioners and academicians attempt to show that motivation causes performance (Carpenter & Sanders, 2002; Boies & Howell, 2006; Fey & Furu, 2008). Researchers have analyzed the relationship between incentive pay and firm performance, as a positive should be observable. However, the most widely studied of executive pay, have received the greatest amount of attention in the business press and management research, and, reflect the different pay sectors, organization, and environment (Wiersema & Bantel, 1993). Firms that rely more heavily on incentive pay will have better subsequent performance than those that do not (Tosi, Werner, Katz, & Gomez-Mejia, 2000).

Further, TMT incentive pay, there have been no attempts to examine its significance with TMT psychological empowerment. These propositions have not been directly tested, but they are indirectly supported by some evidence. Conversely, there are studies based on psychological theories arguing that incentives may motivate performance under certain conditions (Fey & Furu, 2008). For instance, the pay program cannot possibly have its intended effect without consider the interactive effects of executive characteristics and compensation (Hambrick, 2007).

In the same time, incentive systems as formal corporate control mechanisms (Tosi et al., 2000). Compensation has a positive effect on participation decision, and executive motivation (Gomez-Mejia & Balkin, 1992). The relationship between psychological needs and intrinsic motivation, intrinsic motivations are likely to be important as contributors have a high degree of autonomy and self-determination and are valued for their competence (Roberts, Hann, & Slaughter, 2006).
The study expects that the positive aspects of TMT incentive/long-term pay as a moderator effects upon the relationship between TMT psychological empowerment and firm performance. They are noting that the lack of payment methods-systems is leads to the decrease of self-efficacy (Gkorezis & Petridou, 2012; Conger & Kanungo, 1988). Spreitzer, (1995) argued that rewards as financial rewards are related to psychological empowerment, and because the diffusion of information between the various levels enforces the feeling of autonomy (Nonaka, Krogh, & Voelpel, 2006), it may be also determinant of the wholeness of a TMT’s efforts, and ultimately its ability to contribute to high firm performance.

Equally, payment-for-complexity relationships may lead to cooperative behavior and, as a result, high firm performance when it is extended to TMT members (Carpenter & Sanders, 2002). TMT members’ long-term pay structures align top executives contributes to a behaviorally integrated top team (Hambrick, 1995), and also relevant to team functioning. In addition, individual incentives enhance empowerment by recognizing and reinforcing personal competencies, and providing individuals with incentives for participating in and affecting decision-making processes at work (Spreitzer, 1995), also positively reflected in TMT member pay, and subsequent firm performance is likely to benefit.

Regarding TMTs incentive pay, which provides a factors confidence, take the risk, and provides commitment of TMT members in a manner specific to decision, they feel empowering and satisfaction at their working environment, thus advancing the collective belief in team empowerment, and advance firm performance. This led to the following hypothesis:

**Hypothesis 4:** TMT incentive pay will positively moderate the relationships between TMT psychological empowerment and firm performance.

**RESEARCH DESIGN AND METHODOLOGY**

**Research Design and Sample Selection**

An organization is “the reflection of its top managers” (Hambrick & Mason, 1984: 193). TMT is a group of executives, identified by a firm’s CEO, who decide the strategic directions and actions of the firm (Carpenter et al., 2004). In this study, the research sample is drawn from Jordan. Jordan is an important Middle Eastern country that connects western nations and the Arab world. As compared with other Arab countries, Jordan has a fairly dynamic, market-oriented economy (Lin & Rababah, 2014). Jordanian society is easier than other Arab countries due to the fact that Jordan is relatively liberal.

For the Jordanian sample, the final usable sample includes 716 executives in 210 firms. The average capital of the sample firm age of 18.82 years (s.d.= 12.94). About 27% are in the industrial sector, 12% in the banking and financial services sector, 49% in the services sector, and 12% in the insurance sector. The average TMT size is 5.34 (S.D. 2.20) and the sample averages 45.30 years of age (S.D. 6.06). Further, respondents had an average of 20 years of experience in the firm’s industry and had been top executive for 9.42 years with an average age of 45.91 years with (S.D. 6.98). 85% of the sample was male and 95.9% are married.

**Measurements of Variables.**

**Independent Variables.**

**CEO-TMT exchange:** CEO-TMT exchange was evaluated by the mean value of team members’ LMX information collected with a five-item measure adapted from Linden, Wayne, & Stilwell (1993) (α=.86). Respondents were asked to indicate the extent of their CEO agreement with each statement on a 7-point Likert-type scale (1 = strongly disagree, 7 = strongly agree). CFA results
showed the model fitted the data well ($\chi^2= 5.21$, df = 5; NNFI= .99, CFI= .99, SRMR= .04, RMSEA= .01).

Psychological empowerment: Kirkman et al.’s (2004) 12-item, 7-point Likert-type (1= strongly disagree; 7= strongly agree) scale was adapted to measure TMT empowerment. The 12 items reflect four dimensions of psychological empowerment: meaning ($\alpha= .91$), impact ($\alpha = .85$), potency/self-efficacy ($\alpha= .89$), and autonomy ($\alpha= .86$). Cronbach’s $\alpha$ for the overall scale was (.95). CFA results showed acceptable model fit indices ($\chi^2= 3.25$, df = 2; NNFI= .98, CFI= .99, SRMR= .02, RMSEA= .05).

Dependent Variable.

Firm performance: The five 7-point (1= far low than competitors; 7= far high than competitors) items used in this study are adapted from (Garg, Walters, & Priem, 2003). These include such indicators as profitability, sales growth rate, market share growth rate, return on investment, and overall firm performance. CFA results also showed good psychometric property of the variable and the fit indices were all higher than the acceptable thresholds ($\chi^2 = 29.28$, df = 5; NNFI = .94; CFI = .95; SRMR = .05; RMSEA = .10).

Moderating Variable.

Incentive pay: The study used five items to measure this construct. Three items were adapted from (Ling et al., 2008). To emphasize the importance of long-term compensation for TMT, and the extent of the members team feeling. The study is developed two items as the follows: Our management team focuses on long-term compensation which offers us more self-determination and job security inside the firm. My company provides profit based incentive pay so that, our team feel as entrepreneurs. TMT members were asked to complete this scale on ranging from 1 “highly disagree” to 7 “highly agree”. The results supported aggregating individual scores to the team level. The overall measure reliability was adequate ($\alpha= .87$). CFA also showed an acceptable value and fit index $\chi^2 = 9.197$, df = 5, NNFI = .99, NFI = .99, CFI = .99, RMR = .01, and RMSEA = .05.

Control Variables.

To decrease the likelihood of spurious results, several control variables are added to the model (Lin & Rababah, 2014). The study controlled for variables that may affect psychological empowerment and firm performance, including TMT-level information (i.e. average age, team size, education heterogeneity & FFM personality heterogeneities), industry-level variables (i.e. environmental dynamism and munificence), and firm-level characteristics (i.e. size, age, and organizational slack) (Papadakis & Barwise, 2002).

Statistical Analysis.

Structural Equation Modeling (SEM) and Moderating Hierarchical Regression Analysis.

Structural equation modeling (SEM) can closely examine the relationships between observed indicators and latent variables while simultaneously controlling for measurement errors. To assess model fit, the chi-square $\chi^2$ test was used, and the four fit indices of (CFI), (NNFI), (RMSEA), and (SRMR) are applied, following Hu and Bentler (1999). The full measurement model was evaluated by incorporating the control variables into the model. To test the moderating hypotheses, the study uses hierarchical regression analysis (Cohen, Cohen, West, & Aiken, 2003). For interaction effects, first the mean-centered independent variables were entered and then multiplicative terms were created between the mean-centered variables (Chen, Lin, & Michel, 2010).
Table (1) Means, Standard Deviations, and Correlations

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
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<th>10</th>
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<th>12</th>
<th>13</th>
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<tbody>
<tr>
<td>1. CEO-TMT exchange</td>
<td>4.51</td>
<td>.66</td>
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<tr>
<td>2. Psychological empowerment</td>
<td>2.75</td>
<td>.88</td>
<td>.27**</td>
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<tr>
<td>3. Incentive pay</td>
<td>3.41</td>
<td>1.23</td>
<td>.12</td>
<td>.39**</td>
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<tr>
<td>4. Firm performance</td>
<td>3.42</td>
<td>1.15</td>
<td>.25**</td>
<td>.47**</td>
<td>.37**</td>
<td></td>
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<tr>
<td>5. Environmental munificence</td>
<td>4.86</td>
<td>1.45</td>
<td>.02</td>
<td>.17*</td>
<td>.07</td>
<td>.10*</td>
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<tr>
<td>6. Environmental dynamism</td>
<td>5.74</td>
<td>.79</td>
<td>-.01</td>
<td>.02</td>
<td>-.04</td>
<td>-.13*</td>
<td>.01</td>
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<tr>
<td>7. Firm slack</td>
<td>4.84</td>
<td>1.24</td>
<td>-.02</td>
<td>-.10</td>
<td>-.05</td>
<td>-.05</td>
<td>-.03</td>
<td>-.07</td>
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<tr>
<td>8. CEO tenure</td>
<td>26.8</td>
<td>8.42</td>
<td>-.04</td>
<td>.07</td>
<td>.06</td>
<td>-.09</td>
<td>.12</td>
<td>-.02</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>9. TMT size</td>
<td>5.35</td>
<td>2.20</td>
<td>-.04</td>
<td>-.17</td>
<td>-.26*</td>
<td>-.11*</td>
<td>-.00</td>
<td>-.10</td>
<td>-.07</td>
<td>-.15*</td>
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<tr>
<td>10. TMT age</td>
<td>1.31</td>
<td>.33</td>
<td>.02</td>
<td>.05</td>
<td>.07</td>
<td>.09</td>
<td>.06</td>
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<td>.00</td>
<td>.01</td>
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<td></td>
</tr>
<tr>
<td>11. TMT education heterogeneity</td>
<td>.52</td>
<td>.30</td>
<td>.07</td>
<td>.00</td>
<td>-.03</td>
<td>.00</td>
<td>.02</td>
<td>-.01</td>
<td>.01</td>
<td>.03</td>
<td>.10</td>
<td>.02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Firm size</td>
<td>2.42</td>
<td>.49</td>
<td>.02</td>
<td>.08</td>
<td>.14*</td>
<td>.11*</td>
<td>-.03</td>
<td>-.02</td>
<td>-.00</td>
<td>-.13</td>
<td>.27**</td>
<td>.10</td>
<td>.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Firm age</td>
<td>1.19</td>
<td>.56</td>
<td>.08</td>
<td>.02</td>
<td>.00</td>
<td>.15*</td>
<td>.07</td>
<td>.00</td>
<td>.04</td>
<td>.02</td>
<td>.15*</td>
<td>.06</td>
<td>.17*</td>
<td>.09</td>
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</tbody>
</table>

N = 210, "p < .01, *p < .05

Hypotheses Testing and Results.

Table (1) presents the means, standard deviations and intercorrelations for the variables examined in the study. Table (2) presents the value of fit indices for the nested models. The significant difference ($\Delta \chi^2 = 2103.288, \Delta df = 64, p < .001$) between the hypothesized model (Model 2) and null structural model (Model 1) provided the basis for further examination of various nested models. To determine whether a CEO-TMT exchange presented a direct relationship with firm performance, CEO-TMT exchange–firm performance relationship (Model 3) adds to the hypothesized mediated model. Significant differences between Model 2 and Model 3 ($\Delta \chi^2 = 12.343, \Delta df = 5, p < .001$) suggested that adding CEO-TMT exchange–firm performance relationship into the hypothesized model indeed improved model fit. The results revealed the fact that CEO-TMT exchange–firm performance relationships exhibited a significantly incremental contribution to Model 3. Then, the study obtained Model 3 as the final model ($\chi^2 = 415.102, df = 251, p < .001; \text{NNFI} = .95, \text{CFI} = .95, \text{RMSEA} = .04$ and $\text{SRMR} = .05$).

Table (2) Comparisons of Nested Structural Models

<table>
<thead>
<tr>
<th>Models</th>
<th>$\chi^2$</th>
<th>Df</th>
<th>NNFI</th>
<th>CFI</th>
<th>SRMR</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Null structural model</td>
<td>2530.733***</td>
<td>320</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Hypothesized model</td>
<td>427.445***</td>
<td>256</td>
<td>.94</td>
<td>.94</td>
<td>.05</td>
<td>.05</td>
</tr>
<tr>
<td>3. CEO-TMT exchange</td>
<td>415.102***</td>
<td>251</td>
<td>.95</td>
<td>.95</td>
<td>.05</td>
<td>.04</td>
</tr>
</tbody>
</table>

→ Firm performance

Note:
1. *** $p < .001$
2. Model 3: adding CEO-TMT exchange-empowerment–firm performance paths into Model 2; the final model.

Figure (1) presents the completely standardized path estimates for the examined relationships.
Consistent with expectations, CEO-TMT exchange ($\beta = .26$), was positively related to psychological empowerment ($p's < .05$), supporting H1. Also, psychological empowerment was positively related to firm performance, supporting H2 ($\beta = .39, p < .001$).

The study performed a bias-corrected bootstrap analysis to calculate the estimates and confidence intervals for the mediated effects (MacKinnon, Lockwood, &Williams, 2004), as this can improve the power when conducting mediation tests (Lin & Rababah, 2014). The results showed that the indirect effect of CEO-TMT exchange on firm performance was ($\beta = .13, p < .001$). Moreover, the 95% confidence intervals of the paths from CEO-TMT exchange to psychological empowerment and then firm performance was (.066 ~ .910). Therefore, H3 was supported.

Finally, as shown in Table 3, hypothesis 4, which predicted TMT incentive pay would positively moderate that relationship between TMT psychological empowerment and firm performance was supported in model 3 ($\beta = .43, t = 7.12, P > .05$), and in model 4 ($\beta = .44, t = 7.23, P > .05$). To estimate the level effect of TMT incentive pay explained by the interactions, the study conducted hierarchical regression analyses by creating two simple regressions of TMT psychological empowerment on firm performance, the change can be estimated when the interaction term was entered (Rababah, 2017b). As the moderating effects shown in Figures 2, plotting the interactions terms also were supporting the clarification.

### Table 3 Results of Regression Analysis (Dependent Variable Firm Performance)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEO tenure</td>
<td>.086</td>
<td>.052</td>
<td>.044</td>
<td>.036</td>
</tr>
<tr>
<td>TMT size</td>
<td>-.177**</td>
<td>-.088</td>
<td>.025</td>
<td>.033</td>
</tr>
<tr>
<td>TMT age</td>
<td>.052</td>
<td>.046</td>
<td>.028</td>
<td>.034</td>
</tr>
<tr>
<td>TMT educational heterogeneity</td>
<td>.041</td>
<td>-.036</td>
<td>-.020</td>
<td>-.016</td>
</tr>
<tr>
<td>Firm size</td>
<td>.165*</td>
<td>.102*</td>
<td>.021</td>
<td>.010</td>
</tr>
<tr>
<td>Firm age</td>
<td>.164*</td>
<td>.150*</td>
<td>.134*</td>
<td>.132*</td>
</tr>
<tr>
<td>Environmental munificence</td>
<td>.147*</td>
<td>.073*</td>
<td>.125*</td>
<td>.115*</td>
</tr>
<tr>
<td>Environmental dynamism</td>
<td>-.134*</td>
<td>-.127*</td>
<td>-.097*</td>
<td>-.110*</td>
</tr>
<tr>
<td>Firm slack</td>
<td>-.045</td>
<td>-.011</td>
<td>-.011</td>
<td>-.008</td>
</tr>
<tr>
<td>Independent</td>
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<td></td>
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<tr>
<td>TMT empowerment</td>
<td></td>
<td></td>
<td>.436***</td>
<td>.285***</td>
</tr>
<tr>
<td>Moderating</td>
<td></td>
<td></td>
<td>.439***</td>
<td>.443***</td>
</tr>
<tr>
<td>Interaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TMT incentive pay</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>TMT empowerment x TMT incentive pay</td>
<td></td>
<td></td>
<td></td>
<td>.103*</td>
</tr>
</tbody>
</table>

| R                                  | .337       | .535       | .657       | .665       |
| Adjusted R²                        | .073       | .250       | .400       | .408       |
| Δ R²                               | .113       | .286       | .432       | .442       |
| F                                  | 2.840      | 7.97***    | 13.67***   | 12.99***   |

n = 210; * p ≤ .05, ** p ≤ .01, *** p ≤ .001
Figure 1 Completely Standardized Estimates of the Final Model
Note: 1. This is a simplified version of the examined model. To simplify the figure, the direct links between CEO-TMT exchange and firm performance are taken. 2. Control variables are depicted by dash line. 3. The path coefficients are standardized parameter estimates. N = 210, *p < .05, **p < .01, ***p < .001.

Figure 2 Moderating Role of TMT Incentive Pay
RESEARCH ANALYSIS AND RESULTS

Research Discussion

The study examines the relationships among CEO-TMT exchange, TMT psychological empowerment, and firm performance, which addresses the upper echelons perspective. The results support the theoretically derived causal model and key hypothesized relationships. The findings of this study show that high mean levels of CEO-TMT exchange appear to directly and indirectly enhance psychological empowerment and firm performance. This study extends Hambrick’s (2007) and Carpenter et al.’s (2004) research, which established the critical theoretical link between effective mechanisms at upper-echelons perspective, TMT process and firm performance.

The findings of this study also show that TMT psychological empowerment has a significant and positive correlation with firm performance. The study concludes that psychological empowerment enhances TMT performance. The findings of this study are consistent with recent upper echelons studies which have asserted that TMT psychological empowerment has an effect on performance outcome (Rababah, 2017a).

The significance of TMT psychological empowerment is also shown by its mediating role in the relationships between CEO-TMT exchange and firm performance. The partially mediating effect of psychological empowerment highlights the importance of TMT as the ultimate empowerment that generates strong top team performance and good firm outcomes. This study contributes to the upper echelons and empowerment literature by examining the collective psychological strength among TMT members and advance firm outcomes (Jackson, Joshi, & Erhardt, 2003). Contributing to empowerment research, by builds a far-reaching model that reveals a TMT interaction, to shape its members psychological and abilities in the workplace in which advance organizational performance (Lawrence, 1997).

Moreover, TMT incentive pay had a moderating effect, which, in association with psychological empowerment as perceived by TMT members, which can indeed enhance their perception and firm outcomes. The study shown that compensation system can provides very strong incentives to stimulate TMT psychological empowerment to complete a task and advance firm performance. They have proposed that reward is to be linked to dimensions of psychological empowerment, self-efficacy, it seems logical when a project needs various and important skills to create a sense of enabling, and self-determination when people complete a task will feel autonomous and having choices in determining the task (Gkorezi & Petridou, 2012).

This study contributes to the CEO-TMT literature. Examining the role of CEO-TMT exchange as a moderating in bridging the relationship between TMT psychological empowerment and firm performance, reveals the comprehensive influence that CEO-TMT exchange can have, as the internal dynamics and dispositional tendencies (Lin & Rababah, 2014). Further, an integrated consideration of CEO-TMT exchange facilitating the relationship between executives’ perceived empowerment and its resulting outcome highlights the significance of psychological processes in performance outcome, and both have significant strategic and behavioral implications (Ling et al., 2008; Peterson et al., 2003).

Additional, this study contributes to the upper echelons research. TMT research has been widely examined in Western firms, almost exclusively; US based (Glunk, Heijltjes, & Olie, 2001). This study takes a critical first step to explore firms in a variety of industries in Jordan. Therefore, the knowledge and understanding of Middle East business and their current TMT style may facilitate confidence in business relations, identifiable firm CEOs have prevailed over
the TMT processes and increases the generalizability of findings in the upper echelons research stream.

This study advances the conceptualization and measurement of psychological empowerment at team level. The study invokes a perceptual approach to psychological empowerment that is closely aligned to the work team context, as a set of cognitions (Thomas & Velthouse, 1990), also addresses the concept of psychological empowerment to increased task motivation of team members’ collective and their organizational tasks (Conger & Kanungo, 1988), and different drivers for team dynamics and performance (Kirkman et al., 2004).

This study also contributes to the team psychological empowerment research. Beyond gaining a greater understanding of the relative role of TMT processes in capturing the key interrelated and reinforcing elements of TMT psychosocial empowerment which has been related to the firm performance. Team members may therefore feel more empowerment, because CEO-TMT exchange may interactions within-team member differentiation in predicting team-outcomes (Boies & Howell, 2006). Thus, the cognitive constraints and biases of top executives have been considered important sources of organizational performance, and the facilitation of CEO-TMT exchange interactions among team member to shape its members psychological and abilities in the workplace in which effects on outcomes (Lawrence, 1997).

Research Implications

This study examines the extent to which certain CEO-TMT exchange is related to specific the psychological states and incentive pay of TMT members, as well as firm outcome. Consequently, the study has numerous implications, including bridging executive dynamics and identifying factors for predicting various firm-level outcomes.

First, upper echelon research should focus simultaneously on both the CEO and TMT characteristics, because their effects seem to be complementary. In the same vein, CEOs will be more apt to guide their firms and foster a climate that reinforces TMT organizational tasks. The study findings suggest that CEO-TMT boards should attempt to cross-functional interactions and interpersonal and informational exchanges. Executive training should foster the ability of firm executives to enhance TMT performance. For instance, training programs can highlight communication, problem-solving, and cross-functional courses.

Second, because aggressive CEO-TMTs try to create mechanisms to reduce risk (Papadakis & Barwise, 2002). It is importance for CEO decision to providing efficacy information. Therefore, TMT long-term pay indirectly reflects the degree to which TMT incentives work together, which reduces the risk of self-interested behavior. The organizations used intrinsic and extrinsic rewards for team members to improving project outcomes (Miller, Wiseman, & Gomez-Mejia, 2002). The notion here is that CEO interested in empowering their team members, they should develop an incentive pay system which will reward performance. On the other words, when TMTs willingness to share information and knowledge between members, they reflected the benefits incentive pay, which are building psychological empowerment members.

Thirdly, the preliminary findings of the present study are consistent with recent studies indicating that Jordanian culture is low in power distance because it has the region’s highest skilled workers (Alkailani, Azzam, & Athamneh, 2012). In considering the opposing forces of low TMT psychological empowerment and CEO-TMT exchange, an empowering style of leadership becomes important for doing business in Jordan (Carmeli, Schaubroeck, & Tishler, 2011).

Fourth, to prepare a firm for development of high performance, it is critical for the firm to manage a few executive process concerns and mechanisms. The findings of this study indicate
that a more complete understanding of what drives levels of firm performance may need to include some focus on how TMT members feel empowered within their work roles and the relationship they have with CEOs. CEOs thus need to make good use of their power and develop individualized relationships with a TMT and foster a climate of mutual trust (Dooley & Frxyell, 1999) so as to advance firm effectiveness.

Fifth, under different environment conditions, the most appropriate strategies can be selected and/or formulated when the strategy is harmonious with environment requirements. In other words, TMTs can respond flexibly to changes in the environment, which it becomes an even more significant factor in top team sociobehavioral integration (Chen et al., 2010), and those dynamic teams can generate more actions and, through these actions, better performance.

Finally, in cultural managerial implications, although organizational and environmental factors are complex and have unstable influences, TMT attitude is an important determinant of a cultural shift towards market orientation, but it occurs under conditions of high external risk and uncertainty. Moreover, given the lack of clarity and/or agreement on the practices of business, CEO-TMT exchanges in Jordan attempt to manage the company and emphasize the culture more as a dynamic process.

Research Limitations and Future Directions

This study provides evidence that advances an unexplored area of a TMT research. This study fills in the gap by investigating key CEO-TMT concerns and empowerment through the use of self-report measures provided by senior executives. An exploration of core self-evaluation framework in real business work teams may also provide useful results (Judge, Erez, Bono, & Thoresen, 2002). Further, respondents in this study represent at least 50% of the senior executives in a firm. Future studies can attempt to gather data from all TMT members (Carpenter et al., 2004). Future research could also consider using multi-source data to reduce the possibility of common method bias to increase the reliability of results (Lee & Nie, 2014).

Although this study takes a first step in exploring the CEO-TMT exchange, psychological empowerment, incentive pay and firm outcomes. Examination of the new mediating/moderating mechanisms highlights the TMT process, which is required to shape TMT psychological states and can be a strong indicator of a firm outcome. Future research should devote attention to the study of how members’ characteristics such as demographic variables affect their collective psychological states and performance outcome.

The sample in this study comes from Jordan. The generalizability is affected by the geographic, industry, and firm dimension scope (Wagner & Kemmerling, 2014). Due to the fast changing environmental factors especially those closely related to culture and society. One of the misleading recommendations researchers do is to generalize findings obtained from one culture to other cultures without careful consideration of major differences exist among these cultures (Alkailani et al., 2012). Despite the merits of sampling from the population of Jordan’s companies, the generalizability of research findings can be improved by selecting research samples and by implementing cross-cultural comparisons, such as, to other Arabic communities or countries with a similar cultural background.

In sum, this study’s examination of CEO-TMT exchange and incentive pay as driving forces of psychological empowerment, as well as association and valued advantages of firm performance, by using the upper echelon perspectives has shed light on the TMT research and practitioners. The study has thus highlighted the role of CEOs is critical in managing the interaction, in creating an atmosphere conducive for top managers to succeed and monitoring the maladaptive behaviors to advance performance of firms.
REFERENCES


Missing Link Between LMX Differentiation And Envy: Does Individual Level Culture Play Any Role?

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“Envy is the great leveler: if it cannot level things up, it will level them down.” Dorothy Sayers (1949, p. 771)

Abstract

The purpose of the study was to check the mediating role of social comparison between LMXD and envy, the moderating role of individual-level collectivism was also proposed. Time-lagged data (n=219) was collected from employees working in the service sector of Pakistan in three episodes. Data were analyzed through SMART PLS software while mediating role was checked through Variance Accounted For (VAF). The result shows that social comparison partially mediates the relationship between Leader-Member Exchange Differentiation and envy; however, the moderating role of individual-level collectivism has not been supported. On the basis of Importance-Performance Map, organizational managers were suggested to pay more focus on Leader-Member Exchange Differentiation as it has been found more important predictor of envy and they must work out some strategies for better off. Study limitations and future directions were also discussed.

Keywords: LMXD, Social Comparison, Envy, Individual Level Collectivism, Pakistan

Introduction

Human beings are always in pursuit of a societal obsession, which leads to admiration and enviousness. All humans face this envious behavior one way or the other (Treadway et al., 2017). Especially, when this issue comes to the organizational competitive environment, where employees always pursue to hold differential resources and preferred job assignments which leads to unbridled envy in remaining employees (Tai, Narayanan & McAllister 2012). Envy among all other
emotions (i.e., anger, sadness, guilt, anxiety, love, fear, shame, relief, jealousy, joy, hope, pride, gratitude, and compassion) has remained one of the core emotion in studies and their implications in business organizations (Lazarus and Cohen-Charash’s 2001). Parrott and Smith (1993) explained envy as “when a person lacks another’s superior quality, achievement, or possession, and either desires it or wishes that the other lacks it” (p. 906). From biblical times, and Socratic Dialogues (see. Plato, 2007) till now it is been studied in diverse domains like theology, economics, neuroscience, psychology and management (Cohen-Charash and Larson, 2016, Takahashi et al., 2009). In traditional literature, envy was observed as only malicious (negative emotion having negative outcomes) but later on revealed it was that it could be benign (positive emotions) as well (Yu & Duffy, 2016) having positive or uplifting outcomes. On the basis of empirical evidence, we know that its outcomes have been largely identified as counterproductive work behaviors, (Cohen-Charash & Mueller 2007; Khan, Quratulain & Bell 2014), interpersonal conflict, social undermining and job performance (Eissa & Wyland 2016), social loafing and distress (Thompson, Glasø, & Martinsen 2016), schadenfreude (Smith, 1996), vandalism and even murder (Habimana, & Massé, 2000). On the other hand, it has been studied largely, as an outcome of neuroticism (Krizan, & Johar, 2012), self-esteem, (Salovey 1991) and Leader-Member Exchange Differentiation (LMXD), Shu and Lazatkhán, (2017). Before Shu and Lazatkhán’s findings, Li, and Liao (2014) found that unequal distribution of potential resources (in-group and out-group in LMXD) goes beyond leader-dyad relationship resulting in unavoidable social comparison (Parrott & Smith, 1993), which may further result in envy among the employees of same group (Adams, 1965; Salovey and Rodin, 1984; Corcoran, Crusius, and Mussweiler, 2011). Nonetheless, despite of these matchless efforts, still there are number of issues which need to be resolved, like Anand, Vidyarthi, and Rolnicki (2018), Cohen-Charash and Larson, (2016), Epitropaki and Martin, (2015), Harms, Credé, Tynan, Leon, and Jeung, (2017), Li, and Liao (2014), Matta and Cornfield (2017), Navarro-Carrillo et al., (2017), Shu and Lazatkhán, (2017) directed that outcomes of leadership including LMXD explicitly, cannot be properly materialized without incorporating prevailing culture into the account. Specifically, talking about collectivist cultures like Pakistan’s, Hofstede, Hofstede and Minkov, (2010), Rockstuhl, Dulebohn, Ang, and Shore, (2012), Lebel (2017), followed by Ashkanasy, Humphrey and Huy (2017) directed that employees in collectivist culture, especially while in leader-followers relationship, having discriminated distribution of resources by the leader (LMXD), may prefer to maintain overall harmony and they may not get envious because they prefer collective gain over their individual superiority.

In response to these imperative research calls, this study is aimed to systematically examine the individual level collectivism (INDCOL - for review, Triandis, 1995, 2001) moderating variable between LMXD and envy. INDCOL is actually operationalization and extension of individualism-collectivism cultural dimension at the individual level, instead of country/national level as it was originally done by Hofstede, (1980). Oyserman, Coon, and, Kemmelmeier, (2002); explained that individual emotions, attitude can be better predicted by understanding individuals’ values on cultural dimensions. In their meta-analysis found that there is heterogeneity among the individuals of single national culture. So studying the culture at the individual level may allow us to understand collectivist individuals’ response toward envy in more details. Through this research we aim to answer two research questions specifically, (a) does path mechanism of social comparison establish the relationship between LMXD and envy (b) does INDCOL play any significant moderating role on the direct relationship between LMXD and envy.
It is believed that this emergent study will be a prodigious and eye-opening attempt to transcend earlier research in the area of leadership and emotions. This study will open the “black box” of leadership and it will be helpful to the organizational leaders, managers, and supervisors, to determine the quality of exchange with members through which optimum use of the human resource is possible. This study provides cultural contributions to leadership and emotions domain.

While talking about theoretical advancements, this study is an attempt to further edify Affective Event Theory (AET) by Weiss, (2002); Weiss and Cropanzano (1996) as directed by Martin, Thomas, Legood, and Russo (2017) in their very recent astounding Meta-Analysis. While practically this study will provide the reason that why leaders need to revisit their exchange with subordinate’s needs as Homan and Greer, (2013); McIntyre and Foti, (2013) argued that leadership should be collective rather individual’s focus and should focus on the bigger picture rather than chunks of employees.

**Literature Review**

**Leader-Member Exchange Differentiation, Social Comparison, and Envy**

Social comparison in our personal and work life is unavoidable being a natural process, (Bandura & Jourdan, 1991). Buunk and Gibbons (2007) defined it as “a central feature of human social life” (p. 3). Social scientists like Festinger (1954) developed a consensus that social comparison is an essential component of change. Wood (1996) defined it as “the process of thinking about information about one or more other people in relation to the self” (pp. 520–521). It’s a psychological process or aspiration to have something which someone else is enjoying but you are lacking (Smith & Kim 2007). In organizational domains, LMXD has been found as one of the major antecedents of social comparison between the employees working under the same leader. LMXD, as an extension of Leader-Member Exchange theory, (traditionally known as “Vertical Dyadic Linkage theory”) has been explained as differentiated treatment of the leader toward his underlings (Graen & Cashman, 1975; Liden & Graen, 1980), resulting in high and low relational discrimination. Employees having high-quality relations are known as “trusted subordinates” or “in-group employees” and employees having low-quality relations are known as “hired hands”, or “out-group” (Dansereau, Graen, & Haga 1975; Dienesch & Liden, 1986; Liden & Maslyn, 1998). In-group employees enjoy distinct benefits including favorable performance appraisals, pay raises, promotions, empowerment, support in career development, while out-group employees do not have these perks (Graen, Wakabayashi, Graen, & Graen, 1990; Kacmar, Witt, Zivnuska, & Gully, 2003). This uneven treatment not only questioned leader’s abilities (Lo, Abang, Ramayah, & Wang, 2015) but also foster comparative process especially among the employees of out-group about their standings with the leader and at the workplace too (Festinger, 1954; Greenberg, Ashton-James, & Ashkanasy, 2007). These employees may feel unsettled in the workplace and could view in-group employees as “kiss-up” (striking for own benefits). Furthermore, Vidyarthi, Liden, Anand, Erdogan, and Ghosh (2010) claimed this comparison will not be limited to the cognitive component but will further lead toward more critical emotions like envy. Adams, (1965); Salovey and Rodin, (1984) in their lab experiment, and recently Nabi, and Keblusek, (2014) identified that there is no stronger predictor of envy other than upward social comparison ($\beta=.41$, P<.001). Cogliser and Schriesheim, (2000) and Scandura, (1999) explained that one of the core assumptions of social comparisons among coworkers is concerning to quality of exchange with their leader, and its perception directs their further attitude toward colleagues, work, and workplace.
Our mediating argument is also cognizant through AET (Weiss, 2002; Weiss & Cropanzano, 1996). Primarily, AET explained that employees’ attitude and behaviors depend on the emotions which arise in response to positive or negative affective events (hassles or uplifts) happening in the organizational environment (Cropanzano, Dasborough, and Weiss, 2017). While explaining these affective events of AET in management domain, Humphrey and Huy, (2017) contended that differentiated allocation of resource by leader with members can be a key lens through which member’s emotions can be explained (see. Butts et al., 2015; Dasborough and Ashkanasy, 2002; Herman, Troth, Ashkanasy, & Collins, 2017). Very recently Martin et al., (2017) have also directed that AET can be a strong logical explanation for LMXD and employees’ feelings and emotions. Leaders’ discriminated mood state, task allocation, feedback or uneven body language is observed by the members as affective events thus trigger comparison by evaluating their standings with the supervisor at the workplace. Thus with the support of Affective Event Theory and the above-mentioned arguments, the following hypothesis can be drawn:-

H1. Leader-Member Exchange Differentiation has a positive significant relationship with employees’ envy.

H2. Social comparison mediates the relationship between Leader-Member Exchange Differentiation and Employee Envy.

**Moderating Role of Individual-Level Collectivism**

Moderating role of INDCOL (Markus & Kitayama, 1991; Wasti, 2003; Singelis, Triandis, Bhawuk, & Gelfand, 1995) has been proposed in the light of AET and direction provided by Vidyarthi et al., (2010), Martin et al., (2017), Lebel (2017), followed by Ashkanasy, Humphrey and Huy (2017), those expected that effective events like LMXD may be perceived and responded differently by the person having different norms, values, and culture. Scholars like Martin, et al., (2017), Ashkanasy, Humphrey and Huy (2017), further directed that employees’ cognitive or emotional outcomes in the response of LMXD cannot be materialized appropriately until we incorporate prevailing individual cultural into the account. Explaining the importance of culture, Kristof-Brown, Zimmerman, and Johnson (2005) argued that culture is a more influential part of the thought process and attitude than reality itself. However, decades ago culture was assumed to be national level phenomena and assumed to be operationalized at the national level only but later, after dominant work was done by Hui and Triandis, (1986), Triandis, et al., (1995), Earley and Mosakowski (1995), Singelis, et al., (1995) open further venues for operationalization of culture at the individual level. These studies collectively argued that clear differentiation between collectivists and individualists may exist within the same social culture in the form of individual preferences. So, it can be assumed that culture can be operationalized as contingent at the individual level within the same national culture (Erdogan & Liden 2006). Coming back to our point, Triandis, (2001) further explained the work of a legendary cross-cultural researcher, Hofstede’s (1980) that collectivism-individualism are the most viable and significant cultural dimension because these two dimensions also integrate the essence of remaining dimensions. Triandis (1995), define collectivism as a cultural syndrome where individuals “see themselves as parts of one or more collectives (family, co-workers, tribe, and nation); are primarily motivated by the norms of, and duties imposed by, those collectives; and emphasize their connectedness to members of these collectives” (p. 2). Hofstede (1980); Hofstede, Hofstede, and Minkov, (2010) expected that in collectivist social settings, people are more concerned about group-level welfare as opposed to their self-interest as opposed to individualists where they prioritize and pursue self-interests over a group or societal
welfare. Opposing to this, Individuals with high collectivist values, are more likely to be interdependent in their work and social settings also they define themselves in relational terms and have a more dynamic take towards living across different external context. In our concern, Hofstede, also expected that the effect of LMXD on social comparison will be weaker in a collectivist culture than individualistic culture. Pakistani workforce having 76 points out of 100 points at collectivist scale (Hofstede & Hofstede 2005) is expected to have great tolerance against unfairness and injustice resulted from LMXD. In a similar manner, Triandis (1995, 2001) also expected that collectivist people are more inclined towards interdependency of society thus they prefer group harmony over their self-interests. So, it can be ascertained that collectivists prefer harmonious relationship through avoiding retaliation or getting envious of unfair deals like LMXD. In addition to this, in collectivist societies employees are expected to be more obedient, respectful and loyal to their leader despite his/her differentiated exchange with them against the principles of exchange. On the basis of aforementioned evidence and arguments following hypothesis is drawn:-

**H₃.** Individual-level collectivism moderates the positive relation between Leader-Member Exchange Differentiation and employee envy in a way that relationship will be weaker for individuals those are high in collectivist and vice versa.

![PROPOSED MODEL](image)

**Figure I**: PROPOSED MODEL

**Methodology**

The hypothetico-deductive method is used to test the effect/relationship between the proposed variable. Keeping the time-sensitive nature of the research model, time-lagged data through self-administered questionnaires have been collected. Two months gap between each episode has been observed. Self-reported data pertaining to independent variable, LMXD was collected in first episode, data related to mediator (social comparison) was collected in 2nd phase while data related to dependent variable (envy) and moderator (Ind-Col) was collected in 3rd phase.

**Population, Sample, and Unit of Analysis**

Employees working in medical fields and banks (nurses and administrative staff) are proposed as the population of the study because as per our model requirements, these employees are more oppressed due to their sensitive nature of duty and considered underappreciated as well (Adler et
al., 2017; Cordes and Dougherty, 1993). These employees are having more “people-work” thus subject to more negative emotions. Specifically, sample (n=219) of the study comprised of individuals working in private hospitals and banks located in different regions of Pakistan. Keeping model’s requirements in mind unit of analysis was individual.

**Administration of Questionnaire**

Employee No/ID is a permanent feature which remains same over the service. Same has been used as an identification/matching of questionnaires returned by the single respondents. In first turn total, 231 questionnaires were received back, while in last episode total 224 questionnaires were received back out of which only 219, fulfilled the criteria so same has been used to study sample.

**Confidentiality of the Respondents**

Along with written covering letter on the questionnaire, the author or some representative on author’s behalf was present there during data collection process to explain the purpose of the study and to answer queries raised by the respondents. All the participants have been treated in accordance with the ethical guidelines of Institutional Review Board (IRB) and American Psychological Association (APA) concerning to privacy and confidentiality. Respondents were informed about the usage of collected information and they were ensured that response given by them will be used for sole purpose of the research. Participants were recruited strictly on a voluntary basis after explaining the purpose of the study, and asking if anyone would be willing to participate. They were also offered withdrawal of their responses/duly filled questionnaire within two weeks after submission if they feel any concern; otherwise afterward these will be destroyed to ensure concealment.

**Scales / Instruments used in the study**

All the variables proposed/used in this study, are well established and operationalized in previous literature. So, to collect the data of all the variables, following well established / valid scales were used:

- **LMXD.** According to Liden, Erdogan, Wayne, and Sparrowe (2006), variance in individual-level obtained through Leader-Member Exchange scale can be used as Leader-Member Exchange Differentiation. So, data has been gathered through six items, five points, a Likert scale which was developed by Graen and Uhl-Bien (1995). A sample question is “My supervisor understands my problems and needs”.

- **Social Comparison.** Social Comparison has been measured using 11 items, five points Likert scale by Gibbons and Buunk (1999). Sample item of the scale is “I often compare myself with others with respect to what I have accomplished in my life”.

- **Envy.** Envy has been measured through five items, a seven-point scale developed by Vecchio's (1995). Sample item of the scale is “My supervisor values the efforts of others more than s/he values my efforts”.

- **Collectivist Culture (Individual Level).** Cultural values of the respondents have been measured using five items from the INDCOL scale developed by Singelis et al., (1995). One sample item of the scale is “When I succeed it is because of my abilities”.


Data Analysis and Results

Demographics of respondents
Demographics of the respondents were checked through frequency analysis using SPSS (version 22). Frequency analysis shows that majority of respondents (64%) were male. The major age (45.5%) range was between 31 to 40 years. The majority of the respondents (46%) were having master degree. More than 47% of the respondents were having job experiences of 1 to 5 years.

Data Analysis
For data analysis purpose Partial Least Squares (PLS) analysis with the help of Smart PLS version 3.2 was used. As per recommendation of Hair, Hult, Ringle, and Sarstedt, 2013, two-stage process for Structure Equation Model (SEM) through which we in step-I, validity, and reliability of the measures (measurement model) was checked and in the next step to check the significance of the variables/path coefficients, items loading, bootstrapping method (structural model) on 5000 resamples was implied.

Measurement Model
According to Chin, 1998, measurement model is used to determine the loading into their concern variable. Simply we can say that through this step we can analyze the convergent and discriminant validity of the measurements used in the study. For instance, Table I shows that the indicators’ reliability, also known as factor loading, which exceeds 0.7 hence, passed the item-level convergent and discriminant validity test (Henseler et al., 2009). Three items of social comparison (SC9, SC10, and SC11) were discarded, due to lower standardized factor loadings. Same is presented in Figure-II as well. Table I also shows that internal consistency of items towards the construct is in the acceptable range, i.e. all the constructs’ Alpha Reliability (α) and internal Composite Reliabilities (CR) are greater than 0.7 (Cronbach, 1951; Hair et al., 2010). In addition, Table I also shows the Average Variance Extracted (AVE) obtained through measures for the same purpose, were higher than the recommended value of 0.5 and fulfill the criteria of convergent validity at construct level (Fornell and Larcker, 1981).
Table I: Variable’s Validity and Reliability

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Loadings</th>
<th>AVE</th>
<th>CR</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVY1</td>
<td>0.854</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENVY2</td>
<td>0.836</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENVY3</td>
<td>0.872</td>
<td>0.670</td>
<td>0.910</td>
<td>0.876</td>
</tr>
<tr>
<td>ENVY4</td>
<td>0.820</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENVY5</td>
<td>0.697</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IC1</td>
<td>0.743</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IC2</td>
<td>0.650</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IC3</td>
<td>0.825</td>
<td>0.585</td>
<td>0.875</td>
<td>0.823</td>
</tr>
<tr>
<td>IC4</td>
<td>0.758</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IC5</td>
<td>0.467</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LMXD1</td>
<td>0.743</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LMXD2</td>
<td>0.650</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>LMXD3</td>
<td>0.825</td>
<td>0.701</td>
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<td>0.914</td>
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<tr>
<td>LMXD4</td>
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<td></td>
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<tr>
<td>LMXD5</td>
<td>0.834</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LMXD6</td>
<td>0.743</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC1</td>
<td>0.627</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC2</td>
<td>0.803</td>
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<td></td>
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</tr>
<tr>
<td>SC3</td>
<td>0.852</td>
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</tr>
<tr>
<td>SC4</td>
<td>0.793</td>
<td>0.570</td>
<td>0.913</td>
<td>0.890</td>
</tr>
<tr>
<td>SC5</td>
<td>0.745</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC6</td>
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<tr>
<td>SC7</td>
<td>0.752</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>SC8</td>
<td>0.738</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

IC= Individual Level Collectivism, LMXD=Leader-Member Exchange Differentiation, SC= Social Comparison

AVE=Average Covariance Extracted, α = Alpha Reliability, CR=Composite Reliability, n =219
In next step, discriminant validity was assessed, which ensure that the variable of interest does not have a reflection of any other variable; which is indicated by low correlations between the measures of interest and others. Results in Table II shows that the square root of Average Variance Extracted (AVE - diagonal values) of each construct is greater than the corresponding value of correlation coefficients, which advocates discriminant validity (Fornell & Larcker, 1981).

**Table-II: Discriminant Validity**

<table>
<thead>
<tr>
<th>Constructs</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ENVY</td>
<td>.818</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Individual’s Collectivism</td>
<td>.450</td>
<td>.764</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. LMXD</td>
<td>.544</td>
<td>.453</td>
<td>.837</td>
<td></td>
</tr>
<tr>
<td>4. Social Comparison</td>
<td>.592</td>
<td>.474</td>
<td>.721</td>
<td>.754</td>
</tr>
</tbody>
</table>

**Bold Values on the diagonal are square root of AVE and off-diagonal values are correlations.**

Henseler, Ringle, & Sarstedt, (2015) have also suggested the multitrait-multimethod matrix, to assess discriminant validity, the heterotrait-monotrait (HTMT) ratio of correlations. Discriminant validity was also confirmed through a new method, which results are presented in Table-III. According to Kline, (2011), if the HTMT value is greater than 0.85 then discriminant validity is a problem of. As shown in Table 5, however, all values are good to establish discriminant validity, i.e. HTMT.85 i.e. <.85.
Table-III: Heterotrait-Monotrait Ratio (HTMT)

<table>
<thead>
<tr>
<th>Constructs</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual's Collectivism</td>
<td>0.506</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LMXD</td>
<td>0.601</td>
<td>0.508</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Comparison</td>
<td>0.663</td>
<td>0.548</td>
<td>0.799</td>
<td></td>
</tr>
</tbody>
</table>

Grey boxes are reporting format for HTMT results

Structural Model

As per Hair et al. (2013) suggestions, to assess the structural model, $R^2$, $\beta$, and their corresponding t-values through bootstrapping procedure having re-sample of 5000 is essential. Additionally, they also suggested that researchers should also report the predictive relevance known as ($Q^2$) and the effect sizes also known as ($f^2$). As per our concern, LMXD positively and significantly affects envy ($\beta = 0.200; p < 0.05$) and $R^2$, 0.420. $R^2$ shows the explanatory power of the predicting variable i.e. LMXD on the respective construct envy (see Figure). So, our results supported our hypothesis 1. To check the mediation role of social comparison, we computed the effect sizes ($f^2$) of the exogenous construct i.e. LMXD on endogenous envy. Effect size measures tendency of a phenomenon of interest and its presence in the study population. Mediation was checked through variance-accounted-for (VAF) metric. VAF is defined as the ratio of the significant indirect effect to the direct effect of an exogenous variable on the target variable in the model, Hair et al. (2013).

The results are shown in Table-VI. Based on Cohen's (1988) guidelines, effect size 0.02, 0.15 and 0.35, will be considered small, medium and large effect sizes, respectively. As shown in Table-VI, while LMXD has a medium effect size on envy ($f^2 = .032$), Social Comparison to envy has a medium effect size ($f^2 = .102$). Specifically, the medium effect size (Social comparison) indicates that the existence of social comparison; yields better result in envy. Similarly, according to Hair et al. (2013), VAF<0.2 represents no mediation; 0.02 ~ 0.08 represents partial mediation, and VAF ≥.08 represents full mediation. So, in this case, social comparison partially mediates the relationship between LMXD and envy (VAF =.56). Moreover, while talking about the moderating role of Ind-Col on the relationship between LMXD and envy, our data reflected that moderating role becomes insignificant ($p=.415$, ns).
The major objective of the study was to check the mediating role of social comparison between the relationship of LMXD and envy, furthermore moderating role of individual-level collectivism was also tested. Both the gaps were ignored in the previous literature, despite repeated research calls as cited in the introduction part. Result of data analysis shows that our predictor, LMXD has significant positive relationship with our dependent variable, envy as it was earlier found by various researchers (Adams, 1965; Salovey & Rodin, 1984; Corcoran, Crusius, & Mussweiler, 2011, Lo et al., 2015), and Smith & Kim 2007). Thus, these results supported our hypothesis 1 which is, "Leader-Member Exchange Differentiation has a positive significant relationship with out-group
employees’ envy toward in-group employees”. The reason behind this support is very natural i.e. everyone in this world especially in work life, wants to get more and more prestige, important assignments, perks, and privileges. Boss or leader’s acquaintanceship is the most effective way to gain these gains. However, if due to any reason, if someone cannot manage to get into the close relationship with the boss, he will be jealous of those who are availing these privileges resulting in envy. Our 2nd and the more important hypothesis was about the mechanism of social comparison, which creates the relationship between Leader-Member Exchange Differentiation and employee envy, was also supported. As per Treadway et al., (2017) social comparison is a built-in function of the human creature. At the workplace especially, where the environment is more competitive, it’s too hard to remain unvaccinated from this phenomena. On the other hand, this is what which keep us motivated and enthusiastic to look and move forward. So, while talking about LMXD and its relationship with social comparison and envy, leader is responsible for the good performance of his whole team and he has to pay equal attention and treatment to each member of his team, but if he violates this and do unequal distribution of resources, awards and rewards, comparison amongst the employees will start, ultimately resulting in envy. Furthermore, our third major hypothesis was related to cultural dimension i.e. collectivist society and its operationalization at the individual’s level (Triandis, 1995, 2001). The reason behind this hypothesis was that in previous studies it was assumed that envy is culturally bound i.e. it has different implications in different cultures (Hofstede 1980; Hofstede, Hofstede, and Minkov, 2010; Triandis 1995). Our data evidence is not in support of this assumption thus the hypothesis 3 which is “Individual-level collectivism moderates the positive relation between Leader-Member Exchange Differentiation and employee envy in a way that relationship will be weaker for individuals those are high in collectivist” has not been supported. In a collectivist society, it is believed that individuals prefer group or societal gains moreover personal or individual’s gains. Our results are somehow inclined towards the findings of Callaghan et al., (2005) and Walcot, (1978). According to these authors, conceptualization of envy is universal irrespective of prevailing culture, its dispositional factor which may not be influenced with a change in cultural values. Moreover, in Figure-IV, given below, it can be seen that culture has not so much influence/importance for predicting envy.

**Figure IV: Importance - Performance Map**

![Importance-Performance Map](image)

Research Implications

Envy is a universal unpleasant emotion which occurs as the result of a process of unfavorable social comparison with a person or group of people who occupy an advantageous position in an
important personal domain. However, due to its hostile nature, normally it has been concealed, which make it more difficult to study. In this study, it has been tried to explore the reasons of envy so a rigorous stance can be created about its reasons and implications.

One of the important implication can be seen while looking at Figure-IV, in which it has been presented that LMXD as compared to culture and social comparison, has more strength to predict envy. Organizational managers must look into this aspect while practicing their managerial / leadership practices in the organizations. While, for the strategic move, managers should incorporate some strategies through which differentiation (although not avoidable) can be mitigated or some strategies may be adopted through which its exploitation may be reduced.

Limitations and Future Research Directions

The bulk of research has been documented about positive aspects of LMX and LMXD but very little evidence has been found which explore the paradox of these important aspects of business organizations. Another paucity of this attempt, envy has its two facets, i.e. benign and malicious, however, in this study, only the general construct of envy has been studied. Dimension wise study of envy may give more clear results. Furthermore, employees' reaction toward leadership attributes greatly depends on resources being held by the employee himself like his personality type his psychological capital etc. In future research looking at it in these aspects may give more insightful outcomes.

References


Bryman, D. Collinson, K. Grint, B. Jackson, & M. Uhl-Bien (Eds.), *Sage handbook of leadership* (pp. 311–325).


Economic Aspects of Literacy on Humans in District Nowshera

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Abstract

Development of a nation is measured by its literacy rate. In Pakistan different literacy programs are underway but still we are far away from the desired destination. The study entitled “Economic aspects of literacy on the lives of humans in District Nowshera” was to find out the blessings and areas of development by literacy and the hurdles that are being created by illiteracy. It was a survey type study and the population was divided into four zones. For convenience a sample size of 256 households were selected for survey. The total population from 256 households was 1551 persons in which 1115 persons were aged 10-59 years. The desired literates were 288 out of which 215 participated in the survey. The collected data was administered using statistical procedures like sum, mean and t-test. The results of the study were identified considerable development in the standard of the literate lives and found out significance disparity between male and female and rural and urban. It was suggested that government and NGOs should give priority to literacy by keeping strict check and balance policy and give incentives to literates.

Keywords: Economics, Development, Literacy
Introduction

Literacy can be defined in several thinkable denotations; it is the capability of persons how to manage with communications living in their customs and traditions (Strassman, 1983). Literacy is just like collection of skills together with the capacity to accomplish undeveloped understanding and mathematical responsibilities essential for the fitness maintenance situations. Reading, writing and numeracy are expected to be the base line for literacy. Reading 30 words per minute, writing 7 words per minute and writing and reading numerals from 1 to 100 are the basic abilities of a literate person (Mitra, 2007).

In the worldwide perception, Literacy can be defined in Bangladesh as the capability to read and write in any local or foreign language while grade 9th passed is counted as literate in Canada. In India, an individual reading approximately 40 words in a minute, having writing speed of 10 words in a minute and yielding a dictation of 7 words in a minute in any language is measured literate. The one aged 10 or more and has been admitted in school is considered as literate in Malaysia. An individual who can only read and write is counted as literate in Tajikistan. UNESCO (2008) defines literate internationally as “a person reading and writing with comprehension a simple statement in any linguistic and can perform simple daily life arithmetic.”

In Pakistani National context, literacy definitions have been changed from time to time. In the census of 1951 literacy was defined as “an individual who can read from a printing material in any language”. After 10 years in 1961 the definition was enhanced as literate is a person who can read with comprehension a simple letter in any verbal communication. In the 1972 census writing was also included with reading. According to 1972 census a literate person is the one who can read and write with understanding in any language. In the era of Marshal Law in 1981 a literate individual was the one who has the ability in reading newspaper and to writing an artless letter. In 1998 the previous definition of literacy was modified as a literate person is expected to recite newspaper and carve a letter in any dialectal (Government of Pakistan, 2006).

Beyond reading and writing, literacy is the capacity to behave like a well-educated individual. Among reading, writing and numeracy, writing is considered the most crucial for children. All these require a guided instructions and practices (Wallace, 2004). The role of literacy in developing countries is very important (Lara, 2007). Literacy offers all types of education like political, leadership skills, vocational and social awareness. Literacy is considered to be the backbone of the progress. Literate manpower proves vital for the progress of the country. Literate people have social awareness and know the worth of the resources. They can easily utilize and convert limited resources in a much better way. They can adjust themselves in any circumstances. Literate people are considered to be the most democratic. They can solve their problems without interfering others and make a prosperous society. The previous aspect of literacy has been changed. In the present circumstances literacy is considered to be the best tool of life (Hall, 2003).

Review of Related Literature

Literacy is important in the context of developing social interaction among the public. Literate people cooperate and communicate with each other in a better way. History shows that the countries with strong political will for literacy have achieved their goals efficiently. These countries have strongly opposed the illiteracy and tried all their best to use the available resources for the eradication of illiteracy. Primary education became compulsory. In the result, developed society has been formed (Rashid, 2009). Children may have impact on economic development after ten or more years. Adults have direct impact on the economic development.
Their attitude must be positively changed. So it is necessary to educate the adults first through literacy programs (Benson, 2009).

In literacy programs, learners do not attend the school regularly. It is a part time education. The curriculum is embedded and skills generating. Literacy is a short and sharp program in which the learners learn all the basic abilities in a short interval of time. Literacy brings changes in the information, knowledge and understanding of the learners and skills of life are learned. Literacy is connected with the socio economic conditions of the people. It has often showed a positive relationship with budget of the families (Justice et al., 2003).

Less developed countries have seriously felt the importance of literacy and folding their objectives in a productive way. They are bringing their mass population towards the functional literacy. Most of the adults have not passed through the formal mode of education and reluctant to adjust themselves in the formal system of education. Workers and farmers are the main target of literacy as they are in the field, so they may be given priority in the literacy programs. Pakistan saw many fluctuations in the year 2011. Due to high growth rate and low level of investment Pakistan remained behind the Millennium Development Goals (PAKISTAN One UN Program Report 2011).

Pakistan is a country which has seen many ups and downs in the field of education. Several experiences have been done to cope with the illiteracy but no program has been fully successful. In the last two decades Pakistan has steadily showed increase in the economic development. In the field of education the achievement rate is significantly low.

In Pakistan, the organized adult literacy had been initiated for the first time in 1985 under the name of “NaiRoshni.” This project drew the people towards the literacy education. But unfortunately the project was soon abounded due to several constraints. A World Bank report 2010 shows that Pakistan is extremely behind the target. In Dakkkar conference declaration Pakistan expected 100% literacy by 2015. Pakistan hardly reached the 52% mark by 2010. The said report has found several causes of not achieving the target such as high dropout, urban/rural location, school mapping, shortage of well trained and dedicated teachers and lack of teaching materials. Political leaders and bureaucracy did not take any interest in uplifting of literacy programmes on urgency level. Budget allocations remained inadequate. According to the partially conducted census 2008 the literacy rate of Pakistan is very low i.e. 52% with wide range variation in urban/rural and male/female basis. Literacy rate for urban population was 63% as compared to rural literacy rate of 34%. There was a huge gender. Male literacy rate in urban areas was 70% against female literacy rate of 55%. Similarly in rural literacy rate of males was 46% against the female literacy rate of 20%. Funds were taken from the donor agencies to enhance literacy. All these efforts failed due to its sustainability (Qureshi, 2002).

Literateness proportion of Pakistan as 52.5% which is composed 63 percent of males and 38 percent of females. This indicates a wider gender gap. As far as female literateness proportion is concerned, two out of every three females are illiterate. A huge hole is present in the rural urban location. Rural literacy 39 percent is lower than urban literacy of 70 percent. In Pakistan several schools are used for different functions and self uses of the people rather than literacy. People used these schools for their animals (Saleem, 2002).

Feudal system of Pakistan is the main barrier in the uplifting of literacy. The southern Punjab, Sindh and Balochistan are main privileged areas. The current literacy position of Pakistan is not satisfactory. Several steps will be taken to enhance the status of literacy of the country. Different programs will be introduced to raise the literacy rate to 86% by 2015 (Rasheed, 2004).
Objectives of the Study

a) Identification of literates using a household survey sheet in the population of district Nowshera.

b) To find out the economic aspects of literacy of the population.

c) Application of literacy benefits to the families of participants in district Nowshera.

Research Methodology

This was descriptive type survey research, which was engrossed on the economics aspects of literacy on humans in the selected urban and rural areas of District Nowshera. In such type of survey generally two tactics i.e. de-jure and de-fecto are used to collect data from the population. De-jure technique counts the people in their usual place of living while de-fecto technique is used to count the people in any place of their findings during the data collection period. In the current study de-jure technique has been used to collect the data from population. The collected data was tabulated on the basis of de-jure techniques. To find out the economic aspects of literates of age range of 10-59 tests was organized. De-jure and de-fecto techniques and test are mostly in social sciences.

Population of the Study

Population of the study involves of the males and females in the age group 10-59. The respondents belong to urban and rural areas of District Nowshera who have have passed 5th grade examination and left over before completing 8th grade level.

Sample of the Study

Large size of sample is usually assumed for accurate survey still the researcher preferred small size of sample since it was easy to achieve, visible and small cost convoluted. To collect the data the sample was stratified in 4 zones. Each zone was divided in two parts i.e. urban and rural part. 4 villages and 4 towns from each Zone of District Nowshera were unsystematically selected. Equal numbers of houses were selected from urban and rural areas. To get estimate of literates 8 houses from each village or town were randomly selected. A total of 16 villages and 16 towns were selected from the district Nowshera. Hence the number of total houses was 256. The study was instigated using the method of stratified cluster sampling. Every Zone was measured one stratum and inside each Zone the study followed the sampling method used 4 strata, each village/town was considered as cluster, so in each stratum 8 clusters were measured. Henceforth, the study comprised of a total 4 strata (4 Zones), 32 clusters from 4 Zones. Picture of sample is as below:
Instrument of the Study

To check the literacy rate of the respondents a questionnaire was constructed in two parts. First part was about the basic information and characteristics of the respondents while second part was about the role of literacy. Expert opinions were obtained to make the instrument valid. It was further refined through pilot testing. The reliability coefficient of the first part was 0.94, while that of the test part was 0.85.

Data Collection and Analysis

Data assemblage is a complex process. The researcher made plans to reach the respondents. The researcher visited and met the native leaders, prominent people, prayer’s leaders and social workers to aware the respondents in the data gathering process. Introductory sessions were
conducted to aware the respondents about the importance of the study and their role in the process of response. These sessions were very fruitful in establishing a good connection among the respondents and researcher. Convenient timing schedule for survey was drawn for the data gathering. As female respondents were also included in the study, so female health workers were haired for this purpose. In the first phase all the targeted respondents of age group 10-59 were recognized. After recognizing the targeted population, the respondents who have completed primary education but left before completing the elementary level were detached. In the second phase a questionnaire was distributed and filled with the help of Lady Health Workers (LHWs) who were already trained for this purpose. The data collected via questionnaire was encoded and analyzed through simple means and frequencies through SPSS package.

FINDINGS AND DISCUSSIONS

Findings

Table 1: Gender

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>133</td>
<td>61.9</td>
<td>61.9</td>
<td>61.9</td>
</tr>
<tr>
<td>Female</td>
<td>82</td>
<td>38.1</td>
<td>38.1</td>
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<tr>
<td>Total</td>
<td>215</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 shows that 133 males and 82 females participated in the survey.

Table 2: Zone

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pabbi</td>
<td>48</td>
<td>22.3</td>
<td>22.3</td>
<td>22.3</td>
</tr>
<tr>
<td>Nowshera</td>
<td>67</td>
<td>31.2</td>
<td>31.2</td>
<td>53.5</td>
</tr>
<tr>
<td>Akora Khattak</td>
<td>53</td>
<td>24.7</td>
<td>24.7</td>
<td>78.1</td>
</tr>
<tr>
<td>Nizampur</td>
<td>47</td>
<td>21.9</td>
<td>21.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>215</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 2 shows zone-wise participant. Most participants belong to Nowshera while least participants belong to Nizampur.

Table 3: Location

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>112</td>
<td>52.1</td>
<td>52.1</td>
<td>52.1</td>
</tr>
<tr>
<td>Rural</td>
<td>103</td>
<td>47.9</td>
<td>47.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>215</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 shows urban/rural location of the participants. Urban participants are more than rural participants.
Table 4: Literacy brought change in your life

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agreed</td>
<td>173</td>
<td>80.5</td>
<td>80.5</td>
<td>80.5</td>
</tr>
<tr>
<td>Agreed</td>
<td>35</td>
<td>16.3</td>
<td>16.3</td>
<td>96.7</td>
</tr>
<tr>
<td>Uncertain</td>
<td>4</td>
<td>1.9</td>
<td>1.9</td>
<td>98.6</td>
</tr>
<tr>
<td>Disagreed</td>
<td>3</td>
<td>1.4</td>
<td>1.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>215</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 4 shows that most of the participants (80.5%) were strongly agreed that literacy changed their life.

Table 5: Literacy changed your attitude

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agreed</td>
<td>189</td>
<td>87.9</td>
<td>87.9</td>
<td>87.9</td>
</tr>
<tr>
<td>Agreed</td>
<td>20</td>
<td>9.3</td>
<td>9.3</td>
<td>97.2</td>
</tr>
<tr>
<td>Uncertain</td>
<td>4</td>
<td>1.9</td>
<td>1.9</td>
<td>99.1</td>
</tr>
<tr>
<td>Disagreed</td>
<td>2</td>
<td>.9</td>
<td>.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>215</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 5 shows that most of the participants (87.9%) were agreed that literacy changed their attitude.

Table 6: Literacy improved your temperament

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agreed</td>
<td>188</td>
<td>87.4</td>
<td>87.4</td>
<td>87.4</td>
</tr>
<tr>
<td>Agreed</td>
<td>21</td>
<td>9.8</td>
<td>9.8</td>
<td>97.2</td>
</tr>
<tr>
<td>Uncertain</td>
<td>4</td>
<td>1.9</td>
<td>1.9</td>
<td>99.1</td>
</tr>
<tr>
<td>Disagreed</td>
<td>2</td>
<td>.9</td>
<td>.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>215</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 6 shows that most of the participants (87.4%) were strongly agreed that literacy improved their temperament.
Table 7: Literacy helped you in employment opportunities

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
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<th>Cumulative Percent</th>
</tr>
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<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agreed</td>
<td>149</td>
<td>69.3</td>
<td>69.3</td>
<td>69.3</td>
</tr>
<tr>
<td>Agreed</td>
<td>35</td>
<td>16.3</td>
<td>16.3</td>
<td>85.6</td>
</tr>
<tr>
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<td>14</td>
<td>6.5</td>
<td>6.5</td>
<td>92.1</td>
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<tr>
<td>Disagreed</td>
<td>17</td>
<td>7.9</td>
<td>7.9</td>
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</tr>
<tr>
<td>Total</td>
<td>215</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 7 shows that most of the participants (69.3%) were strongly agreed that literacy helped them in finding jobs.

Table 8: Literacy programs improved your skills

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agreed</td>
<td>154</td>
<td>71.6</td>
<td>71.6</td>
<td>71.6</td>
</tr>
<tr>
<td>Agreed</td>
<td>37</td>
<td>17.2</td>
<td>17.2</td>
<td>88.8</td>
</tr>
<tr>
<td>Uncertain</td>
<td>21</td>
<td>9.8</td>
<td>9.8</td>
<td>98.6</td>
</tr>
<tr>
<td>Disagreed</td>
<td>3</td>
<td>1.4</td>
<td>1.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>215</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table shows that most of the participants (71.6%) were strongly agreed that literacy improved the internal skills of the participants.

Table 9: You are getting more earning after getting literate

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agreed</td>
<td>181</td>
<td>84.2</td>
<td>84.2</td>
<td>84.2</td>
</tr>
<tr>
<td>Agreed</td>
<td>26</td>
<td>12.1</td>
<td>12.1</td>
<td>96.3</td>
</tr>
<tr>
<td>Uncertain</td>
<td>5</td>
<td>2.3</td>
<td>2.3</td>
<td>98.6</td>
</tr>
<tr>
<td>Disagreed</td>
<td>3</td>
<td>1.4</td>
<td>1.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>215</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 9 shows that most of the participants (84.2) were strongly agreed that literacy had increased their earnings.

Table 10: Literacy enabled you socially empowered

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agreed</td>
<td>155</td>
<td>72.1</td>
<td>72.1</td>
<td>72.1</td>
</tr>
<tr>
<td>Agreed</td>
<td>56</td>
<td>26.0</td>
<td>26.0</td>
<td>98.1</td>
</tr>
<tr>
<td>Uncertain</td>
<td>2</td>
<td>.9</td>
<td>.9</td>
<td>99.1</td>
</tr>
<tr>
<td>Disagreed</td>
<td>2</td>
<td>.9</td>
<td>.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>215</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Table 10 shows that most of the participants (72.1%) were strongly agreed that literacy had made them socially empowered.

### Table 11: Literacy increased your decision power

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agreed</td>
<td>190</td>
<td>88.4</td>
<td>88.4</td>
<td>88.4</td>
</tr>
<tr>
<td>Agreed</td>
<td>17</td>
<td>7.9</td>
<td>7.9</td>
<td>96.3</td>
</tr>
<tr>
<td>Uncertain</td>
<td>7</td>
<td>3.3</td>
<td>3.3</td>
<td>99.5</td>
</tr>
<tr>
<td>Disagreed</td>
<td>1</td>
<td>.5</td>
<td>.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>215</td>
<td>100.0</td>
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<td></td>
</tr>
</tbody>
</table>

Table 11 shows that most of the participants (88.4%) were strongly agreed that their decision power was enhanced by literacy.

### Table 12: Literacy increased your purchasing power

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agreed</td>
<td>167</td>
<td>77.7</td>
<td>77.7</td>
<td>77.7</td>
</tr>
<tr>
<td>Agreed</td>
<td>34</td>
<td>15.8</td>
<td>15.8</td>
<td>93.5</td>
</tr>
<tr>
<td>Uncertain</td>
<td>13</td>
<td>6.0</td>
<td>6.0</td>
<td>99.5</td>
</tr>
<tr>
<td>Disagreed</td>
<td>1</td>
<td>.5</td>
<td>.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>215</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 12 shows that most of the participants (77.7%) were strongly agreed that their purchasing power was increased by literacy.

### Table 13: Literacy. Increased your saving power

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agreed</td>
<td>181</td>
<td>84.2</td>
<td>84.2</td>
<td>84.2</td>
</tr>
<tr>
<td>Agreed</td>
<td>24</td>
<td>11.2</td>
<td>11.2</td>
<td>95.3</td>
</tr>
<tr>
<td>Uncertain</td>
<td>7</td>
<td>3.3</td>
<td>3.3</td>
<td>98.6</td>
</tr>
<tr>
<td>Disagreed</td>
<td>3</td>
<td>1.4</td>
<td>1.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>215</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 13 shows that most of the participants (84.2%) were strongly agreed that their saving power was increased by literacy.
Table 14: Your economic position upgraded in the society with literacy

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agreed</td>
<td>158</td>
<td>73.5</td>
<td>73.5</td>
<td>73.5</td>
</tr>
<tr>
<td>Agreed</td>
<td>51</td>
<td>23.7</td>
<td>23.7</td>
<td>97.2</td>
</tr>
<tr>
<td>Uncertain</td>
<td>4</td>
<td>1.9</td>
<td>1.9</td>
<td>99.1</td>
</tr>
<tr>
<td>Disagreed</td>
<td>1</td>
<td>.5</td>
<td>.5</td>
<td>99.5</td>
</tr>
<tr>
<td>11.00</td>
<td>1</td>
<td>.5</td>
<td>.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>215</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 14 shows that most of the participants (73.5%) were strongly agreed that literacy had upgraded their economic position in the society.

Table 15: Your family educational status improved with your literacy

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agreed</td>
<td>140</td>
<td>65.1</td>
<td>65.1</td>
<td>65.1</td>
</tr>
<tr>
<td>Agreed</td>
<td>68</td>
<td>31.6</td>
<td>31.6</td>
<td>96.7</td>
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<tr>
<td>Uncertain</td>
<td>4</td>
<td>1.9</td>
<td>1.9</td>
<td>98.6</td>
</tr>
<tr>
<td>Disagreed</td>
<td>3</td>
<td>1.4</td>
<td>1.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>215</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 15 shows that most of the participants (65.1%) were strongly agreed that literacy had improved the educational status of their children.

Table 16: Your standard of life improved with literacy

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agreed</td>
<td>175</td>
<td>81.4</td>
<td>81.4</td>
<td>81.4</td>
</tr>
<tr>
<td>Agreed</td>
<td>32</td>
<td>14.9</td>
<td>14.9</td>
<td>96.3</td>
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<tr>
<td>Uncertain</td>
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<td>2.8</td>
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<td>99.1</td>
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<tr>
<td>Disagreed</td>
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<td>.9</td>
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<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>215</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 16 shows that most of the participants (81.4%) were strongly agreed that literacy had improved their standard of life.

Discussions
It has been observed that literacy had brought a tremendous change in the lives of participants. Literate people are playing a remarkable role in the society. A simple literate person considers education a necessary tool against the poverty. They are spending on family education although they got literate in the last stage of their lives. Literate people are increased their purchasing and saving powers. Literacy helped them in finding their jobs and they are earning more and more.
Recommendations
It is necessary that there must be a strong communication between the literacy establishments and noteworthy inhabitants of the community. Improved incentives for literacy instructors and learners may be reserved in provisions. Further, rooted and profession oriented curriculum for literacy may be developed. And the process of valuation and observation must be reinforced. Furthermore, technical and vocational programs may be embedded in the literacy programs. Along this, female enrolment ratio may be enhanced through incentive programs. Last but not the least; a well-adjusted methodology is to be developed in order to improve the reading, writing, numeracy and visual skills of learners.

References
Benson, H. S. (2009). Campaigning for Literacy, The Challenges and policies of media literacy programs in Egyptian schools: Turkey, UNESCO.
Pakistan One UN Programme Report 2011
The Impact of Abuja Urban Mass Transit Scheme on Transportation Problem Mitigation in Federal Capital Territory, Abuja.

Adewale E. Adegoriola
Department of Economics, University of Abuja, Abuja-Nigeria

Abstract
This study investigates the impact of mass transit scheme on transportation problem alleviation in Federal Capital Territory (FCT), Abuja. In order to achieve the objectives of the study, survey method of research design was adopted to sample the opinion of some residents of in FCT through the probability sampling method. A structured questionnaire was used with the following variables; existence of peak hours, insufficient affordable transport, traffic conjunctions, nature of the roads and high cost of transport in FCT. The logit probability methodology was employed to analyze the data in order to know the impact of mass transit scheme introduced by Federal Capital Territory Administration. To ascertain the reliability of the instruments, Cronbach’s Alpha test was conducted which gave values greater than 0.5. Findings from the study revealed that Existences of peak hours, traffic conjunctions and nature of road have negative but significant impact with transportation problem alleviation in FCT. Insufficient affordable transport has positively and significant impact with transportation problem alleviation while cost of transportation is positively but insignificant impact transportation problem alleviation. It was recommended that the FCTA should ensure the enforcement of law that prohibit streets and highways trading in enhance free flow of traffic during peak hours, provision of adequate safe parking space for private and commercial vehicles. Finally, FCTA should put high priority on the construction of more roads and wider roads with at least three lanes as well as rehabilitation of existing ones.

Keyword: Urban, Mass Transit, Transportation, Federal Capital Territory
Introduction

The importance of mass transit stemmed from the fact that it provides mobility for those who cannot afford to buy a car and helps in creating and maintaining livable communities by relieving highway congestion and assuring long term sustainability in terms of resource consumption and the environment (Paul, 2001).

Mass transit is the movement of people within urban areas using group travel technologies such as buses and trains. The essential feature of mass transportation is that many people are carried in the same vehicle (e.g., buses) or collection of attached vehicles (trains). This makes it possible to move people in the same travel corridor with greater efficiency, which can lead to lower costs to carry each person or because the costs are shared by many people-the opportunity to spend more money to provide better service, or both.

The term “urban mass transit” generally refers to scheduled intra-city service on a fixed route in shared vehicle. Even this definition embraces horse –drawn Omnibus and streetcars, cable cars, trolley coaches, gasoline and diesel buses, underground and above ground rail rapid transit, ferries, and some commuter rail services. It also comprises a spectrum of modes of urban public transport that use specific fixed-track or exclusive and common – user road track (such as metros, suburban railways, light rail transit, and buses). Mass transit usually has superior operating capacity and performance compared with unsegregated road–based public transport (such as buses, taxes and Para transit) (Nwaogbe, Ukaegbu and Ibe, 2011).

Transportation provides a very efficient means of moving large number of people with considerable flexibility in order to meet demand throughout the city (Armstrong-Wright, 1999). It plays a key role in shaping urban and rural landscape through its influences on the form and size of settlements, the style and pace of life by facilitating trade, permitting access to people and resources, and enabling greater economies of scale (Santhakumar, 2003).

Transport interventions usually in the form of mass transit have the potential to contribute to poverty reduction through delivering better livelihood outcomes through their impact on time and access. Greater time availability and better access to facilities that can help build the poor’s human and social capital can enable and help make the growth process pro-poor through giving the poor more opportunity to participate in it. Transport interventions can free up time used in journeys, making it available for use in other activities which can help to build the poor’s asset base. Time may not necessarily be reallocated to income generating activities but can be reallocated to other activities which are equally important in producing better livelihood outcomes, including better family care, more access to health and education and more leisure.

Assessing and improving quality of service in the urban mass transit holds a high priority for the majority of public transport operators. Urban transport operators are forced to place particular emphasis on the monitoring and improvement of the service quality provided in an attempt to address the increasing rate of automobile ownership and the high rate of traffic congestion in the environment, and how to move the sustainability of urban transport system to a high extent (Tyrinopoulos and Antoniou, 2008).

The rate of migration of people and automobile from the various states of the federation to the Federal Capital Territory, Abuja is so high that in future the population of both people and automobile will be double what it is now. Already there is problem of congestion during the peak period in the major entrance and exit routes leading to satellite towns of the FCT. Despite the successive FCT administration’s effort in the provision of transportation services, the deficient transport infrastructure has particularly limited the chances of the populace, aged and people with disabilities to access resources. The poor and it is the poorest of the poor who live in the satellite towns and villages around the city centre are made even more impoverished and
disadvantaged by inadequate rural transport facilities. Life in the rural communities of the FCT is still far from average living standard. The area is characterized with poor or lack of access to basic services and needs relating to health, education and income earning opportunities. This is mainly due to inadequate means of transportation, poor or inadequate road linkages, long travel time, and congestion, high cost of travel relative to income, discomfort and risk.

The questions therefore are:

i. What is the level accessibility of mass transportation in rural communities of FCT-Abuja?

ii. What is the impact of Abuja Mass Transit Scheme in FCT?

**Empirical Review**

Tunde and Adeniyi (2012) examined the impact of road transport on agricultural development in Ilorin East L.G.A of Kwara State. It employs the use of both primary and secondary data. One hundred and fifty copies of questionnaire were distributed systematically to the farmers in the study area. Focus group discussion was also used to obtain information on the impact of road transport on rural development as a whole. Descriptive and analytical statistical methods were both employed to analyze the data. The findings showed that road transport has both positive impact on agricultural development in the study area. However, the bad conditions of the road affect cost of transportation of agricultural produce which in turn affect the rural farmers’ income. The study concluded by suggesting that an improvement in road transport system will lead to increased production by farmers. Community participation in road transport development should also be encouraged in the studied area.

Basorun and Rotowa (2012) conducted regional assessment of public transport operations in Nigerian cities: The Case of Lagos Island. The study examines the major challenge of adjusting the existing system of mobility to the evolving transport needs of the people. The study adopted simple descriptive statistics such as frequency counts and percentages as well as a pairwise association between the level of service of the private sector in public transport system and patronage by commuters through the use of the Pearson’s Correlation test. Result indicates that the role of the private sector in the public transport services associates highly (0.95) with patronage. As a vibrant sector of the transport system, it represents a major intervention area for a more effective transport operation in the city. They therefore recommend that the means of increasing public transport should be explored as a derived demand. Government should promote sustainable high quality links for people by improving the efficiency and effectiveness of the informal (private) operators through workshops, seminars and training for far reaching benefits to the transport system. These informal sectors should also be empowered with funding through soft loans to increase their operations in the area.

Ali (2010) assessed the quality of intra-urban bus services that are provided by government agencies and private bus operators in the city of Enugu as perceived by bus commuters. In the 31 sample centres selected for the study while 310 bus commuters were randomly interviewed to illicit information about their lengths of waiting time for the arrival of buses at the bus stops and their lengths of walking distances to the nearest bus stops. Using hourly bus frequency arrival count proforma, the numbers of buses arriving in each of the 31 sampled centres to carry passengers to different places in the city were collected by the stationed investigators between 6.00am and 6.00pm each day for one week. Descriptive statistic of mean and maps were employed to analyze the data collected. The findings revealed that the quality of bus service indicators passengers waiting time, walking distance to the nearest bus stops and bus service frequency varied from one centre to another, indicating variations in the level of bus services in different part of the city. The study recommends that the three Local Government Areas that
make up the city in conjunction with the state government should construct new urban link roads and maintain the old ones especially in the peripheries to enhance accessibility; partnership with private bus operators to increase the number of buses in circulation and relocation of some socio-economic facilities from the city centre to the city peripheries to spread demand for and services of buses in the city.

Aderamo and Magaji (2010) studied rural transportation and the distribution of public facilities in Edu local government area of Kwara State. They examined the role played by road transport in the distribution of public facilities in a rural environment. The data used were collected through mapping and surveys of the nature of road network and available public facilities in the study area. The results of data analysis showed that the area has a poorly connected road network characterized by poor surface condition, narrow bridges and many bends. The level of provision of public facilities is also low. In order to establish empirical relationship between road network development and distribution of public facilities in the area, regression technique was used. The analysis showed a strong relationship. The study concludes by making recommendations for the federal and state governments’ intervention in road network development in the area and providing more facilities to make life better for the people.

Somuyiwa & Adebayo (2009) examined impact of bus rapid transit system (BRT) on passengers’ satisfaction in Lagos metropolis. Data were collected through the use of questionnaire that was administered using simple random sampling technique. Also, secondary data were used. Findings revealed that less than average of the passengers were satisfied with the BRT system while some were fully dissatisfied. The study concluded that BRT can be a practical and technical alternative to highway reconstruction. They recommended the need to ensure greater coordination with local planning and operating agencies for the purpose of identifying BRT potentials; conduct research, develop operational techniques and promote the use of Intelligent Transport System (ITS) technology to enable safe and efficient deployment of BRT.

Odufuwa (2008) examined vulnerability and mobility stress coping strategies differentials among male and female in a developing city-Lagos, Nigeria. The study used primary data, which were obtained through a questionnaire survey of 356 respondents in Lagos. Indices of individual coping strategies and the weighted sum reflecting frequency and severity of respondents mobility stress coping strategies were used as a proxy for indicating the vulnerability of male and female respondents to mobility stress. Variables used include socio-economic characteristics such as number of vehicle in household, purpose of daily trip, number of trips, trip distance, travel time, income, age and travel difficulties. The result shows that female respondents were more vulnerable to mobility stress than the male. Sources of stress are basically associated with travel difficulties. There was higher prevalence of long-waiting at bus stop, prolong travel time, uncomfortable means of travel and expensive cost of travel among female respondents. This implies that female respondents had less access to and utilization of comfortable services transport and are therefore more transport-in secure than their male counterpart. The study emphasised the need to improve the current state of transport infrastructures in the country. Female and their counterparts (male) need transport enlightenment in order for them to be able to cope with stressful mobility conditions.

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Malapurum District of Kerala, India. The study was carried out among tribal settlements located in a remote hilly region, with restricted accessibility, in accordance with the IRAP methodology, as developed by agencies like the International Labour Office (ILO). The aim of the study was to evaluate accessibility/mobility related problems in order to arrive at cost-effective solutions with the potential to enhance accessibility and thereby improve the poor living standards and quality of life of the communities involved; notably by means of improvement measures which could, in turn, generate additional employment opportunities.

Asiyanbola (2007) examined the effects of urban transport infrastructure condition and intra-urban travel on the psychological well-being of women and men in Nigeria using Ibadan as a case study. The study uses primary data, which were obtained, through a cross-sectional survey of 721 households in Ibadan, Nigeria. The null hypotheses tested in the paper are that: (i) there is no significant effect of urban transport infrastructure condition and intra-urban travel on women’s and men’s psychological distress and (ii) there is no gender difference in the effects of urban transport infrastructure condition and intra-urban travel on the psychological distress of women and men.

Inconclusive Review

Anderson, Anderstig and Harsman (1990) examined relationship between infrastructure and regional productivity in Sweden and identify specific variables that are positively correlated to regional productivity. The study correlated with earlier views of Alonso (1964) and Appalachian (1982) that highway infrastructure investment exerts positive influence on economic productivity. Peckham and Isserman (1994) have documented that highways have “network properties” that are both spatial and economic in nature. Using a quasi-experimental matching method to examine the effects of highways on countries, economic growth of countries is greatest for those close to large cities, while rural countries have limited benefits.

Similarly, Howe (1994) reported that “there is a Growing recognition of the link between infrastructure investment and sustainable long-term economic growth. ‘Now growth’ thorniest in economic argue a strong correlation between the level of net public capital spending and the level of private sector output and labor productivity growth. It emphasized the potential for infrastructure investment to play a leading role in facilitating faster rates of economic growth.

Munnell (1990) examined the regional economic development and performance related to public infrastructure. The findings revealed that the probability of a business choice of location and that performance depends on its entity. The authors reported that the choice of a specific location depends on whether the business is a breach firm or a simple establishment firm. Munnell (1990) also indicated that highways have greater effect on economic productivity. He also suggested the need for further research to assess regional output as related to understanding of business choosing location.
Forkenbrock (1990) putting transportation and economic development in perspective using qualitative descriptive analysis presented positive relationship between a vector of factors and economic change and development at the county level. Apart from use of descriptive analysis, Forkenbrock suggested use of factor and cluster analysis to group counties and estimate economic impacts of rural transit infrastructures. Also, American Public Transit Association (APTA) presented a comprehensive analysis of economic benefits of public transit across the United States. Among the measurable and immeasurable benefits reported are: attractions of new business and other related services, increase retail trade and sales, employments or jobs, increased property values and fiscal improvement.

Rephann (1997) evaluated planning theories and transportation using input-output modeling including input-output modeling as related to highway management and economic analysis. The authors argue that regional economic theory is a useful economic tool and indicated that various regional and extra-regional characteristics significantly influence highway economic performance. However, Rephann criticized that “input-output adapted for transportation analysis may be impracticable and require data that are inadequate or available”

Transportation infrastructure provides rural residents improved access to opportunities outside the local community. Earlier, Moon (1987, 1988) reported global improvement imports of interstate highway within rural community in Kentucky. The study examined factors that explained developments prospects along highway interchanges on rural Kentucky during mid-1980’s. Also presented are possible developmental effects for remote and isolated transportation interchanges sites.

Methodology and Theoretical Framework

This study adopted a survey research design. This is found suitable for this study because it is a very valuable tool for assessing opinions and trends. It consists of a predetermined set of structured questionnaires built on Likert scale to collect information from a representative sample of the population commuters in Federal Capital Territory, Abuja. The primary data were used for the study. Sample size of 398 was determined using Taro Yamane, determination of sample size and a simple random sampling technique was employed because of its efficiency while the methodology of analysis is Logit model.

The questionnaire is tested for content reliability to assure that it is able to address appropriately the questions being answered. The reliability of the instrument concerns the extent to which the instrument yields the same results on repeated trials. Reliability shows the extent to which test scores are free from errors of measurement (Carmines and Zeller, 1979). The reliability of the measuring instrument Cronbach (1951) reliability statistics is employed.

Table 1: The Reliability Test for Indicators of Mass Transit Program and Alleviation of Transportation Problems.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>No. Items</th>
<th>Reliability Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature of transportation challenges</td>
<td>15</td>
<td>0.650</td>
</tr>
<tr>
<td>Impact of mass transit program</td>
<td>15</td>
<td>0.758</td>
</tr>
<tr>
<td>Measures to improve transport system</td>
<td>6</td>
<td>0.693</td>
</tr>
<tr>
<td>Overall Indicators</td>
<td>36</td>
<td>0.700</td>
</tr>
</tbody>
</table>

Source: By the Researcher (2018)
All the indicators namely; nature of transportation challenges, impact of mass transit program, and measures to improve transport system are all reliable since their Cronbach’s alpha is greater than 0.5. Hence, a reliability value of 0.5 and above are considered acceptable (Cooper and Schinder, 2006; Malhotra and Birks, 2006).

Model Specification

The logit regression equation is of the form:

\[ L = \frac{\ln(P)}{\ln(1-P)} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + U_t. \]

Where: Logit \( L \) stands for impact of mass transit program on the alleviation of transport problem in FCT. \( X_1 \) denotes the Existence of peak hours, \( X_2 \) represents insufficient affordable transport, \( X_3 \) means the Traffic conjunctions, and \( X_4 \) represents the Nature of the Roads while \( X_5 \) denotes High cost of transport. \( \beta_0 \) is Constant term while \( \beta_1 - \beta_5 \) represent regression parameters and \( U_t \) represents the error term.

Estimation and Interpretation of Result

Demographic Characteristic of Respondents

From the table 2 below, 55.6% of the respondents are male and the remaining 44.4% representing 140 respondents are female. The result further reveals that the majority of the respondents are civil servant representing 93.7% of the respondents while the remaining 1.6% and 4.8% are farmers and traders respectively. In terms of age grouping sampled respondents between the age of 30 years and above constituted the majority of the respondents accounting for about 73%, follow by respondent of age between 26 and 29 years which stood at 19%, then 22 to 25 years which account for about 6.3% and only 5 respondents were found to be of age between 18 and 21 years. A total of 224 respondents representing 69.4% of the sampled size are married. While, 14.8% and 6.5% are divorced and widow respectively, the remaining 29 respondents representing 8.6% of the sampled population are single. The result further reveals that 52.4% of respondents have lived in FCT for the past five years, followed by those that have reside there for at least 10 years which constitute 28.6%, while the remaining 7.9% and 11.1% have lived in FCT for between 11 – 15 years and 16years and above respectively.

<table>
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<tr>
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<td>X5</td>
<td>0.016811</td>
<td>0.168306</td>
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Source: Author's Computation, E-views 7 (2016)

X1 = Existence of peak hours, X2 = Insufficient affordable transport, X7 = Traffic conjunctions, X13 = Nature of the Roads, X15 = High cost of transport

The outcome of the result confirms our a priori expectations where existence of peak hour resulting in heavy traffic that obstructs free flow of traffic is the most outstanding factor constraining the ability of mass transit program to end transportation problem in Federal Capital Territory, Abuja. A unit increase in existence of peak hours will lead to 80 percent decrease in transportation problem alleviation in the Federal Capital Territory (FCT), Abuja and with a probability value of 0.0000, which show a significant impact with transportation problem alleviation in FCT. On the other hand, insufficient affordable transport has positively impact on transportation problem alleviation in FCT by 69 percent. It probability value is 0.0000 which show that insufficient affordable transport has significant impact with transportation problem alleviation. This implies that mass transit program has brought about sufficient means of moving people from one place to another, hence contribute significantly to solve transport problem in FCT. The result also shows that a unit increase in traffic conjunctions will lead 80 percent decrease alleviation of transportation problems in FCT which will therefore distorts free flow of traffic in FCT. A unit increase in nature of road will lead to 55 percent decrease in transportation problem alleviation in FCT with the probability of 0.0020, it show a significant impact of transportation problem alleviation in FCT. However, cost of transportation is
positively related in alleviation transportation problem to the turn of 1.68 percent in FCT. The probability value is 0.0920 which is greater than 0.005, it means that the positive impact of cost of transportation in transportation problem alleviation is not significant. The outcome of the empirical result reveals that the Mc Fadden ($R^2$) is 0.511. This shows that about 51.1% of the variation in mass transit program reduce transportation problem in Federal Capital Territory are explained by the exogenous variables identified in the model.

**Conclusion and Policy Recommendations**

Following the findings of this study, the study therefore concludes that the introduction of mass transit program could be positive initiatives on the alleviation of transportation problems in Federal Capital territory if necessary measures are taking to address among other things; the difficulties of movement during the peak hours, sufficient affordable transport, traffic control, expansion of roads and affordable transport fees.

From our findings, the following policy recommendations are therefore advanced in order to enhance the effective and positive impact of mass transit program on the alleviation of transportation problem in Federal Capital Territory, Abuja.

i. The Federal Capital Territory Administration (FCTA) should ensure the enforcement of law that prohibit streets and highways trading in enhance free flow of traffic during peak hours. This complementary policy could be in the form of provision of an alternative marketing space for road side marketers and harsh penalties for the offenders as well as employment of more implementers and monitory group (Abuja Environmental Protection Agency). This will go a long way in addressing the problem of peak hour.

ii. Provision of adequate safe parking space for private and commercial vehicles. This could be achieved through public-private partnership in the provision of modern motor parks with adequate modern securities that will ensure safety of individual vehicles. Such safety modern motor parks will attract user fee in exchange of parking ticket in line with global practices.

iii. Installation of traffic light at strategic vehicle turning points and round about to ensure free and safe movement of vehicles and persons. In addition to installation of traffic light is the effective implementation of road rules, signs and regulations as well as ensuring the punishment of traffic offenders.

iv. Finally, FCTA should put high priority on the construction of more roads and wider roads with at least three lanes as well as rehabilitation of existing ones. This will reduce conjunction and enhance easy movement of people and vehicles.

**References**


International Journal of Developing Societies (2012), (1)2, 82-87. Online World Scholars


Wilson, G. (1966). Towards a theory of transport and development


Dependent Variable: L
Method: ML - Binary Logit (Quadratic hill climbing)
Date: 01/21/17 Time: 11:16
Sample: 1-315
Included observations: 245
Convergence achieved after 4 iterations
Covariance matrix computed using second derivatives

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McFadden R-squared 0.511190 Mean dependent var 0.759184
S.D. dependent var 0.428454 S.E. of regression 0.431389
Akaike info criterion 1.158530 Sum squared resid 43.91884
Schwarz criterion 1.287147 Log likelihood -132.9199
Hannan-Quinn criter. 1.210324 Deviance 265.8397
Restr. Deviance 270.4893 Restr. log likelihood -135.2447
LR statistic 10.64961 Avg. log likelihood -0.542530
Prob(LR statistic) 0.000285

Obs with Dep=0 59 Total obs 245
Obs with Dep=1 186
Corporate Social Responsibility and Non-Financial Organizational Performance in Etisalat Telecommunication Company United Arab Emirates

Dr. Mba Okechukwu Agwu
University of Modern Sciences Dubai, UA.E.

Abstract

The paper examined corporate social responsibility (CSR) and non-financial organizational performance in Etisalat telecommunication company United Arab Emirates. It views CSR as corporate activities that contribute to stakeholders' wellbeing. It assumes that stakeholder-oriented CSR would improve non-financial organizational performance. The research question explores the relationship between stakeholder-oriented CSR and improved corporate image/reputation and enhanced products competitive advantage in Etisalat telecommunication company United Arab Emirates. The place of study consists of all the Etisalat offices in the seven emirates of U.A.E while the duration of study is between January and December 2017. A descriptive research design was used in executing the study, using 385 randomly selected employees of Etisalat in U.A.E, for questionnaire administration. The sample size of 385 was determined from a population of 10,000 employees consisting of 3,600 locals and 6,400 foreign nationals, using Yamane 1964 sample size determination formula at 5% level of significance for sampling error. Results from the data analysis indicated that significant relationship exists between stakeholder-oriented CSR and improved corporate image/reputation and enhanced products competitive advantage in Etisalat telecommunication company United Arab Emirates and recommends among others: sustenance of the current CSR practices in Etisalat, continuous monitoring of changing expectations of key stakeholders to identify areas of support, continuous consultation with key stakeholders in decision making, continuous review of organizational CSR practices to align with industrial best practices and continuous provision of resources to sustain existing stakeholder-oriented CSR practices.

Keywords: CSR, organizational performance, Etisalat, stakeholders, corporate reputation.

1. Introduction

1.1 Background of the Study

Despite the existence of many research studies on the relationship between CSR and firm performance in many countries of the world, the paucity of similar research studies on corporate organizations in the United Arab Emirates prompts the need for this research. CSR is broadly understood as "actions that appear to further some social good, beyond the interest of the firm and that which is required by law" (McWilliams and Siegel, 2001). The firm’s interests have been a great driver of CSR research, visible in the exploration of the link between CSR and firm’s performance (Waddock and Graves, 1997). Evidence points to the
increasing use of CSR programs as a way of achieving competitive advantage (Matten and Moon, 2008).

Thus CSR refers to voluntary corporate activities that are beneficial to stakeholders and the environment. Stakeholder-oriented CSR activities have been found to influence corporate reputation resulting in increased business performance (Ackerman, 1975). Firms adopt stakeholder-oriented CSR so as to be perceived as “socially responsible” to gain customer and other stakeholders support (Golob and Bartlett, 2007). Stakeholder-oriented CSR enable organizations to tailor their voluntary activities to the changing expectations of its stakeholders and the environment.

Stakeholders refer to any group or individual who would affect or be affected by the achievement of the organization’s objectives (Freeman, 1984). They include: shareholders/investors, employees, customers, suppliers, governments or other public organizations that set laws and govern economic commerce (Clarkson, 1995), trade associations and environmental groups (Donaldson and Preston, 1995). They may be primary or secondary depending on whether they are directly or indirectly engaged in the economic activities of the organization. Managing and satisfying the interests of stakeholders may lead to significant improvements in corporate performance and sustainability (Freeman, 1984).

Since its inception in the UAE about four decades ago, Etisalat has adopted a stakeholder-oriented CSR approach by consistently striving to foster innovation in the delivery of its telecommunication services. To this end, Etisalat continuously monitors and reviews its operational activities to identify and address specific CSR expectations of different stakeholders. For instance, it’s recently launched enhanced mobile service packages offers its customers value for money, flexibility and price transparency. For example, its flagship business postpaid mobile package – addresses the specific needs of SMBs and large enterprises, Family Pack – addresses consumer data sharing, Global Data Plan – addresses data roaming/unlimited Wi-Fi worldwide while Data Boosters - addresses extension of mobile data allowance (Etisalat, 2016).

To address the needs of SMBs, who form the foundation of UAE’s economic growth, Etisalat launched Business Quick Start – the first in a series of integrated Business in Box solutions that offer SMBs high-speed fixed broadband Internet, free voice minutes and a free smart device on a single, converged bill. A dedicated, state-of-the-art call centre for SMB customers has been launched that serves more than 72,000 SMBs and offers convenient and comprehensive ICT services and support, allowing SMBs to focus on their core competencies (Etisalat, 2016).

While there exist different organizational motivations for CSR activities, more researchers are beginning to understand and analyze CSR in the context of strategic performance and value creation shifting the focus of research from better financial performance to better overall performance in the long term. CSR can therefore be redefined as not going beyond the firm’s interest but aligning it with stakeholders’ interest, to create shared value (Kramer, 2011). It is against this background that it becomes pertinent to examine corporate social responsibility (CSR) and non-financial organizational performance in Etisalat telecommunication company United Arab Emirates.

1.2 Statement of the Problem

The satisfaction of stakeholders’ interests is the mainstay of every business organization since no organization can exist without its stakeholder’s support. Hence; the major challenge of every business organization is to create/sustain a good corporate image that will enhance organizational attractiveness in the minds of its stakeholders. The stakeholders are the source of
supplies of raw materials, capital, labor, legal existence and patronage for the firm’s products. Any business organization without its stakeholders support will experience a decline in productivity, sales, profitability, competitiveness and corporate image. Such an organization will sooner than later go into extinction or oblivion. When stakeholders lose confidence in a firm’s performance, the firm loses its critical support structure and customer base (Lee, 2008). Customers stop buying products or go for legal suits, shareholders sell their stocks, employees do not perform, and environmental advocates sue (Wood, 1991), all of which directly affect firm performance. Hence business organizations like Etisalat should continuously carry out stakeholder-oriented CSR activities as a way of sustaining its business through creation of good corporate image/reputation that may result in gaining competitive advantage, increased patronage/sales and profitability.

1.3 Research Objectives

The objectives of the research are as stated:

To ascertain the extent of the relationship between stakeholder-oriented CSR and improved corporate image/reputation in Etisalat telecommunication company United Arab Emirates.

To determine the extent of the relationship between stakeholder-oriented CSR and enhanced products competitive advantage in Etisalat telecommunication company United Arab Emirates.

1.4 Research Questions

The increasing focus of recent CSR research activities on the alignment of corporate and stakeholders’ interests has prompted the following research questions:

Does any significant relationship exist between stakeholder-oriented CSR and improved corporate image/reputation in Etisalat telecommunication company United Arab Emirates?

Does any significant relationship exist between stakeholder-oriented CSR and enhanced products competitive advantage in Etisalat telecommunication company United Arab Emirates?

1.5 Research Hypotheses

With regards to the above research questions, the following null hypotheses were formulated:

H₀: There is no significant relationship between stakeholder-oriented CSR and improved corporate image/reputation in Etisalat telecommunication company United Arab Emirates.

H₀: There is no significant relationship between stakeholder-oriented CSR and enhanced products competitive advantage in Etisalat telecommunication company United Arab Emirates.

1.6 Literature Review

Several researches has focused on the relationship between CSR and firm performance while some studies reveal a positive relationship (Griffin and Mahon, 1997; McGuire et al., 1988; Waddock and Graves, 1997) others indicate a negative relationship (Bromiley and Marcus, 1989; Wright and Ferris, 1997) while some others have established no relationship between the two constructs (Aupperle et al., 1985; Teoh et al., 1999). Though a positive relationship has prevailed in many studies (Margolis and Walsh, 2003; Orlitzky et al., 2003), results still remain inconclusive which creates room for further research.

The influence of stakeholder-oriented CSR on firm performance can be understood with the help of three theories: (a) consumer inference making, (b) signaling theory, and (c) social
identity theory. ‘Consumer inference making’ theory suggests that if a consumer knows that the manufacturer of the product is a responsible firm, s/he can infer positively about the product (Brown and Dacin, 1997). Such inferences induce consumer goodwill (Brown and Dacin, 1997; Handelman and Arnold, 1999) that influences purchase intention (Gildea, 1994; Owen and Scherer, 1993). ‘Signaling’ theory (Boulding and Kirmani, 1993; Kirmani, 1997) suggests that in situations where there is information asymmetry between buyers and sellers, consumers look for information/signals that distinguish companies performing well on attributes of interest compared to those performing poorly.

Signals such as warranties (Boulding and Kirmani, 1993) indicating reliability and higher quality of products enable consumers to decide between companies. Consumers associate higher product quality with proactive corporate citizenship (Maignan and Ferrell, 2001) and potential job-seekers value CSR record of companies as a signal for organizational attractiveness (Greening and Turban, 2000). ‘Social identity’ theory emphasizes that one’s self-concept is influenced by membership in different social organizations, including the company for which an individual works (Dutton et al., 1994). Employees’ self-image is influenced by the image and reputation of their employers, consumers identify themselves with organizations or brands involved in discretionary citizenship and institutional investors like to be associated with socially responsible firms (Graves and Waddock, 1994). Such bonds of identification encourage positive evaluations of a firm’s products, and reap value addition through customer loyalty, advocacy, positive words-of-mouth, and resilience to negative brand information (Hoeffler and Keller, 2002; Sen et al., 2006).

Alternatively, irresponsible behavior by firms agitates stakeholders. They often react by boycotting the company (Hayes and Pereira, 1990), reducing consumption of the company’s products (Sen and Bhattacharya, 2001), initiating legal action against the company (Greeno and Robinson, 1992), and/or spreading bad words-of-mouth about irresponsible business practices (Clair et al., 1995). While improved stakeholder relations have the potential to improve a firm’s reputation and performance, strained relations have the risk of adversely affecting a firm’s performance.

Stakeholder (employee)-oriented CSR focuses on improving employees working conditions to enhance their job performance. Working conditions that respect human dignity, equality, and social protection result in a productive workplace (Somavia, 2000). Social responsibility of a company is a reputation factor and is an attractive force for potential and current employees (Turban and Greening, 1997). Ethical reputation contributes to job satisfaction and lower employee turnover by evoking positive reactions from employees’ families and friends (Riordan et al., 1997). Because satisfied employees have higher morale and job motivation, they will work more effectively and efficiently (Berman et al., 1999) and contribute to higher levels of organizational effectiveness (Koys, 2001). Past studies established that better human resource management practices such as training and development of employees, their participation in problem solving, progressive remuneration policies and grievance procedures could reduce employee turnover and increases their productivity (Youndt et al., 1996).

Stakeholder (customer)-oriented CSR focuses on creating positive customer perception about product quality and safety, to increase sales or decrease costs associated with customer relationships (Waddock and Graves, 1997). In product retailing, market reactions are found to be negative for socially responsible companies. When customers are dissatisfied with a product or its associated services, investors apprehend that negative customer reactions in the form of decreased patronage, lawsuits, or both, will directly affect the bottom line (Davidson and Worell, 1988). Yoon et al (1993) observed that if a company’s CSR activities are perceived as
positive by consumers; its products are assumed to be of superior quality. On the other hand, if perceived as negative, consumers will automatically assume their products are of poor quality.

Stakeholder (investor)-oriented CSR focuses on sound corporate governance standards. Investors show a willingness to pay a premium for the stocks of well-governed companies in contract to poorly governed companies (Coombes and Watson, 2000). Positive relations had been found between corporate governance and stock price performance/financial ratios in emerging markets. Companies ranked in the top quarter of corporate governance yield a better average return on capital employed than companies ranked at the bottom half (CLSA, 2000).

Stakeholder (community)-oriented CSR focuses on community relationships and participation in social and economic development issues. When firms focus their social actions on communities in and around their area of operation, they reap the benefits of a socially responsible image among their employees and the local community (Husted, 2003). Though past evidence suggests a negative relation between CSR towards the community and firm performance (Berman et al., 1999), it has been observed that investment in community development activities help a firm to obtain competitive advantages through tax savings, decreased regulatory burden, and improvements in the quality of local labor (Waddock and Graves, 1997).

Stakeholder (environment)-oriented CSR focuses on environmental protection. Research on environmental proactivity has not been conclusive (Christman, 2000). But recent research studies have linked environmental commitment with enhanced profitability, particularly in high growth industries (Russo and Fouts, 1997). Evidence suggests that proactive environmental management enhances a firm’s market value, reputation and firm performance (Alvarez et al., 2001). The impact of firms’ proactive environmental practices on market share, profitability, and return on investment is better in environment conscious companies than not-so-conscious ones (Ahmed et al., 1998).

Stakeholder (suppliers)-oriented CSR focuses on companies concentrating on their core competencies and outsourcing other functions to suppliers. Recent years have seen growing importance of suppliers’ issues such as health and safety, environmental impact, community involvement, and the payment of living wages to employees at both outsourced plant locations and home locations of suppliers. By ensuring suppliers adherence to good CSR standards, a firm sends a strong signal of zero tolerance for irresponsible CSR activities. While the influence of CSR on financial performance is a widely researched area, its influence on non-financial performance is sparsely investigated. Hence, this study is focused on non-financial organizational performance in Etisalat telecommunication company United Arab Emirates.

1.7 Conceptual Framework

Though CSR may be perceived as corporate obligations to its stakeholders, it is generally described as a firm’s commitment to improving the well-being of a community through discretionary business practices (Kotler, 2005). According to Carroll (1979) corporate CSR obligations can be classified into four main groups: economic, legal, ethical, and philanthropic. Economic responsibilities include duties to make profit, provide safe goods and services, pay employees and increase value of shareholders investments. Legal responsibilities include duties to obey societal rules and regulations. Ethical responsibilities include duties to obey societal ethical norms and behave in a socially responsible manner. Philanthropic responsibilities include duties to promote human welfare and enhance societal quality of life.
Bhattacharya and Sen (2004) explored the relationship between CSR activities and customer outcomes and categorized them into six domains: employee support (e.g., concern for safety, job security, profit-sharing, and union relations); diversity (e.g., gender, race, family, sexual orientation, and disability); environment (e.g., environment friendly products, hazardous waste management, animal testing, pollution control, and recycling); community support (e.g., support of arts and health programs, educational and housing initiatives, and generous giving); non-domestic operations (e.g., overseas labor practices); and product (e.g., product safety, marketing controversies, and antitrust disputes).

From the above discourse, it is obvious that CSR is concerned with voluntary corporate societal obligations, hence, the more CSR activities a company executes, the more economic benefits it enjoys since people tends to be more sensitive to companies that act responsibly than those that act irresponsibly (Porter and Kramer, 2006).

The conceptual framework of this research is based on Carroll’s (1979/1991) Bhattacharya and Sen’s (2004), and Oskamp’s (1997) research studies, which states that stakeholders will almost always favor a company that acts responsibly through setting up operational stakeholder-oriented CSR policies beneficial to the local community and society at large. These stakeholders will reciprocate by feeling strongly and positively about the company, which they will then voluntarily support in a number of ways such as eagerly buying its products, promoting it to others and favorably evaluating it. The Carroll (1979) and Bhattacharya and Sen (2004) conceptual model is as stated below:

Figure 1 – The Conceptual Framework of stakeholder-oriented CSR Policies

Source: Adapted from Carroll (1979) and Bhattacharya and Sen (2004)

Figure 1 shows that Stakeholders-oriented CSR policies arises from company management decision while its implementation creates favorable stakeholders psychology for company which in turn leads to good image & reputation for company that results in market competitive advantage for company products that finally yields increased patronage & promotion for company Products.

1.8 Theoretical Framework

This research is based on Freeman (1984) stakeholders’ theory which states that consideration of key stakeholders values, sentiments and expectations in a firm’s CSR activities will lead to significant improvements in corporate performance and sustainability. Hence, the effectiveness of organizational CSR activities depends on how well managers understand key stakeholders’ interests and appropriately responds to them (Miles et al., 2006; Wing-Hung Lo et al., 2010). Prior to designing and implementing organizational CSR policies, managers should undertake a variety of marketing research and environmental scanning activities to identify and understand stakeholders’ interests/expectations which are subsequently incorporated into organizational CSR programs.

Stakeholder orientation requires that firms actively monitor and engage with their stakeholder environment, which has been likened to expanding on the traditional marketing orientation...
approach (Ferrell et al., 2010). In fact, many companies have conducted CSR programs as a way of promoting socially responsible actions and effectively responding to stakeholders’ demands (Maignan and Ferrell, 2004). Therefore CSR is most effective at improving consumers’ attitude towards the company, enhancing consumers loyalty as well as downsizing the level of consumers skepticism, i.e., reducing consumers’ concerns and doubts regarding the company’s products and services (Pirsch et al., 2007).

Corporate reputation is an organization’s identity in the minds of its stakeholders; hence a firm’s CSR activities play a critical role in assessing its reputation (Lii and Lee, 2012). Research has shown that there is an association between corporate reputation and business performance, in other words, the more positive the reputation, the higher the performance, with positive perceptions motivating consumer purchase and developing positive brand associations (Neville et al., 2005).

Fombrun and Shanley (1990) determined that a firm’s good reputation attracts investors and better qualified personnel, lowers the cost of capital and enhances its competitive ability. Herremans et al. (1993) found that companies with better CSR reputations outperform those with poorer reputations and provide investors with higher stock market returns. Firms with good reputation also command higher prices, generate more employee loyalty and greater productivity, have bargaining power with their suppliers, more stable revenues, and are less exposed to crises (Fombrun, 1996).

The impact of CSR activities on corporate reputation is measured by managers’ perceptions of how an organization is being perceived across a set of stakeholders in general, rather than by each specific stakeholder, which is often done when assessing CSR-related activities (Maignan et al., 2011). This managerial perspective identifies the dimensions and attributes of corporate self-perception, reflecting on what management believes key stakeholders may consider as realistic, meaningful and long-lasting.

2. Research Methods

The scope of this research is limited to the three categories of administrative staff (management staff, operations staff and support staff) working in all the Etisalat offices across the seven emirates of U.A.E. It is assumed that responses obtained from the sample respondents would be representative of the opinions of all the three categories of administrative staff on their perception of corporate social responsibility (CSR) and non-financial organizational performance in their company. The duration of the study is between January and December 2017. The key aspect of the study is the use of cross sectional survey research design in generating the required primary data.

A sample of 385 randomly selected respondents from a population of 10,000 Etisalat employees consisting of 1,610 management staff, 6,340 operations staff and 2,050 support staff across the seven emirates of U.A.E. was used for questionnaire administration. The sample size of 385 was determined from the population size using Yamane 1964 sample size determination formula at 5% level of significance for sampling error. The sample respondents were selected using shuffling of cards method (without replacement) in which all the names of the three categories of employees’ were each separately written on small cards and the name at the topmost of each of the three group of cards was selected each time, the cards were shuffled until all the sample respondents were selected.

Data collected were analyzed using descriptive and inferential statistics. The questionnaire was designed to obtain a fair representation of the opinions of 385 sample respondents (62 management staff, 244 operations staff and 78 support staff) using a four-point Likert type
scale. The questionnaire responses of the sample respondents were presented using tables while formulated hypotheses were tested using analysis of variance (ANOVA). A total of 385 copies of the questionnaire were administered, collected and used for the analysis.

2.1 Calculation of Sample Size

The sample size of 385 was determined from the population of 10,000 Etisalat employees across the seven emirates of U.A.E. using Yamane (1964) formula for sample size determination thus:

\[ n = \frac{N}{1+N(e)^2} \]

Where: \( n \) = sample size, \( N \) = population size, \( e \) = level of significance/sample error factor.

\[ n = \frac{10,000}{1+10,000(0.05)^2} = \frac{10,000}{26} = 384.62 = 385 \]

3. Results and Discussions

3.1 Distribution of Responses on Research Questions

3.1.1 Question number 1

Does any significant relationship exist between stakeholder-oriented CSR and improved corporate image/reputation in Etisalat telecommunication company United Arab Emirates?

Table 1 shows that questions: 1, 2, 3, 4, and 5 with varying mean scores of 2.99, 2.86, 2.78, 2.77 and 3.05 were above the weighted average of 2.5. The table further revealed a grand mean score of 2.89 indicating a strong evidence of the existence of a significant relationship between stakeholder-oriented CSR and improved corporate image/reputation in Etisalat telecommunication company United Arab Emirates. This conclusion is buttressed by the Bhattacharya and Sen’s (2004), and Oskamp’s (1997) research studies, which states that stakeholders will almost always favor a company that acts responsibly through setting up operational stakeholder-oriented CSR policies beneficial to the local community and society at large. These stakeholders will reciprocate by feeling strongly and positively about the company, which they will then voluntarily support in a number of ways such as eagerly buying its products, promoting it to others and favorably evaluating it. This conclusion is also supported by the observation of Herremans et al. (1993) that companies with better CSR reputations outperform those with poorer reputations and provide investors with higher stock market returns.

\[ \text{Mean Score} = \frac{4n4+3n3+2n2+n1}{(n4+ n3+ n2+n1)} \] \[ \text{Equation (1)} \]

Where \( n1, n2, n3 \) and \( n4 \) are the respective number of responses obtained from each of the four options provided while 1, 2, 3 and 4 respectively represent the weights (SA (4), A (3), D (2) & SD (1) attached to each of the four options.
Table 1. Mean responses on the relationship between stakeholder-oriented CSR and improved corporate image/reputation in Etisalat telecommunication company United Arab Emirates (n=385)

<table>
<thead>
<tr>
<th>S/No.</th>
<th>Research Questions</th>
<th>SA(4)</th>
<th>A(3)</th>
<th>D(2)</th>
<th>SD(1)</th>
<th>Total Responses</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Has the adoption of stakeholder-oriented CSR attracted favorable reactions from its stakeholders?</td>
<td>155</td>
<td>105</td>
<td>90</td>
<td>35</td>
<td>1150</td>
<td>2.99</td>
</tr>
<tr>
<td>2.</td>
<td>Has the adoption of stakeholder-oriented CSR increased the firm’s approval rating among its stakeholders?</td>
<td>135</td>
<td>110</td>
<td>90</td>
<td>50</td>
<td>1100</td>
<td>2.86</td>
</tr>
<tr>
<td>3.</td>
<td>Has the adoption of stakeholder-oriented CSR increased stakeholders trust for the firm’s activities?</td>
<td>125</td>
<td>105</td>
<td>100</td>
<td>55</td>
<td>1070</td>
<td>2.78</td>
</tr>
<tr>
<td>4.</td>
<td>Has the adoption of stakeholder-oriented CSR reduced the level of skepticism for the firm’s products?</td>
<td>140</td>
<td>85</td>
<td>90</td>
<td>70</td>
<td>1065</td>
<td>2.77</td>
</tr>
<tr>
<td>5.</td>
<td>Has the adoption of stakeholder-oriented CSR reduced the level of complaints for the firm’s activities?</td>
<td>170</td>
<td>105</td>
<td>70</td>
<td>40</td>
<td>1175</td>
<td>3.05</td>
</tr>
</tbody>
</table>

Grand Mean 2.89


3.1.2 Question number 2

Does any significant relationship exist between stakeholder-oriented CSR and enhanced products competitive advantage in Etisalat telecommunication company United Arab Emirates?
Table 2 shows that questions: 6, 7, 8, 9, and 10 with mean scores of 2.74, 3.00, 2.86, 2.71 and 2.99 were above the weighted average of 2.50. The grand mean of 2.86 shows that there is a strong evidence of a significant relationship between stakeholder-oriented CSR and enhanced products competitive advantage in Etisalat telecommunication company United Arab Emirates. This conclusion is buttressed by the observation of Pirsch et al., (2007) that CSR is most effective at improving consumers’ attitude towards the company, enhancing consumers’ loyalty as well as downsizing the level of consumers’ skepticism, i.e., reducing consumers’ concerns and doubts regarding the company’s products and services. This conclusion is also supported by Brown and Dacin (1997) Consumer inference making theory, which suggests that if a consumer knows that the manufacturer of a product is a responsible firm, s/he can infer positively about the product. Such inferences induce consumer goodwill.

Table 2: Mean responses on the relationship between stakeholder-oriented CSR and enhanced products competitive advantage in Etisalat telecommunication company United Arab Emirates (n=385).

<table>
<thead>
<tr>
<th>S/No</th>
<th>Research Questions</th>
<th>SA(4)</th>
<th>A (3)</th>
<th>D(2)</th>
<th>SD(1)</th>
<th>Total Responses</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Has the adoption of stakeholder-oriented CSR increased market preference of your products?</td>
<td>130</td>
<td>95</td>
<td>90</td>
<td>70</td>
<td>1055</td>
<td>2.74</td>
</tr>
<tr>
<td>7.</td>
<td>Has the adoption of stakeholder-oriented CSR increased market demand of your products?</td>
<td>160</td>
<td>105</td>
<td>80</td>
<td>40</td>
<td>1155</td>
<td>3.00</td>
</tr>
<tr>
<td>8.</td>
<td>Has the adoption of stakeholder-oriented CSR increased market attractiveness of your products?</td>
<td>140</td>
<td>100</td>
<td>95</td>
<td>50</td>
<td>1100</td>
<td>2.86</td>
</tr>
<tr>
<td>9.</td>
<td>Has the adoption of stakeholder-oriented CSR increased market Class of your products?</td>
<td>120</td>
<td>105</td>
<td>90</td>
<td>70</td>
<td>1045</td>
<td>2.71</td>
</tr>
<tr>
<td>10.</td>
<td>Has the adoption of stakeholder-oriented CSR increased market edge of your products?</td>
<td>165</td>
<td>95</td>
<td>80</td>
<td>45</td>
<td>1150</td>
<td>2.99</td>
</tr>
</tbody>
</table>

Grand Mean 2.86


3.2 Test of the First Hypothesis

Ho: There is no significant relationship between stakeholder-oriented CSR and improved corporate image/reputation in Etisalat telecommunication company United Arab Emirates.

H1: There is a significant relationship between stakeholder-oriented CSR and improved
corporate image/reputation in Etisalat telecommunication company United Arab Emirates.

<table>
<thead>
<tr>
<th>S/No.</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>X2</td>
<td>X</td>
<td>X2</td>
</tr>
<tr>
<td>1</td>
<td>155</td>
<td>24025</td>
<td>105</td>
<td>11025</td>
</tr>
<tr>
<td>2</td>
<td>135</td>
<td>18225</td>
<td>110</td>
<td>12100</td>
</tr>
<tr>
<td>3</td>
<td>125</td>
<td>15625</td>
<td>105</td>
<td>11025</td>
</tr>
<tr>
<td>4</td>
<td>140</td>
<td>19600</td>
<td>85</td>
<td>7225</td>
</tr>
<tr>
<td>5</td>
<td>170</td>
<td>28900</td>
<td>105</td>
<td>11025</td>
</tr>
<tr>
<td>Totals</td>
<td>725</td>
<td>106375</td>
<td>510</td>
<td>52400</td>
</tr>
</tbody>
</table>

Source: Survey Data, 2017.

Calculation of total sum of squares (SST)

\[
\text{SST} = \sum (X - \bar{X})^2
\]

\[
\sum X = 106375 + 52400 + 39200 + 13250 = 211,225
\]

\[
\frac{(\sum X)^2}{N} = \frac{(725+510+440+250)^2}{20} = 185,281
\]

\[
\text{SST} = 211,225 - 185,281 = 25,944
\]

Calculation of between group sum of squares (SSB)

\[
\text{SSB} = \sum (\bar{X} - \bar{X})^2
\]

\[
\frac{(\sum X)^2}{n} = \frac{(725)^2 + (510)^2 + (440)^2 + (250)^2}{5 + 5 + 5 + 5} = 105125 + 52020 + 38720 + 12500 = 208,365
\]

\[
\frac{(\sum X)^2}{N} = \frac{(725+510+440+250)^2}{20} = 185,281
\]

\[
\text{SSB} = 208,365 - 185,281 = 23,084
\]

Calculation of within group sum of squares (SSw)

\[
\text{SSw} = \sum (X - \bar{X})^2 \text{ or } \text{SSW} = \text{SST} - \text{SSB}
\]

\[
\text{SSw} = \text{SST} - \text{SSB} = 25,944 - 23,084 = 2860
\]

Calculation degrees of freedom

\[
\text{SST df} = N - 1 = 20 - 1 = 19
\]
SSB df = n - 1 = 4 - 1 = 3
SSW df = n - 1 + n - 1 + n - 1 + n - 1 = 4n - 4 = 4 (5) - 4 = 20 - 4 = 16

Calculation of Variances
Between group variance (SB\(^2\)) = \(\frac{\text{Between group sum of squares (SSB)}}{\text{Between group degree of freedom}}\)

\[ SB^2 = \frac{23084}{3} = 7695 \]

Within group variance (SW\(^2\)) = \(\frac{\text{Within group sum of squares (SSW)}}{\text{Within group degree of freedom}}\)

\[ SW^2 = \frac{2860}{16} = 179 \]

\[ F\text{-value} = F_{df_1, df_2} = \frac{SB^2}{SW^2} = \frac{7695}{179} = 42.99 \]

Table 4 shows that calculated F-Value of 42.99 resulted from the relationship between stakeholder-oriented CSR and improved corporate image/reputation in Etisalat telecommunication company United Arab Emirates. This calculated F-Value is significant since it is greater than the critical F-Value of 3.24 given 3/16 degree of freedom at 0.05 level of significance. Hence, the null hypothesis is rejected while the alternative is accepted. This shows that there is a significant relationship between stakeholder-oriented CSR and improved corporate image/reputation in Etisalat telecommunication company United Arab Emirates.

Table 4: Computation of Analysis of Variance on the relationship stakeholder-oriented CSR and improved corporate image/reputation in Etisalat telecommunication company United Arab Emirates.

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>Sum of squares</th>
<th>Degree of freedom</th>
<th>Mean sum of squares</th>
<th>Calculated F-value</th>
<th>Table critical F-value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between group</td>
<td>23084</td>
<td>3</td>
<td>7695</td>
<td>42.99</td>
<td>3.24</td>
<td>Ho: Rejected</td>
</tr>
<tr>
<td>Within group</td>
<td>2860</td>
<td>16</td>
<td>179</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>25944</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Statistical Computation and Table 3.

3.3 Test of the Second Hypothesis

Ho: There is no significant relationship between stakeholder-oriented CSR and enhanced products competitive advantage in Etisalat telecommunication company United Arab Emirates

H1: There is a significant relationship between stakeholder-oriented CSR and enhanced products competitive advantage in Etisalat telecommunication company United Arab Emirates
Table 5. Computation of Statistical Variables on the second Hypothesis from table 2

<table>
<thead>
<tr>
<th>S/No.</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>X2</td>
<td>X</td>
<td>X2</td>
</tr>
<tr>
<td>6</td>
<td>130</td>
<td>16900</td>
<td>95</td>
<td>9025</td>
</tr>
<tr>
<td>7</td>
<td>160</td>
<td>25600</td>
<td>105</td>
<td>11025</td>
</tr>
<tr>
<td>8</td>
<td>140</td>
<td>19600</td>
<td>100</td>
<td>10000</td>
</tr>
<tr>
<td>9</td>
<td>120</td>
<td>14400</td>
<td>105</td>
<td>11025</td>
</tr>
<tr>
<td>10</td>
<td>165</td>
<td>27225</td>
<td>95</td>
<td>9025</td>
</tr>
<tr>
<td>Totals</td>
<td>715</td>
<td>103725</td>
<td>500</td>
<td>50100</td>
</tr>
</tbody>
</table>

Source: Survey Data, 2017.

Calculation of total sum of squares (SST)

\[ SST = \sum (\bar{X} - \bar{X})^2 \]

\[ \sum X^2 = 103725 + 50100 + 38025 + 15925 = 207,775 \]

\[ \frac{(\Sigma X)^2}{N} = \frac{(715+500+435+275)^2}{20} = 185,281 \]

\[ SST = 207,775 - 185,281 = 22,494 \]

Calculation of between group sum of squares (SSB)

\[ SSB = \sum (X - \bar{X})^2 \]

\[ \frac{(\Sigma X)^2}{n} = \frac{(715)^2 + (500)^2 + (435)^2 + (275)^2}{5 + 5 + 5 + 5} = 102245 + 50000 + 37845 + 15125 = 205,215 \]

\[ \frac{(\Sigma X)^2}{N} = \frac{(715+500+435+275)^2}{20} = 185,281 \]

\[ SSB = 205,215 - 185,281 = 19,934 \]

Calculation of within group sum of squares (SSW)

\[ SSW = \sum (X - \bar{X})^2 \text{ or } SSW = SST - SSB \]

\[ SSW = SST - SSB = 22,494 - 19,934 = 2560 \]

Calculation degrees of freedom

SST df = N - 1 = 20 - 1 = 19
SSB df = n - 1 = 4 - 1 = 3
SSW df = n – 1 + n – 1 + n – 1 + n – 1 = 4n - 4 = 4 (5) - 4 = 20 - 4 = 16

Calculation of Variances

Between group variance (SB^2) = \frac{\text{Between group sum of squares (SSB)}}{\text{Between group degree of freedom}}

SB^2 = \frac{19934}{3} = 6645

Within group variance (SW^2) = \frac{\text{Within group sum of squares (SSW)}}{\text{Within group degree of freedom}}

SW^2 = \frac{2560}{16} = 160

F-value = F_{\text{numerator, denominator}} = \frac{\text{Between group variance}}{\text{Within group variance}} = \frac{6645}{160} = 41.53

Table 6 shows that calculated F-Value of 41.53 resulted from the relationship between stakeholder-oriented CSR and enhanced products competitive advantage in Etisalat telecommunication company United Arab Emirates. This calculated F-Value is significant since it is greater than the critical F-Value of 3.24 given 3/16 degree of freedom at 0.05 level of significance. Hence, the null hypothesis is rejected while the alternative is accepted. This shows that there is a significant relationship between stakeholder-oriented CSR and enhanced products competitive advantage in Etisalat telecommunication company United Arab Emirates.

Table 6: Computation of Analysis of Variance on the relationship between stakeholder-oriented CSR and enhanced products competitive advantage in Etisalat telecommunication company United Arab Emirates

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>sum of squares</th>
<th>Degree of freedom</th>
<th>Mean sum of squares</th>
<th>Calculate F-value</th>
<th>Table critical F-value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between group</td>
<td>19934</td>
<td>3</td>
<td>6645</td>
<td>41.53</td>
<td>3.24</td>
<td>Ho: Rejected</td>
</tr>
<tr>
<td>Within group</td>
<td>2560</td>
<td>16</td>
<td>160</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>22494</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Statistical Computation and Table 5

4. Conclusion and Recommendations

The paper discussed corporate social responsibility (CSR) and non-financial organizational performance in Etisalat telecommunication company United Arab Emirates. It assumes that stakeholder-oriented CSR would improve non-financial organizational performance. The three major findings of the research are as follows:

- Stakeholder-oriented CSR could improve consumers’ attitude towards the firm’s products
by reducing the level of skepticism.

- There is a significant relationship between stakeholder-oriented CSR and enhanced products competitive advantage in Etisalat telecommunication company United Arab Emirates.

- There is a significant relationship between stakeholder-oriented CSR and improved corporate image/reputation in Etisalat telecommunication company United Arab Emirates.

Arising from the findings of this paper, it is suggested that the management of Etisalat should take the following measures to sustain the current gains of its stakeholder-oriented CSR activities:

(I) Sustenance of the current CSR practices: The current CSR efforts should be sustained through the introduction of different types of incentives for personnel responsible for the execution of corporate CSR responsibilities.

(II) Continuous monitoring of key stakeholders expectations: Since the expectations of key stakeholders are constantly changing there is a need for a monitoring committee to align corporate CSR activities with the current expectations of key stakeholders.

(III) Continuous review of organizational CSR policies and practices: Organizational CSR policies and practices should be reviewed regularly to align them with current industrial best practices.

(IV) Continuous consultation with key stakeholders: Key stakeholders should be consulted on a regular basis to obtain inputs for CSR decision making.

(V) Continuous provision of resources: Resources should be made available on a regular basis through budgeting, to sustain current CSR activities and make financial provision for future projects.

References


