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# Implications Of Environmental Factors On The Productivity Of Selected Small And Medium Scale Enterprises In Rivers-State

**Jonah Charles Tambari**

Department of Management  
Faculty of Management Sciences  
University of Portharcourt, Rivers State, Nigeria

**Aginah Chioma**

Department of Business Administration and Management,  
Akanu Ibiam Federal Polytechnic, Unwana, Afikpo, Ebonyi State

**Martins C Ononogbo**

Department of Business Management,  
IMO State University, Owerri, Nigeria

## ABSTRACT

This study is on implications of environmental factors on the productivity of small and medium scale enterprises in River-state: a study of selected SMES in Portharcourt. The study took a descriptive survey approach and relied on a five point likert scale questionnaire as its major source of data. The study covered a population of 150 members of staff of three SMEs selected from the three senatorial zones of Rivers-state from where a sample of 124 respondents was drawn using purposive sampling technique. The data gathered was analyzed using multiple regressions with the aid of 20.0 version of the statistical package for social sciences (SPSS 20.0). Results obtained from the joint test shows that environmental factors affects the productivity of SMEs. However, the results of the individual test suggest that the implications of economic and political environmental factors are severely felt by SMEs than the socio-cultural factors. Based on the results obtained, the paper drew three conclusions and advanced three recommendations among which were; that SMEs should strategically engage in constant monitoring and conducting of environmental scanning, SMEs should learn to align their operational strategies with present market and environmental realities. This calls for a regular update and adjustment in strategies and that Government should provide an urgent safety net for SMEs against undue taxation and other harsh economic policies that tend to hamper their productivity

**Keywords:** business environments, economic, political, productivity, SMEs, socio-cultural

## INTRODUCTION

The operational environment of business across the globe is characterized with complexity and dynamism. Business environment is said to be complex because there are many inter-playing factors, and dynamic because it is in a constant change. All organizations are seen as an open system. This presupposes that they interact with their environment; hence, they affect and are affected by events and trends in their environment. Small and medium scale enterprises in Nigeria are one of the major hits in the changes in operational environment; this may not be unconnected with their lack of capacity to compete with large firms and imported products from other countries where the cost of production is cheaper especially those from the Asian countries, they enjoy less protection from the government and are exposed to lack of social capital, all these creates pressure on the productivity of SMEs in Nigeria. The situation of SMEs in Nigeria appears more pathetic as government economic policies are changed at ease without concern to its industrial development impact, the political terrain has proven to be unstable

and the lack of policy direction and investment on technological development and socio-cultural affairs has created a knowledge gap in the economy that hampers the productivity of SMEs. Emphasizing the significance of business environment, Oginni (2010), posits that no business organization can operate successfully in isolation without dependence on supportive institutions, variables and factors i.e business organization exists and operates within an environment where there is complex interplay in terms of activities as well as networks of relationship between and among human resources, material resources and other systems. Business environment according to Oginni and Faseyi (2012) is expressed as the sum total of the external forces that influences individuals, businesses and communities. In the views of Adebayo et al (2005), environment is summarized as the surrounding of a phenomenon which from time dictate and shape the direction. Business organization does not operate in vacuum; it operates within the environment where the production and distribution of goods and services are carried out.

### **Statement of the Problem**

For organizations to achieve their goals, they must do that within allowable resources of the environment. The economy provides the needed market situation and funding for businesses, when the economic factors in the environment does not support business performance, the firm may not be able to produce profitably. Peace is a sine-quantum for productivity, the political environment especially in developing economies like Nigeria may be exposed to violence and frequent change of government, and this may lead to change in both economic and public policies. This makes it difficult for SMEs to accurately forecast and plan their operations, this hinders productivity.

### **Objectives of the Study**

The general objective of this study is to the impact of talent management on the performance of business organizations. The specific objectives are as follows:

1. To find out the implications of economic environment on the effectiveness of SMEs in Nigeria.
2. To examine the implications of political environment on the efficiency of SMEs in Nigeria.
3. To examine the implications of socio-cultural environment on SMEs competitiveness

### **Research Questions**

This paper was guided by the following questions;

1. What are the implications of economic environment on the effectiveness of SMEs in Nigeria?
2. What are the implications of political environment on the efficiency of SMEs in Nigeria?
3. What are the implications of socio-cultural environment on SMEs competitiveness?

### **Hypotheses**

The following hypotheses were raised for this study;

**H<sub>01</sub>:** economic environment does not have significant implications on the effectiveness of SMEs in Nigeria.

**H<sub>02</sub>:** political environment does not have significant implications on efficiency of SMEs in Nigeria.

**H<sub>03</sub>:** socio-cultural environment does not have significant implications on the competitiveness of SMEs in Nigeria.



## REVIEW OF RELATED LITERATURE

### Business Environment

The concept of business environment according to the business dictionary (2013), can be defined as the combination of internal and external factors that influence a company's operating situation. The business environment can include factors such as: clients and suppliers; its competition and owners; improvements in technology; laws and government activities; markets, social and economic trends. Ask.com (2013) defines business environment as the physical and operational factors, both internal and external, that affect the flow of activities in a business. They include; customers, competitors, suppliers, distributors, industry trends, substitutes, regulations, government activities, the economy, demographics, social and cultural factors, innovations and technological developments. A business is influenced by the environment in which it operates and the success of any business is dependent on its ability to adapt to its environment. The complexity of this reality for business owners is compounded by the fact that there are many different environments that each business operates in. There is the macro environment, which in today's global economy refers to the whole world, where events often indirectly impact on businesses and there is the microenvironment, local events and circumstances which directly affect and interact with a business. (GIBS, 2013). A business' environment influences the functioning of the business system. Therefore, a business environment may be defined as all those conditions and forces which are external to the business and are beyond the individual business unit, but they all operate within it. These forces are customers, creditors, competitors, government, socio-cultural organizations, political parties' national and international organizations etc. Some of these forces affect the business directly whilst some others have an indirect effect on the business (Blurtit, 2013). According to the Institute of Chartered Accountants study pack (2009) business environment can be defined as a set of factors or conditions that are external to the business but which have influence on the operations of the business enterprise. External in the context means that these factors or forces are not usually within the control of the business enterprise. It further describes it as the web of forces which form the setting in which the firm makes its decisions.

### Nature of Business Environment

Saritha (2012) gave the followings as the nature of business environment;

**(1) Totality of External Forces:** Business environment is the sum totals of all those factors/forces which are available outside the business and over which the business has no control. It is the group of many such forces that is why, its nature is of totality.

**(2) Specific and General Forces:** The forces present outside the business can be divided into two parts – specific and general.

**(i) Specific:** These forces affect the firms of an industry separately, e.g., customers, suppliers, competitive firms, investors, etc.

**(ii) General:** These forces affect all the firms of an industry equally, e.g., social, political, legal and technical situations.

**(3) Interrelatedness:** The different factors of business environment are co-related. For example, let us suppose that there is a change in the import-export policy with the coming of a new government.

In this case, the coming of new government to power and change in the import-export policy are political and economic changes respectively. Thus, a change in one factor affects the other factor.

**(4) Dynamic Nature:** As is clear that environment is a mixture of many factors and changes in

some or the other factors continue to take place. Therefore, it is said that business environment is dynamic.

**(5) Uncertainty:** Nothing can be said with any amount of certainty about the factors of the business environment because they continue to change quickly. The professional people who determine the business strategy take into consideration the likely changes beforehand. But this is a risky job. For example, technical changes are very rapid. Nobody can anticipate the possibility of these swift technical changes. Anything can happen, anytime. The same is the situation of fashion.

**(6) Complexity:** Environment comprises of many factors. All these factors are related to each other. Therefore, their individual effect on the business cannot be recognized. This is perhaps the reason which makes it difficult for the business to face them.

**(7) Relativity:** Business environment is related to the local conditions and this is the reason as to why the business environment happens to be different in different countries and different even in the same country at different places.

Source:<http://www.yourarticlelibrary.com/management/7-important-characteristics-of-business-environment/891/>

### **Factors in Business Environment**

There are many factors in business environment. But in this paper, we shall review only those that affect the objectives of the study

**Economic:** Ogundele (2005) says that is vital concern to an organization. He further said that, the economic environment goes a long way to determine and define the opportunities for an organization; this is because an expanding economy provides operational scope for the organizational existence as well as for the establishment of new ones. However, a period of recession can bring about failures and probably liquidation of the organization. It is of paramount importance that the management should be able to distinguish between short-run phenomena and more fundamental changes in its assessment of the overall economy.

**Political:** The political environment is viewed via the legal framework where the organization operates and this is done through the laws and regulations that guide the operations of the business in question. The political stability of the environment is also a necessity for effective and efficient operation of the business. The management of the organization must take cognizance of these constraints, actual and potential, and seek out the implications for the business organisation from legal advisers (Ogundele, 2005).

**Socio-Cultural Factors:** Wetherly (2011) described the socio-cultural environment as consisting of everything that is not contained within the economy or political system. According to him, socio-cultural setting is made up of collection of activities, and the relationships people engage in their personal and private lives which include population features, age, ethnicity, religion, values, attitude, lifestyles and associates. These environmentally relevant patterns of behaviour lead to the creation of different cultural values in different societies, some of which influence the decision to create new businesses.

### **Small and Medium Scale Enterprises**

According to Olorunshola (2003), the concept of SMEs is relative and dynamic. The characteristics of SMEs are uncertainty, innovation and evolution. A firm understanding of SMEs world required a good knowledge of its features. In Nigeria SMEs are usually small in size

and lack large organizational structure and management culture while the urban SMEs are more structural, the rural ones are less structured. This represents one of the most important characteristic of SMEs in Nigeria. SMEs are in most cases a one man business or partnerships enterprise, although they may be registered as limited liability company, (Udechukay, 2003). Olurunshola (2003) affirmed that this ownership style has led small and main enterprise to have a simple management structure and make it easiest to manage than that of large firms, and few numbers of staff and in some cases low level of education by some owners of SMEs. SMEs almost shave the same characteristic with a sole proprietorship in that, there is no legal personality between the SMEs and their owners, which means that the life span of SMEs depends on the life of the owners; when the owner dies, if not properly taken care by the estate the business will die with the owner(s) Another feature of the SMEs sector in some countries is its heterogeneous nature, ranging from retail outlets to hugely paid professionals and substantially manufactured organization small and medium enterprise are also likely to vary in organizational form, from sole proprietorship (one man business), scale corporations (public or private), professionals and partnerships. According to the World Bank (2013), SMEs are defined based on the size of the enterprise in terms of the total number of employees and/ or total assets value. SMEs and large firms can be differentiated based on the aforementioned criteria. However, the definition of SMEs can be viewed from different perspectives, depending on the organization or country. In Nigeria SMEs are defined as the firms that employ fewer than 200 employees and have less than 500 million Naira worth of total assets, excluding land and building (SMEDAN, 2012). Specifically, small enterprises refer to firms with employees between 10 to 49 and have N5m to less than N50m assets excluding land and building. Firms with employees between 50 to 199 and have N50m to less than N500m assets excluding land and building is referred to as medium enterprises

### **Problems of SMEs in Nigeria**

The fact that SMEs have not made the desired impact on the Nigerian economy in spite of all the efforts and support of succeeding administrations and governments gives a cause for concern. It underscores the belief that there exists fundamental issues or problems, which confront SMEs but which hitherto have either not been addressed at all or have not been wholesomely tackled.

A review of literature reveals indeed the following plethora of problems, which are enormous, fundamental and far-reaching:

1. Inadequate, inefficient, and at times, non-functional infrastructural facilities, which tend to escalate costs of operation as SMEs are forced to resort to private provisioning of utilities such as road, water, electricity, transportation, communication, etc.
2. Bureaucratic bottlenecks and inefficiency in the administration of incentives and support facilities provided by the government. These discourage would-be entrepreneurs of SMEs while stifling existing ones.
3. Lack of easy access to funding/credits, which can be traceable to the reluctance of banks to extend credit to them owing, among others, to poor and inadequate documentation of business proposals, lack of appropriate and adequate collateral, high cost of administration and management of small loans as well as high interest rates.
4. Discrimination from banks, which are averse to the risk of lending to SMEs especially start-ups
5. High cost of packaging appropriate business proposals
6. Uneven competition arising from import tariffs, which at times favor imported finished products
7. Lack of access to appropriate technology as well as near absence of research and development
8. High dependence on imported raw materials with the attendant high foreign exchange

cost and scarcity at times

9. Weak demand for products, arising from low and dwindling consumer purchasing power aggravated by lack of patronage of locally produced goods by the general-public as well as those in authority.
10. Unfair trade practices characterized by the dumping and importation of substandard goods by unscrupulous businessmen. This situation is currently being aggravated by the effect of globalization and trade liberalization, which make it difficult for SMEs to compete even in local/home markets.
11. Weakness in organization, marketing, information-usage, processing and retrieval, personnel management, accounting records and processing, etc. arising from the dearth of such skills in most SMEs due to inadequate educational and technical background on the part of the SME promoters and their staff.
12. High incidence of multiplicity of regulatory agencies, taxes and levies that result in high cost of doing business and discourage entrepreneurs. This is due to the absence of a harmonized and gazette tax regime, which would enable manufacturers to build in recognized and approved levies and taxes payable.
13. Widespread corruption and harassment of SMEs by some agencies of government over unauthorized levies and charges
14. Absence of long-term finance to fund capital assets and equipment under project finance for SMEs
15. The lack of scientific and technological knowledge and know-how, i.e. the prevalence of poor intellectual capital resources, which manifest as:
  - i. Lack of equipment, which have to be imported most times at great cost (capital flight) and which would require expatriate skills to be purchased at high costs.
  - ii. Lack of process technology, design, patents, etc., which may involve payment of royalties, technology transfer fees, etc. and heavy capital outlay.
  - iii. Lack of technical skills in the form of technological and strategic capability
  - iv. Inability to meet stringent international quality standards, a subtle trade barrier set up by some developed countries in the guise of environmental or health standards. A relevant example is the impending ban of marine foods, vegetables, fruits and other agricultural products from Africa into the United States of America markets.
  - v. The inability to penetrate and compete favorably in export markets either because of poor quality of products, ignorance of export market strategies and networks or lack of appropriate mechanism and technology to process, preserve and package the products for export.
16. Lack of initiative and administrative framework or linkage to support and sustain SMEs' development, which to a large extent, is also a reflection of poor technological capability or intellectual resource
17. Lack of appropriate and adequate managerial and entrepreneurial skills with the attendant lack of strategic plan, business plan, succession plan, adequate organizational set-up, transparent operational system, etc on the part of many founders and managers of SMEs in Nigeria. As a fallout of this, many of the SME promoters purchase obsolete and inefficient equipment thereby setting the stage *ab initio* for lower level productivity as well as substandard product quality with dire repercussions on product output and market penetration and acceptance.

### EMPIRICAL REVIEW

Chikwe, Joel and Achiole (2015), examined the impact of regulatory environment on the effectiveness of small and medium scale enterprises. The study employed a survey approach

and used the questionnaire as its major source of data collection. In order to guide the study, two research questions and hypotheses that are consistent with the objectives of the study were raised. The population of study consists of 105 staff of selected five small and medium scale enterprises in Owerri. The researchers used purposive sampling technique to select 89 members of staff as the sampled unit. The mean score  $X$  was the tool for data analysis, and from the findings, the researchers concludes that regulatory environment has significant impact on business competitiveness and innovativeness which were used to proxy effectiveness of small and medium scale enterprises. Based on the findings also, the researchers among others recommended that consultation between SME regulators and operators of SMEs can help address some of the harsh consequences of the regulatory environment. Felicia et al (2014), studied effects of socio-cultural realities on the Nigerian small and medium sized enterprises (SMES): case of small and medium sized enterprises in Lagos state. The objectives of this paper are in two-folds, namely (i) identify socio-cultural realities in the SME business environment in Nigeria and; (ii) examine the impact of these factors (in i) on the development of SMEs. Socio-cultural realities were measured from three major factors, namely attitude; religion and values: each of these factors were further categorized into several level of constructs. Responses from ten (10) SME owners/representatives in the five (5) major districts of Lagos state identified the socio-cultural realities as key factors affecting their businesses. They recommended a further research to further establish whether these results reflect the general condition in other states of Nigeria. Using cost technical and allocative efficiency scores, Lassana and Abdoulaye (2013), assessed the impact of electricity outages on SME enterprise productivity in Senegal. Results based on survey data from 528 businesses indicate that power outage duration has a positive significant effect on cost and technical efficiencies, and SMEs were more successful in doing so than larger ones. Finding a solution to the power outage issue while affecting negatively cost efficiency, seems to promote technical and scale efficiencies. Further, having a loans and/or a credit line appeared to have positive effects on technical and scale efficiencies.

### METHODOLOGY

The survey research method was adopted in this study. A sample of 3 SMEs was randomly selected from the three geo-political zones of Rivers-state. The sample was obtained by employing the stratified sampling techniques. Out of one hundred and fifty (150) questionnaires administered to the respondents in these 3 companies, one hundred and twenty-four (124) were duly completed and returned. Thus, the analysis was based on the returned questionnaires only.

### ANALYSIS AND DISCUSSION OF RESULTS

In analyzing the data collected from the respondents, multiple regression analysis was employed. The variables of the study can be expressed in algebraic form. Thus,

$$Pr = F (E, P, S \dots\dots\dots U)$$

Where

Pr= productivity which is proxied by efficiency, effectiveness, increase in sales, and customer satisfaction e.t.c

E= economic environment (monetary policies, interest rate, taxation)

P= political environment (elections, regulations, authority relationship)

S= socio-cultural environment (values, norms, belief, attitudes, religions)

In order to provide answer to the research questions and hypotheses that the economic, socio-cultural and political environment has no implication on SMEs productivity, a regression line of  $Y = -85.31 + 4.69 - 3.01$  was obtained

## Discussion of Results

The finding shows that economic environment and political environment has a positive and significant implication on the productivity of SMEs in Rivers-State. Thus, the change in the economic environment will have a greater contribution on the Productivity of SMEs. The values are 0.93 and 0.68. This indicates that the economic environment has 93% significant implication on the productivity of SMEs while the political environment has 68% impact. The value of  $R^2$  is 1.28. This implies that external business environment has a 128% combined impact on the productivity of SMEs in Rivers-state.

## Conclusion

From the findings in this study, the paper concluded that the productivity of SMEs is impacted more by changes in the political and economic environment than socio-cultural environment and this may have been caused by the failure of SMEs to continuously monitor and review their strategies in order to ensure that they are in conformity with market and environmental realities

## Recommendations

- i. SMEs should strategically engage in constant monitoring and conducting of environmental scanning.
- ii. SMEs should learn to align their operational strategies with present market and environmental realities. This calls for a regular update and adjustment in strategies.
- iii. Government should provide an urgent safety net for SMEs against undue taxation and other harsh economic policies that tend to hamper their productivity

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## **Sustainable Curbing Of Youth Restiveness In IMO State: The Strategic Role Of Entrepreneurship Development**

**Prof. Gideon A. Emerole**

Department of Business Administration  
Michael Okpara University of Agriculture, Umudike, Abia State

**Goddey C. Chikwe**

Department of Business Management  
Evangel University, Akaeze, Ebonyi State

**Augustus-Daddie Joel**

Department of Business Administration and Management  
Ken Saro-Wiwa Polytechnic, Bori, Rivers State

### **ABSTRACT**

**This study examined Curbing Youth Restiveness in Imo State: The Strategic Role of Entrepreneurship Development. The descriptive survey research method was adopted and the study covered a population of 1396 people randomly selected from 20 autonomous communities from the two oil bearing Local Government Areas in Imo state, representatives of community based Non-governmental organizations that are involved in youth capacity development, security experts and scholars of sociology and rural development. Data was generated through a five point likert scale questionnaire from a sample of 311 respondents chosen using the Taro Yamene method. The hypotheses were tested with kruskawalis test (H) with the aid of the 23.0 version of statistical package for social sciences (SPSS) based on the 279 questionnaires validly filled and returned. The study concluded that the fight against youth restiveness and indeed all social vices in Imo state in particular and Nigeria at large must be reorganized to adopt proactive and preventive measures through the expansion of the nation's economic space for youth's inclusiveness, especially youths in rural areas whose access to functional and quality education is very limited. This can only be achieved if entrepreneurial development is giving active attention and not mere lip service. Furthermore, a comparative look at the results obtained (i.e EKCD 0.001 and AF 0.002) shows that sharing money to youths without giving them functional entrepreneurial skills does not create the needed sustainable route to curbing restiveness. It was recommended that to curb restiveness, youths empowerment should focus more on entrepreneurial knowledge creation and sharing than sharing of funds without tagging them to productive economic projects, school curriculum should be revised to embrace entrepreneurship development and that attention should be giving to vocational education through the establishment and adequate funding of vocational institutions that equips the youths with contemporary marketable entrepreneurial skills**

**KEYWORDS:** Access to Finance, Entrepreneurial, Knowledge creation, Sustainable

### **INTRODUCTION**

Youth restiveness in Nigeria has been a predominant issue in recent past. Increase in the occurrence of acts of violence and lawlessness, including things like hostage taking of prominent citizens and expatriate oil workers, as well as oil bunkering, arms insurgency, cultism, etc is gradually returning as a norm especially in the Niger Delta region. History has shown that youth restiveness is not a recent phenomenon. Various forms of youth restiveness that are economically, politically, or religiously motivated have existed for a long time.

Elegbeleye (2005) vividly captures the presence and effects of youth restiveness in Nigeria when he stated that young people all over the world are vital and important segment of the society in which they live. A disciplined, focused, and law abiding youth can create a bright future for any nation. Conversely, a lawless, indulgent, and violent youth is a great threat to a nation's peace and security. It is important to note that in a nation like Nigeria, there appears to be a disconnect between the youths and the government which has pushed many youths to self-help which includes civil disobedience that manifest in their indulgence into actions that are inimical to the society and that constitutes sabotage to the economy of the nation. However, over the years, the different state governments in the Niger Delta region through their ministry of youth development and other social interventionist institutions and programmes have sought for economic models that can guarantee the active inclusion of the youths in the economy while helping to mitigate security challenges. One of such economic model/measure is the promotion of entrepreneurship among the youths.

In Imo state, the approach to managing youth militancy has taking an inglorious political face than a sustainable model. The creation of multiple youth organizations such as Niger Delta Youths Movement (NDYM), Imo State Oil Producing Area Commission Youths (ISOPADEC YOUTHS) and other community based youth organizations under the sponsorship of either the state or local government ares etc and the foisting of politically manipulated leadership on these youth organizations by the community leaders who are cronies or representatives of the government has not help matters rather it has exacerbated the acrimony among the youths which often takes its toll on the security of the communities and the dignity of the youths and human race. Furthermore, the state government has joined the bandwagon by failing to institutionalize a comprehensive model for curbing this menace rather, they have consistently engaged in face saving measures; for example, in the year 2013, the Imo State government purportedly distributed the sum of one five hundred million naira to the youths of Oguta and Ohaji/Egbema local government areas which are the two oil bearing local governments in Imo state which it tagged "Youth Empowerment Trust Fund", the governor stressed that the essence is to address the *restiveness* occasioned by *poverty and lack of job* in the areas (source; News Express 12/07/2013). Five years down the line, the narratives as it affects real youth's empowerment have not changed for good rather it has worsened and the purported trust fund eroded. While politicians clapped and promoted this waste of our common patrimony as youth empowerment, the impact of this on the curbing of social vices among the youths is yet to be seen. Similar to this is the appointment of youths who are believed to have links to this restive youth groups into government as a palliative measure to assuage them, while this may have recorded marginal success in helping to promote peace in these oil bearing communities, its sustainability is highly questionable, hence its failure as a route to curbing the restiveness among the youths. It has therefore become pertinent to look towards a more reliable and sustainable model that can prepare the youths with skills for tomorrow, give them hope in place of despair, restore their dignity, self confidence and integrity as responsible and responsive members of the society.

### **Objectives of the study**

This study is generally focused on Curbing Youth Restiveness in Imo State: the Strategic Role of Entrepreneurship Development, its specific objectives are

- i. Examination of entrepreneurial knowledge creation and diffusion as a model for curbing youth restiveness in Imo state
- ii. Examination of access to finance as model for curbing youth restiveness in Imo state



## Hypotheses

**H<sub>01</sub>:** Entrepreneurial knowledge creation and diffusion is not a significant model for curbing youth restiveness in Imo state

**H<sub>02</sub>:** Access to finance is not a significant model for curbing youth restiveness in Imo state

## REVIEW OF LITERATURES

The National Youth Development Policy (2001) defines youth as people aged 18-35. The total population of youths between 10 and 24 years in Nigeria was 45.4 million in 2006, which is 34 percent of the total population. Young people constitute the majority of the population and are at the centre of societal interactions and transformations. Yet, children and youths are often placed at the margins of the public sphere and major political, socio-economic and cultural processes. According to Ikelegbe, youth ordinarily is a category of early adulthood, emerging in activity and involvement in society but somewhat limited by societal values and some levels of dependency and perhaps agency (Ikelegbe, 2006). Elegbeleye (2005) defined youth restiveness as "a sustained protestation embarked upon to enforce desired outcome from a constituted authority by an organized body of youths." It is marked by violence and disruption of lawful activities. Youth restiveness manifests through confrontation, vandalization of oil pipelines, oil bunkering, oil mafia, oil piracy, work stoppages, kidnapping of company staffs for ransom, extortion e.g. illegal levies from oil company workers etc. According to Komonibo (2004), this could be as a result of intra and inter community strife, poverty, protracted property disputes e.g. farm land, religious and ethnic divide economic marginalization, political marginalization and high handedness of office/political office holders, destruction of traditional values, dissatisfaction with government policies, drug abuse. Fubara (1996) identified collapse of the educational system, the economy, socio-political instability due to frequent and violent change of government, easy access to all kinds of deadly weapons as well as absence of acquisition of employable and entrepreneurial skills by the youths, lack of employment opportunities for the youths and social uprising in Nigeria as being responsible for youth restiveness in Niger Delta Region. He also identified missiles, rocks, firearms of all descriptions, crude guns, military artillery, dynamites, improvised explosive devices (IED) machetes, axes, and high powered engine boats etc., as the weapons at the disposal of the restive youths.

Entrepreneurship according to wikipedia, "is the act of being an entrepreneur" or "one who undertakes innovations, finance and business acumen in an effort to transform innovations into economic goods". This may result in new organizations or may be part of revitalizing mature organizations in response to a perceived opportunity. The most obvious form of entrepreneurship is that of starting new business which is referred to as 'Start-up Company'. Entrepreneurship has been simply captured as the use of human courage to seek investment opportunities and establish a profit-oriented enterprise (Ikeme & Onu, 2007). Entrepreneurship is generally viewed as a process of creating something new. Doing this involves a lot of time and effort devoted to ensure the tasks at hand and the resultant effects include monetary and personal satisfaction as well as independence. Entrepreneurship involves creation process, conscious devotion of time and effort, involves risk and has some rewards. Gana (2001), defined it as willingness and ability of an individual to seek out investment opportunities in an environment and be able to establish and run an enterprise successfully based on identified opportunities. Hisrich and Peters (2002), simply captured the term as the dynamic process of creating incremental wealth. They went further to explain that entrepreneurship is the personalized version of actualizing one's desire, ambition, and expression. Entrepreneurship is the capacity to harness the right quantity, quality and combination of resources that are consistent with profit making under risks and uncertainty. Essien (2006), defined entrepreneurship as the totality of self-asserting attributes that enable

a person to identify latent business opportunities, together with capacity to organize needed resources with which to profitably take advantage of such opportunities in the face of calculated risks and uncertainty

Ohaegbulem (2002) classified entrepreneurship into four categories. They are basic production, processing, distribution and services.

1. *Basic Production*: This includes farming, poultry, fishery, forestry, animal husbandry, etc. A veterinary medical doctor can set up a piggery or goatry. A botanist can go for tree plantation and agriculturist can go for yam, cassava, wheat, beans growing, etc.
2. *Processing*: This includes manufacturing, construction, food processing, publishing and printing, etc. The home economist can manufacture soap; bake different kinds of food from flour, knit sweater and cardigan. The educationist can open a model private commercial school.
3. *Distribution*: This includes wholesale and retail trading, advertising, transportation and some forms of communication businesses. Youths in Niger Delta can go into selling one commodity or the other, open supermarkets, business centres, etc.
4. *Services*: This includes finance, insurance, professional services such as secretarial and other reprographic functions. From the foregoing therefore, it could be concluded that various entrepreneurial skills exist. To this end, for any youth to function efficiently, there is need for him or her to acquire the needed entrepreneurial skills through the programme of study.

Youth occupy a prominent place in any society. Apart from being the owners and leaders of tomorrow, they outnumber the middle-aged and the aged (Onyekpe, 2007). Besides numerical superiority, youth have energy and ideas that are society's great potentials (Onyekpe, 2007). The National Youth Development Policy (2001,) asserts that Youth are the foundation of a society. Their energies, inventiveness, character and orientation define the pace of development and security of a nation. Through their creative talents and labour power, a nation makes giant strides in economic development and socio-political attainments. In their dreams and hopes, a nation finds her motivation; on their energies, she builds her vitality and purpose. And because of their dreams and aspirations, the future of a nation is assured. The statement above acknowledges the role of the youth in the peace and security of a nation. As the most active segment of any society, youth are the major determiners of peace and stability of a nation (Ozohu-Sulaiman, 2006). Conversely, the degree of disorderliness and instability in society is also determined in part by youth. Peace is a precursor of development. The absence of peace means that no meaningful development can take place. The National Youth Policy (2001) affirms that the extent of the youth's "responsible conduct and roles in society is positively correlated with the development of their country".

### **YOUTH RESTIVENESS: CAUSES AND CONSEQUENCES**

A number of studies have identified factors responsible for youth restiveness. Elegbeleye (2005) identifies three major factors: the peer motivated excitement of being a student, the jingoistic pursuit of patriotic ideas, and perceived victimization arising from economic exploitation. Another study carried out in Niger Delta region by Ofem and Ajayi (2008) identified lack of humanitarian and social welfare, lack of good governance, corrupt practices of government officials, inadequate training programmes, unemployment, inadequate recreational facilities, lack of quality education, and so on, as the reasons for incessant youth restiveness. This implies that a catalogue of closely-related factors is responsible for youth restiveness.

- *Bad Governance:* Good governance is required for the growth and development of any nation. Unfortunately, in Nigeria bad governance is more common than good, resulting in disjointed development. The World Bank (1992) identifies the main characteristics of bad governance to include:
  - failure to properly distinguish between what is public and what is private, leading to private appropriation of otherwise public resources;
  - inability to establish a predictable frame work for law and government behaviour in a manner conducive to development, or arbitrariness in the application of laws and rules;
  - excessive rules, regulations, licensing requirement and so forth which impede the functioning of markets and encourage rent-seeking;
  - priorities that are inconsistent with development, thereby resulting in misallocation of national resources; and
  - Exceedingly narrow base for, or non-transparent, decision making. These and more are the features of most administration in Nigeria. For instance, Onyekpe (2007) observes that successive administrations in Nigeria have not allocated much to the needs of the youth, and, worse still, the meager allocation are often diverted by government officials to their private accounts and projects. Thus, youth are restive and agitated when they perceive that resources meant for them are being wasted by those in authority.
  
- *Unemployment:* Unemployment is a hydra-headed monster which exists among the youth in all developing countries. Experts believe that the number of jobless youth is twice as high as official estimate. Ozohu-Suleiman (2006) notes Nigerian youth are trapped by unemployment. Zakaria (2006) believes that “the rising tide of unemployment and the fear of a bleak future among the youth in African countries have made them vulnerable to the manipulations of agents’ provocateurs”. These include aggrieved politicians, religious demagogues, and greedy multinationals that employ these youths to achieve their selfish ambitions. Zakaria (2006) strongly believes that the absence of job opportunities in developing countries is responsible for youth restiveness with disastrous consequences.
  
- *Poverty:* Poverty connotes inequality and social injustice and this traumatizes the poor. More than 70 percent of people in Nigeria are in abject poverty, living below the poverty line, and one- third survive on less than US \$1 dollar a day (Zakaria, 2006). This figure includes an army of youth in urban centres in Nigeria who struggle to eke out a living by hawking chewing sticks, bottled water, handkerchiefs, belts, etc. The sales-per-day and the profit margin on such goods are so small that they can hardly live above the poverty line. Disillusioned, frustrated, and dejected, they seek an opportunity to express their anger against the state. Aworawo (2000) and Zakaria (2006) agreed that there is a link among poverty, loss of livelihood, inequality, and youth restiveness as evidenced by the numerous violent protests against the wielders of power in Nigeria.
  
- *Inadequate Educational Opportunities and Resources:* Quality education has a direct bearing on national prestige, greatness, and cohesion. The knowledge and skill that young people acquire help determine their degree of patriotism and contribution to national integration and progress. Between 2000 and 2004, about 30 percent of Nigerian youth between 10 and 24 were not enrolled in secondary school (Population Reference Bureau, 2006). Perhaps the prohibitive cost of acquiring education is responsible. The after effect of this situation is that thousands of young people roam the streets in cities in Nigeria. Those who manage to complete secondary school have no opportunities for tertiary education. Having being denied the chance to reach their potential, they are disorientated and readily available for antisocial actions (Onyekpe, 2007). Worse still, some who struggle to enroll in various educational institutions drop out due to lack of basic learning facilities. This situation is attributable to the dwindling

resources of government at both federal and state levels as a result of an economic meltdown.

- *Lack of Basic Infrastructure:* Most rural communities and urban slums in Nigeria have no access to potable water, health facilities, electricity, communication facilities, industries and commercial facilities, etc. Behind social unrest and youth restiveness in the country is the agitation for equitable distribution of resources.
- *Inadequate Communication and Information flow:* Information is new ideas or knowledge extracted from the environment for human use with the aim of modifying behaviour, effecting changes, and enhancing efficiency in all human endeavors (Ajegbomogun, 2008). Information helps create enlightened and responsible citizens. Communication creates room for sharing information. It helps people express their thoughts and feelings, clarify problems, and consider alternative ways of coping or adapting to their situation. Such sharing promotes social cohesion. People must have access to communication facilities, to communicate with the people making the decisions that affect them. Sadly, rarely do people in Nigeria participate in decision-making processes on issues that affect their lives. Ifidon and Ahiauzu (2005), in their study of Niger Delta, revealed that inadequate communication and information flow is one factor responsible for youth restiveness in the area. Odili (2004) viewed violent restiveness as human acts that have different courses and motives, which are infinite. He went further to identify some of the causes of restiveness in Niger Delta as follows:
  1. Paranoid personal disorder and damaged self-concept: This makes people to blame others or the perceived “enemy”.
  2. Personal prevention: This is to meet the wishes of the institution and through processes of culturisation they see victims as less human.
  3. Personal gain: This is simply promotion, pay rises or as a means of attracting one’s or group goal.
  4. Felt-needs to protect a culture threatened at its root particularly in the face of disillusionment with established legal process.
  6. Mineral deposits and location of oil well, wrongly or rightly.
  7. Sudden separation of ethnic groups that have lived together and peacefully in one province.

#### **ENTREPRENEURSHIP DEVELOPMENT: A PANACEA TO YOUTH RESTIVENESS**

Ubah (2011) posits that Entrepreneurship will in addition to helping willing recipients to establish their own small-scale business or company after graduation, also help them to have the knowledge of how entrepreneurial firms operate. It will enable them to acquire the skill for innovation, creativity and opportunity recognition which are very essential for anyone entering the market. They will also learn the skills that are necessary for the various and changing challenges they face in their lifetime. Ubah suggests that in addition to these, entrepreneurship will be useful in curbing restiveness by:

- Enhancement of economic growth for the individual and the nation.
- Poverty alleviation.
- The solving of the problem of youth restiveness, cultism, arm robbery, vandalization of oil pipelines among others.
- Reducing of the issue of kidnapping and insecurity of life and property.
- Minimizing of human trafficking and prostitution.
- The reduction of the level of unemployment and
- The increase of income per capita.

Entrepreneurship among youths thus assumed importance against the background of poverty, widespread unemployment and the need to shift the attention of the citizenry away from white collar jobs and government patronage.

**METHODOLOGY**

The descriptive survey research method was adopted in this study and it covered a population of 1396 people randomly selected from 20 autonomous communities from the two oil bearing Local Government Areas in Imo state, representatives of community based Non-governmental organizations that are involved in youth capacity development, security experts and scholars of sociology and rural development. Data was generated through a five point likert scale questionnaire from a sample of 311 respondents chosen using the Taro Yamene method. The hypotheses were tested with kruskawalis test (H) with the aid of the 23.0 version of statistical package for social sciences (SPSS) based on the 279 questionnaires validly filled and returned

**RESULTS AND DISCUSSIONS**

SPSS OUTPUT FOR HYPOTHESIS ONE  
 NPAR TESTS /K-W=KCDandYR BY RANKS(1 5)  
 /STATISTICS DESCRIPTIVES QUARTILES  
 /MISSING ANALYSIS.

**Descriptive Statistics**

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles		
						25th	50th (Median)	75th
EKCDandYR	25	55.0800	38.87900	.00	134.00	33.0000	49.0000	71.0000
RANKS	25	3.0000	1.44338	1.00	5.00	2.0000	3.0000	4.0000

**Kruskal-Wallis Test**

**Ranks**

	RANKS	N	Mean Rank
EKCDandYR	1.00	5	3.00
	2.00	5	14.00
	3.00	5	10.80
	4.00	5	23.00
	5.00	5	14.20
Total		25	

**Test Statistics<sup>a,b</sup>**

	KCDandCYR
Chi-Square	19.163
Df	4
Asymp. Sig.	.001

a. Kruskal Wallis Test  
 b. Grouping Variable:  
 RANKS

At Asymp. Sig of 0.001, the SPSS outcome above shows a positive significant interaction between entrepreneurial knowledge creation and dissemination and the curbing of youths’ restiveness. The alternate hypothesis was therefore accepted in place of the null. This simply implies that entrepreneurial knowledge creation and diffusion can be leveraged extensively as a strategy to curb youth restiveness in Imo state

SPSS OUTPUT FOR HYPOTHESIS TWO  
 NPAR TESTS  
 /K-W=AFandYR BY RANKS(1 5)  
 /STATISTICS DESCRIPTIVES QUARTILES  
 /MISSING ANALYSIS.

### Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles		
						25th	50th (Median)	75th
AFandYR	25	55.8000	22.55179	25.00	104.00	37.0000	52.0000	71.5000
RANKS	25	3.0000	1.44338	1.00	5.00	2.0000	3.0000	4.0000

### Kruskal-Wallis Test

#### Ranks

	RANKS	N	Mean Rank
AFandYR	1.00	5	7.00
	2.00	5	19.70
	3.00	5	9.20
	4.00	5	21.00
	5.00	5	8.10
Total		25	

#### Test Statistics<sup>a,b</sup>

	AFandYR
Chi-Square	16.937
Df	4
Asymp. Sig.	.002

a. Kruskal Wallis Test

b. Grouping Variable:  
RANKS

The SPSS output above puts the Asymp. Sig at 0.002, this suggests a significant positive interaction between access to finance and the curbing of youth restiveness in Imo State. This simply implies that access to finance plays strategic role to curbing youth restiveness in Imo state

### CONCLUSION

This study concluded that the fight against youth restiveness and indeed all social vices in Imo state in particular and Nigeria at large must be reorganized to adopt proactive and preventive measures through the expansion of the nation's economic space for youth's inclusiveness, especially youths in rural areas whose access to functional and quality education is very limited. This can only be achieved if entrepreneurial development is giving active attention and not mere lip service. Furthermore, the a comparative look at the results obtained (i.e EKCD 0.001 and AF 0.002) shows that sharing money to youths without giving them functional entrepreneurial skills does not create the needed sustainable route to curbing restiveness

### RECOMMENDATIONS

The study recommends as follows;

- i. To curb restiveness, youths empowerment should focus more on entrepreneurial knowledge creation and sharing than sharing of funds without tagging them to productive economic projects
- ii. School curriculum should be revised to embrace entrepreneurship development
- iii. Attention should be giving to vocational education through the establishment and adequate funding of vocational institutions that equips the youths with contemporary marketable entrepreneurial skills

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## Performance Evaluation of Pakistan's Mutual Fund through CAPM and Fama French 3-Factor Model

**Syeda Zain Fatima**

MPhil: Accounting and Finance  
Department of: Accounting and Finance  
University of Central Punjab Lahore

**Muhammad Haroon**

MPhil: Accounting and Finance  
Department of: Accounting and Finance  
University of Central Punjab Lahore

### ABSTRACT

Mutual fund is selection for the common investors for investing in to the capital market. In the research paper Capital Asset Pricing Model (CAPM) and FAMA French 3 factor model applied for the measurement and evaluate the performance of the mutual fund. Daily data of mutual fund which are selected in open ended mutual fund of Pakistan and daily data collected from 2010 to 2016. Then applied these models and Capital Assets Pricing Model showed the significant result and  $R^2$  value more co-related with the market returns and premium. FAMA French 3 factor model showed the not good results with the two factors SMB and HML. Time series regression model are applied between two competing models.

**Keywords:** Mutual funds, Capital Assets Pricing Model, FAMA French 3 factor model.

### INTRODUCTION

With the increase in trend of investment of investors which consider the mutual fund is the key instrument of profitability. Mutual fund is pool saving a number of investors. The underpinning objective of investment in mutual funds is profitability numerous studies **documented the same evidence over the period of time. The fund investors have objective for** the Common investment by the Asset Management Company (AMC). Mutual fund creates profitability through dividend, capital gain and appreciation of share price. Mutual Fund avail liquidity and portfolio management enterprise, diversification of risk and stability of stock market and mobiles saving which attaching funds from the small investor. In history of mutual fund introduce the name of investment fund. King William I launched first mutual fund close and open end investment fund in Netherland 1822. On the point Dutch Mechant named Adrian Van Kasich whose created investment 1977 given the idea of King William. Kitwish probably theorized that diversification would increase the capital investment with small capital. The next ways of the mutual fund investment launched in Switzerland in 1849 by vehicle of Scotland in 1880.

Mutual fund introduced in Pakistan in 1962. Establishment of Investment Company of National Corporation of Pakistan (ICP) offered publically of national investment trust (NIT) in 1966. Mutual fund registered in Pakistan and in form of trust legally established under the trust, Act 1882. Security and exchange commission of Pakistan (SECP) regulate the mutual fund industry of each asset management company in strict compliance with the NBFC rules, 2003 and determine all AMC's to acquire an independent rating.



Mutual fund categorized in three types: close end mutual fund, open-end mutual fund, and exchange traded fund.

- Open-end mutual fund shares purchase and sale on demand on their net asset value, or NAV, which base on the value of the fund's securities.
- Close-end funds are traded between the investors on exchange which have a fixed numbers of shares. Like stock, according to supply and demand their share prices are determined and are traded at discount or premium to their net asset value'
- Exchange-traded funds are also traded on their market price value like stock on exchange which are more closely at their net present value than close-end mutual fund and usually stay on the premium and discount within 1% of NAV, with exception of some smaller ETFs that are frequently in trade.

Many tools and measures analyzed the measurement of the performance of the mutual fund. Capital Asset Pricing Model (CAPM) that explain the relationship between expected return of assets and systematic risk, other stocks. Finance for the risky securities of price used by CAPM, explained expected returns for assets given the risk of those assets and calculating cost of capital.

Harry Markowitz considered the father of Modern Portfolio Theory (MPT) in 1950's and published in Makowitz, 1952. The portfolio made about 60 years old. Most of mutual funds employees earn on the basis of MPT manage the funds. Firstly Markowitz show relationship between risk and return and tell us how to minimize the risk. William sharp, John Lintner and Jan Mossin developed the asset pricing model in mid-1960's. Therefore the model mentioned to as sharp-Lintner-Mossin Capital Asset Pricing Model (CAPM).

Formula for calculating the expected return of an asset its risk is as follows:

$$R_a = R_f + \beta(R_m - R_f)$$

$R_f$  = risk free rate

$\beta$  = beta of the security

$R_m$  = expected market risk

In 1990 American economist William p sharp, Harry Markowitz and Merton h. Miller won the noble prize "for their introducing the new idea and methods in the theory of financial economics". In the 1960's Sharp, taking off from Markowitz's portfolio theory, established the Capital Asset Pricing Model (CAPM) Sharp, 1964. This model is fit in every investor's portfolio on the basis of single mix of risky assets. Investor's wants more return and carry weighted portfolio with the risky asset. Portfolio risk measure cannot be modified without beta. Asset pricing under short sale examined to restrain and analysis about effect of cross sectional idiosyncratic risk Miller, 1977. To forecast the diversified portfolio risk that idiosyncratic risk should be priced when investor hold undiversified and diversified portfolio Merton, 1987. Idiosyncratic risk should be linked with cross section risk. Blume 1970, Friends and Blume 1970 and Black, Jensen and Scholes 1972 examine the portfolios estimated beta instead of individual securities. In portfolio expected return and market betas work combine or same way of CAPM. The critical errors in variables problem are reduced by cross sectional portfolio regression of average return on betas. It reduces statistical power and also reduces the range of betas. To alleviate the problem, researchers classify the securities on beta when float portfolio and 1<sup>st</sup> portfolio have lowest beta on the securities, as far as the last portfolios process the highest beta assets. In empirical test is classifying the procedure. Correlation of the residuals in cross section regression is caused on propose a method for addressing for inference the problem.

The time series intercepts monthly slopes and in addition to the standard errors of means. The slopes monthly to monthly variate in regression coefficients and determine the problem actually estimating correlations. The residual correlation effect the regression coefficient. These conversations also become standard in literature. The relationship between market beta and expected return implicit of a time series regression test by Sharp-Lintner in 1968.

### **EXPECTED VALUE OF AN ASSET'S EXCESS RETURN= $R_i^t - R^f$**

$R_i^t$  = asset's return

$R^f$  = risk free interest rate

It determine expected risk premium of CAPM which its beta time of expected value.

Risk premium =  $R^m - R^f$

$R^m$  = Market risk

$R^f$  = Risk free interest rate

Jenson Alpha suggested intercept term in the time-series regression.

### **(Time series regression) $R_{i,t} - R_{f,t} = \alpha_i + \beta_i m^*(R_{m,t} - R_{f,t}) + \epsilon_{i,t}$**

In Sharp-Lintner version of CAPM, have positive relation between beta and average return. In this model cross section model intercept the risk free rate and coefficient of beta is expected market return more than risk free rate.

Fama and Macbeth(1973) introduced further explain about cross section regression test, like Fama and French(1992).It confirmed in time series tests due to relationship between beta and average return. Fama French 2-factor and Fama French 3-factor expanded after Fama French single model of (Fama, 1993). Charhart extended to these factors with the help of CAPM and introduced Fama French 4-factor model in (1997). Beta, Size factor and value factor covered in the 3-factor model. Fama French 4-factor model used to measure mutual fund performance in Developed Countries.it is also known as MOM factor (monthly momentum). An active management and mutual fund evaluation model worked as a 4-factor model. Monthly momentum explained about the stock price tendency which continuously up and down.

In different financial market has been determined mutual funds by extensive research and in Pakistan limited work on mutual fund. The purpose of this study is to point out the significant variables influencing the fund performance provide the manager of open ended and close ended Pakistan's mutual funds and benefit for small investor (Rauf, 2009).

All used traditional methods to determine the performance of the mutual fund of Pakistan and also arise question about the credibility of modern methods of Mutual Fund performance in Pakistan. To evaluate, measure and test mutual fund performance are organized for filling the gap of this study through competing the models i.e. CAPM and Fama French 3-factor models to forecast and evaluate the performance of mutual fund and explain that which one is better performed for portfolio return. Research focused to achieve following objectives:

- To evaluate and measure the performance of the mutual fund through competing models like CAPM model and Fama French 3-factor model.
- To investigate and test viable of these models and explain which one model is better perform in mutual fund of Pakistan.

### **LITERATURE REVIEW**

Efficient Market portfolio, investors fascinated and discussed about the portfolio minimize the risk and maximize the assets return. Most of the mutual fund employees earn on the basis of

Modern Portfolio Theory managed the funds and also specified of efficient portfolio frontier (Makowitz, 1952). In 1960 sharp and Lintner 1965 modified the capital asset pricing model. Investors have desired to carry more return and weighted portfolio with risky asset. Portfolio risk measured and modified without beta and introduced the risk free asset in the Model (Sharp, 1964). In 1973 Fama and Macbeth explained the cross section of regression test model. In 1977 Miller examined the assets pricing model under the short sale restrain and analysis about effect of cross sectional idiosyncratic risk. (Stephen F. Witt, 1979) In 1987 Merton forecast the diversified portfolio risk that idiosyncratic risk priced when investor hold diversified portfolio and create positive relationship between cross section return and risk. Idiosyncratic risk linked with cross section risk. (French, Common Risk Factors in the Returns on Stock and bond, 1993) Fama French further explained to the factors which effected on risk beta and return. Fama French 2 factors and 3 factors evaluate the performance of mutual fund and took the results of value, size and market factors. 4 factors model established for evaluate the performance of stock and fund. Researcher used momentum which calculated weighted average of the low performance the firm from the equal performance high weighted average of firm (Carhart, 1997). In describe towards a strategic theory of risk premium moving beyond CAPM. In Pakistan used the old methods for evaluation of the mutual fund performance (S, 1990). In 2003 Eugene F. Fama and Kenneth R. French introduced the CAPM theory and evidence and create relationship between risk and expected returns. In The CAPM theory evaluated the risk and market return and its evidence (French, 2004). The performance evaluate of mutual fund of Pakistan. In this study calculate the sharp ratio analysis for measuring the risk and return. 26 close end mutual fund has been selected some are private and some are public sector. The open end Mutual funds and close end mutual funds total net assets value merge and then graphically show the model. 14 funds out of 33 funds reset and operationally used for research purpose (Hijazi, 2005). Sharp ratio, Treynor model, Jensen differential measure is used in this research. Capital Asset Pricing Model is also used in that study (Rauf, 2009). The performance analyzed the mutual fund. Its provide the open ended Pakistan's mutual fund and benefits to the small investor and sharp ratio measure the performance of the mutual fund with the help of time series and cross sectional data and focus on fund size expenses, age etc (Nawaz, 2010). In this research create the size and value of market return and also calculated the stock returns and check the momentum in risk and returns. The Capital Asset Pricing Model (CAPM) explained with drawdown measure the active portfolio management (French, Siza, Value, and Momentum in International Stock Returns, 2010), (Michael Zabarankin, 2014), (Marios, 2014)

Analyze of mutual fund performance using multiple measure for calculating the causality and normality in the data. Implement on the Fama French Factor Model for calculating the risk which correlated between market risks premiums (Asim Shah, 2014) (Babar Rafi, 2014). Fama French model used to check the momentum variation. Studied about applicability of Fama French, Three-Factor Model on the bases of KSE 100 index and explained cross-sectional return on equity market of Pakistan (Nahzat Abbas, 2015). In this research daily data collected of KSE100 index and merge and calculate returns then checked daily fluctuation in the market. SMB and HML calculate for Fama French 3 factor model and applied time series regression model for checking relationship between dependent and independent variable (Andleeb, 2014). Fama French and Capital Asset Pricing Models implement in stock market of Saudi Arabia through compared the real rate with the returns using CAPM and FF. Fama French 3 - factor investigated the size, book-to-market and market return to Saudi Arabia which approach use for measuring the dependent and independent variables and effects on risk factors affected on the return (Abdulaziz Aldaarmi, 2015).

Mutual Fund evaluated performance and validated the CAPM and Fama French 3 model. One

hundred open ended Pakistan mutual funds collected month wise data from 2009 to 2015 by both models (Baloch, 2015). Capital Asset Pricing Model showed significant and checked the relationship between 2 variables. SMB and HML evaluated the performance of actual risk premium with the help of size of market capitalization and market to book value size and arrange the portfolio returns (Bhatti, 2015). The Capital Asset Pricing Mode evaluated risk then calculated the Alfa with help of CAPM. This research focus on the returns through CAPM model compare with high and low returns after the comparison high returns does not show the variation in the market and need to other methods for calculating the and measures the variations in to the market. This research needs to best measurement tools for evaluation of Mutual Funds.

### HYPOTHESES

**H0:** Capital Asset Pricing Model (CAPM) and Fama French 3 factors do not equally forecast for evaluating the Mutual Fund performance of Pakistan.

**H1:** Capital Asset Pricing Model (CAPM) and Fama French 3 factors equally forecast for evaluating the Mutual Fund performance of Pakistan.

### RESEARCH METHODOLOGY

This is regression and correlation study for Mutual Fund. Mutual Fund portfolios adjusted with overall market premium. The total 157 open ended mutual funds are traded in the MUFAP and are also population of this study. Sample size 24 funds are randomly selected. These selected funds data collected in different ways which are as follows:

- Daily data of mutual fund have been calculated by MUFAP data for the period of 2010 to 2016.
- Daily T-bills rates have been calculated for the 2010 to 2016 and merged with the daily data of mutual fund.
- KSE100 index data also calculated stock price from 2010 to 2016 for SMB and HML factors.
- The daily data of funds merged with financial data of stock.
- Market capitalization created and calculated returns. Generated the size and rank of the firms with the selection of the groups big and small which are further new groups Low, Medium and High.
- Further generated six portfolios in each day and portfolio BH, BM, BL SH, SM, SL. B for big size and S for small size. H, M and L are for High, Medium and Low.\
- Generated SMB and HML factors  $SMB = (SH + SM + SL)/3 - (BH + BM + BL)/3$  and  $HML = (BL + SL)/2 - (BH + SH)/2$
- Applied time series regression model.

### RESEARCH MODEL

Capital Asset Pricing Model (CAPM) and Fama French-3 factor model explained bellow:

- *Capital Asset Pricing Model (CAPM):*

CAPM model is used for evaluating the mutual fund performance of Pakistan (Baloch A. R., 2015).

$$(R_i - R_f) = \alpha + \beta(R_m - R_f) + \varepsilon \dots\dots\dots$$

Where

R<sub>f</sub> represents risk free rate of the stock.

(R<sub>i</sub>-R<sub>f</sub>) represent given stocks risk premium.

Represents β (R<sub>m</sub> – R<sub>f</sub>) expected risk premium and intercept the α Alfa for CAPM.

### FAMA FRENCH-3 MODEL:

In the studies tested for the Mutual Fund performance evaluation by (Baloch A. R., 2015).

$$(R_i - R_f) = \alpha + \beta_1(R_m - R_f) + \beta_2(\text{SMB}) + \beta_3(\text{HML}) + \varepsilon \dots\dots\dots$$

$(R_i - R_f)$  represents stock risk premium.

$\beta(R_m - R_f)$  represent the expected risk premium

SMB denotes the daily premium of the factor size of the returns of the portfolio that contain small caps funds and HML denotes the daily market factors and contains large caps. SML and HML calculated for returns portfolio of market and stock and then intercepts with Alfa  $\alpha$ . SMB and HML calculated for FAMA French-3 factor Model,  $R_m$  and  $R_f$  is also used for Capital Asset Pricing Model (CAPM).

### DATA ANALYSIS

Capital Assets Pricing Model (CAPM) and Fama French model measures the mutual fund performance.

#### Table 1:

In this table the results are showing the CAPM. These results show that due to market factor significantly related with all portfolio returns. All portfolios of returns P1 to P24 have significant coefficient. The portfolio of higher return do not properly explain and predict bigger in values compare with the lower perform portfolios. The portfolios with the high return have significant intercept but compared with the high and low portfolios of return. The results show that CAPM perform poorly in explaining with the high and low returns. Fund with higher and lower returns are not predicted good by CAPM which mean that fund manager do not cope well capture the market variation.

#### Table 2:

FAMA French-3 Factor Model indicates the SMB and HML factors. It showing significant results of 24 portfolios of return which explained by Fama French 3- Factor model. The results are showing that significant results of market factor and intercepts the both SMB and HML factors mostly insignificant. Its mean that do not have sufficient explanatory power of size of factors and value of the factors. So the results explained that Fama French model do not properly prediction of the performance of mutual funds of Pakistan.

#### Table 3:

In table 3, selected the 24 funds of companies in which mean value is much closer to the zero. Beta shows that measurement of risk but some companies have negative beta but they have positive coefficient relationship between market return and companies return. CAPM perform well as compared to the Fama French model.

### FINDINGS AND CONCLUSIONS

Mutual fund plays important role for common investors in the world, mutual fund gives the more opportunities and benefits for the capital investment through skillful and professional management. In this research apply suitable models for measuring the performance of mutual fund in Pakistan. Daily data of open end ended mutual fund selected and randomly analyzed. Period of 2010 to 2016 analyzed the sample fund. To generate the results FAMA French-3 Factor Model and CAPM model applied. Firstly CAPM calculated by time series regression model and show the significance relationship between variables. It shows good perform in this Model. FAMA French – 3 Factor Model do not shows good results on both SMB and HML. Market factor presents the significance coefficients for the test. Capital Assets Pricing Model more acceptable for creating relation between market risk and return. FAMA French -3 factor

model results do not properly capture variation in to the market of Pakistan.

About this research supports properly for good investing strategy. In the research market variation concerned with the market factor effect on the Mutual Funds of Pakistan. Capital assets pricing model measures the Mutual fund of Pakistan and perform well in Pakistan. FAMA French – 3 Factor Model do not show good results for the funds and it also does not capture the market size and value of the all over the market premium. FAMA French 3 factor model evaluate the Mutual fund performance in the developed countries like U.S.A etc. these findings almost match with the previous research. Fund manager focus on the value and size factors which effect on mutual fund performance. Measurement tools and strategies for evaluating the performance of Mutual Fund conducted in the Pakistan in future. FAMA French 4 factor model and FAMA French 5 factor model will be conducted in Pakistan for the measurement of the close end mutual funds and open ends mutual funds.

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**Table 1: CAPM**

<b>Variables</b>	<b>portfolio1</b>	<b>portfolio2</b>	<b>portfolio3</b>	<b>portfolio4</b>	<b>portfolio5</b>	<b>portfolio6</b>
RM-RF	-0.07621	0.15939	0.02658	0.00219	-0.04813	0.05213
Constant	0.01316	-0.00279	0.05224	-0.44115	0.81014	0.10609

<b>Variables</b>	<b>portfolio7</b>	<b>portfolio8</b>	<b>portfolio9</b>	<b>portfolio10</b>	<b>portfolio11</b>	<b>portfolio12</b>
RM-RF	0.00331	0.00366	0.01389	-0.01165	-0.03433	0.01527
Constant	-0.59537	-0.65476	-0.27702	0.26317	0.07929	-0.03687

<b>Variables</b>	<b>portfolio13</b>	<b>portfolio14</b>	<b>portfolio15</b>	<b>portfolio16</b>	<b>portfolio17</b>	<b>portfolio18</b>
RM-RF	0.00180	0.00125	0.00158	0.00184	0.01045	0.08299
Constant	-0.32461	-0.23721	-0.29674	-0.34192	-0.02100	0.01767

<b>Variables</b>	<b>portfolio19</b>	<b>Portfolio20</b>	<b>Portfolio21</b>	<b>Portfolio22</b>	<b>Portfolio23</b>	<b>Portfolio24</b>
RM-RF	0.00070	0.00290	-0.01089	0.00234	-0.03545	0.12130
Constant	0.00410	-0.54600	0.0267	-0.43620	0.06335	-0.00237



**Table 2: FAMA French 3 factor model**

Variables	portfolio1	portfolio2	portfolio3	portfolio4	portfolio5	portfolio6
int	3.312E-05	-0.0002699	-0.000677	-6.41E-05	-0.0001383	-0.000192
RM-RF	-0.1775421	0.1200165	-0.000342	-0.0015787	0.06729009	0.3154901
SMB	0.1203294	-0.0979289	-0.001282	0.0009419	-0.0395283	-0.201195
HML	0.1503992	-0.4288858	1.181944	0.24307659	-0.658549	-0.27072
Constant	-0.6772758	0.0672122	-1.36875	-0.6891775	0.8921152	1.028551

Variables	portfolio7	portfolio8	portfolio9	portfolio10	portfolio11	portfolio12
Int	-7.718E-05	-7.42E-05	-0.000533	-5.775E-05	-2.93E-05	4.933E-05
RM-RF	-0.0011868	0.0011904	-0.001469	0.04274777	0.02370884	-0.0069016
SMB	0.0009664	-0.001048	0.0010418	-0.0250399	-0.0081353	0.0023461
HML	0.2636465	0.0165472	0.9985556	-0.3690119	-0.2136057	0.55317
Constant	-1.146071	0.4255717	-0.331023	0.11223566	-1.2908236	0.2197722

Variables	portfolio13	portfolio14	portfolio15	portfolio16	portfolio17	portfolio18
Int	-6.18E-05	-4.439E-05	-4.577E-05	-7.422E-05	-0.000283	-0.000218
RM-RF	-3.97E-05	-0.0007854	-0.0013335	0.0018847	-0.002564	0.0985935
SMB	3.218E-06	0.0005193	0.00079286	-0.0011092	0.001176	-0.07377
HML	0.1042868	0.14406548	0.19472662	-0.0438578	0.7079022	-0.769715
Constant	-0.295277	-0.4466802	-0.5557038	0.2084331	-1.407415	0.4157611

Variables	portfolio19	portfolio20	portfolio21	portfolio22	portfolio23	portfolio24
Int	-4.973E-05	-5.63E-05	2.248E-05	-7.161E-05	-2.838E-05	-0.0003051
RM-RF	-0.33364	-0.001318	0.0458489	0.0002389	-0.1150334	0.0523588
SMB	0.2184219	0.0006404	-0.0266729	-0.0002039	0.0777638	-0.0505325
HML	0.2927677	0.2114485	-0.3939274	0.1025473	0.9932337	-0.3883472
Constant	-1.104061	-0.353626	0.1108972	-0.1848115	-0.4268066	0.4063627

**Table 3:**

Companies funds	Beta	Correlation coefficient	Covariances	Variances
ABL INCOME FUND	0.031843	-0.042594013	-2.71482E-06	4.76779E-05
ABLSF	0.245021	0.032925456	1.56798E-08	0.000354597
AKDFOF	0.001142	0.006940652	5.44143E-08	1.29067E-06
A GHP IF	0.000014	-0.002442173	-5.06528E-09	1.21458E-08
Alfalah value fund	0.338643	0.014166862	4.36821E-07	0.000737482
UNIT TRUST OF PAKISTAN	0.564476	-0.001888056	-6.852E-09	0.001085642
NIT income fund	0.000755	-0.007334114	-5.56622E-07	7.81951E-06
NIT Govt bond fund	0.000020	0.000742052	2.11973E-08	7.52508E-07
NI(U)T fund	0.000985	-0.003162513	-7.70018E-09	7.59039E-07
NAFA INCOME OPPORTUNITY FUND	0.490761	-0.074603945	-3.69087E-07	3.25632E-05
NAFA INCOME FUND	0.184144	-0.02966752	-1.39691E-07	2.92426E-05
NAFA GOVT SECURITY LIQUID FUND	0.003662	-0.010393096	-1.19188E-07	4.04349E-06
MCB dfc INCOME FUND	0.000196	-0.010515383	-5.73901E-09	1.0198E-08
MCB CASH MANAGEMENT OPTIMISER	0.000478	0.013156302	1.92983E-09	5.32746E-09
LAKSON MONEY MARKET FUND	0.310000	0.337464366	3.15953E-09	8.60559E-09
LAKSON INCOME FUND	1.113514	0.375461419	5.92875E-09	4.68577E-08
LAKSON EQUITY FUND	1.312818	0.199576468	1.1291E-08	3.72367E-07
JS GROWTH FUND	0.302093	-0.005182677	-1.41471E-08	0.000159204
JS FUNDS OF FUND	0.552887	-0.004120441	-2.05757E-07	0.006704351
JS CASH FUND	0.000052	0.00385199	8.32192E-09	2.93514E-08
HBL INCOME FUND	0.000111	-0.002137744	-7.42751E-07	1.80271E-05
Faysal income and growth fund	0.233652	0.235771844	6.85402E-09	2.88259E-08
Atlas Income fund	0.005817	-0.005716022	-1.0481E-07	1.86722E-05
Askari equity fund	0.181332	0.003880585	5.22402E-09	6.29416E-05



## Competitive Frontiers: Women In Management And The Performance Of Microfinance Banks In South-East Nigeria

**Dr. Nonyelum Ugwu Joy**

Department of Business Administration/Entrepreneurship  
Federal University, Ndufu-Alike Ikwo, Ebonyi State

**Dr. Peter Ositadinma Ndubuisi**

Department Of Entrepreneurship Studies  
Chukwuemeka Odumegwu Ojukwu University, Igbariam, Anambra State

**Dr. Charles Ogbaekirigwe**

Department of Business Administration/Entrepreneurship  
Federal University, Ndufu-Alike Ikwo, Ebonyi State

### ABSTRACT

This study focused on Competitive Frontiers: Women in Management. The study took a descriptive survey approach and covered a sample size of 64 members of senior staff randomly selected from Ecobank and First Bank Nig. Plc within the South-Eastern part of Nigeria. A five point likert scale questionnaire was used to collect data and the data collected was analyzed using inferential statistics. The hypotheses were tested using Mann-Whitney Test (U) using the 20.0 version of statistical package for social sciences (SPSS). From the result of the SPSS output for hypotheses 1 and 2, their respective p-values were lesser than the level of significance (i.e 0.000 and  $0.04 < 0.05$  respectively), this led to the rejection of the two null hypotheses tested in this work. The study therefore recommends that banks should deploy more women in the management of their marketing activities in order to enhance their marketing performance which has a direct link to their competitiveness

**Keywords:** Competitive, Management, Marketing frontier, Operational efficiency

### INTRODUCTION

The strive by organizations for a better market placement has opened vistas or fronts for competition. This is fuelled by innovation in information and communication technology and globalization that are increasingly reducing market distance, crumbling trade barriers across the globe and availing market participants with abundant market information at a reduced cost and at an unimaginable speed. These circumstances has made it possible for increased competition among firms and industries while dragging innovation to open-up new battle fronts of competition. On the other hand, in the administration, leadership and management of organizations, there is a global call for gender inclusiveness i.e ensuring that women are by policy made to participate in the top management of organizations. While this is seen as laudable, the competitive implication of this is seldom discussed, hence; the aptness of this study. Competitive frontiers have occupied the subject of strategic management in most recent times and are of critical importance of considerations relating to the first, being the central hub for measuring the success and the failure of organizations in its decisions and strategic plans. Secondly, the study of performance is facing many challenges, particularly strategic issues. The nature of the different objectives of the parties associated with them requires determining the appropriate metrics that can be used in measuring performance and source-based information in the measurement. How to integrate different measurements to provide a realistic picture of

the organization's competitive performance represents a strategic perspective or the perspective of the market. The most important measures adopted in competitive performance were done by Nayef (2007). They include;

1. Market gauges and indicators related to growth in shares refer to the company's ability to enter new market segments through growth in sales or increase the number of machines.
2. Value-added measures: This is one of the favorite indicators in measuring the returns achieved by the company. The intervention exists in the context of value-added indicators of innovation, learning and the developing new services, and technical leadership and rates of improvement and innovation.
3. Satisfaction measures: There are two. The first is goods about the case of certain purchase and evaluates their results. The second is the accumulated goods which is based on the total purchases and transactions for clients with the organization. However, this refers to the customer's dealings with the company in the past, present, and future.
4. Location competitive standards: Competitive location for industry refers to its ability to achieve sustainable competitive advantages over its competitors in the market, whatever the source of these competitive advantages is. It does not matter if it is in the ability to adapt and survive or in the rapid growth of the industry environment.

### **Statement of Problems**

The Nigerian woman works in an environment where there is gender stereotype against them arising from the society's socio-cultural beliefs that tends to confine her role in the society to domestic chores and child bearing. However, over the years, the Nigerian women have aligned with the global trend of gender equity and women emancipation and are therefore advancing their careers in management position of organizations. While this has become empirical, it does appear that organizations tend to exploit their gender weaknesses to advance their course in the competitive world of business. This study is therefore faced with the problem of examining how women in management influences the competitive frontier of organizations

### **Objectives of Study**

The main objective of this study is to examine competitive frontier: women in management. Its specific objectives include;

- i. To examine the influence of women in management on the marketing frontier of banks
- ii. To examine the influence of women in management on the operational efficiency frontier of banks

### **Research Questions**

The following research questions were asked in this study;

- i. Do Women in management influence the marketing frontier of banks significantly?
- ii. To what extent do women in management influence the operational efficiency frontier of banks?

### **Hypotheses**

This study is guided by these hypothetical assertions

**H<sub>01</sub>:** Women in management does not influence the marketing frontier of banks

**H<sub>02</sub>:** Women in management does not influence the operational efficiency of banks

## **Conceptual Framework**

### ***Women in Management***

The issues of women and their career have been explored for more than 30 years. Many researchers have begun to develop explanatory theories and concepts to these issues. This study observed that there are three dominant dimensions to the study of women in management as espoused by Evetts (2000), these dimensions include; Cultural dimensions: family and feminine ideologies and cultures, Structural dimensions: family structures and processes and Action dimensions: women's choices and strategies. However, only one dimension which is of most relevance to this study shall be examined

### ***Action Dimensions: Women's Choices and Strategies***

The cultural and structural dimension of explanations focuses primarily on the determinants of careers or at least the constrictions in the careers of women (Hakim, 2006). In general, in the action dimension of explanations, careers are not determined in any casual way by structural and cultural factors. Structural processes and cultural expectation constrain choice but nevertheless women do choose to an extent between opportunities available to them. Careers frequently result from earlier decisions, which narrow the range of opportunities. Careers also result from coincidence, accident and encounters as well as from career planning, structural and organizational changes and changes in cultural conditions (Hakim, 2006).

The 1980s saw the re-emergence of an action or agency frame of reference, however, in the context of cultural and structural constraints, women were perceived as actively building their lives and careers out of the conditions created and maintained by larger structural and cultural forces. Thus, careers are not perceived as determined by cultural and structural forces. Such forces are mediated in their impact by processes of social interaction: cultures and structures are experienced; individuals respond and react in diverse ways; and people construct their own meanings, make choices and develop strategies. In the study of the action dimensions of women's careers, the difficulties of organizational and professional promotion structures and the cultural belief system of family and femininity still have to be managed by women (Wood, 2008).

Women manage such constraints in different ways, which include adaptation, manipulation, negotiation, resistance and confrontation. Tactics for coping with constraints vary between one woman and another and any one woman will vary over time and in different contexts (Hopkins and Bilimoria, 2008). No particular strategy is more important than others especially in male-dominated careers, sometimes have received a disproportionate amount of media attention and acclaim. Such women have also received a disproportionate amount of criticism. Most of the time, the criticism comes from feminist researchers who have interpreted successful women's promotion achievements as a sell-out to or an adaptation of male career patterns and values by means of the exploitation of other women's labour (e.g., cleaners and nannies) (Wood, 2008). The action dimension emphasizes the rational choice element of all career decisions in the face of complex career constraints and variable career resources.

To analyze career experiences, the action dimension of careers (of women's careers and career strategies) is considered alongside the cultural and structural determinants of careers in particular organizational contexts. The demonstration of wide variety and diversity, as well as complexity, in the choices that are made and the strategies developed is discussed. Some women are developing direct careers in the industrial or commercial organizations or in schools in the education system. Some are achieving high promotions by remaining (or having to remain) single and/or childfree. Others are developing highly complex caring arrangements and coping strategies at least for a period. Other women are choosing not to focus on

promotion but instead to balance paid work and family responsibilities either for a short period or as a longer-term career strategy (Hakim, 2006).

Some women choose particular sectors or their organizations and professions perhaps avoiding managerial positions, again for shorter or longer periods, in order to enable them to fulfill other responsibilities (Jogulu and Wood, 2006). Other women choose career patterns with part-time and practitioner careers, again for short or longer periods. Several women, particularly in teaching, take career breaks beyond statutory maternity leave, though younger women and women in engineering, science and banking are perhaps less inclined to do this. Most of these women know that particular career choices assist while others are likely to handicap promotion progress, but they opt for such choices as seeming to meet immediate needs, aims and goals. The consequences for the careers of the engineers and scientists of choosing the professional specialist rather than the managerial route are well recognized. Obviously some of the women would change their minds over the course of their careers and perhaps become unhappy with a particular course of action felt to be the best way at the time of decision. This is what makes careers dynamic a process rather than a once-and-for-all decision. Also, some women have fewer choices to make in their particular organizational contexts or fewer resources in their personal lives. Particular career choices limit future career options and opportunities and careers often result from earlier decisions, which close some doors and narrow the range of future possibilities (O'Neil et al., 2008). It is also important to emphasize that career choice and strategies are essentially personal and individual. Collective action does not form a part of the career decision making process (O'Neil et al., 2008). Women should therefore develop individual and personal solutions to the cultural and structural constraints in their careers; either by prioritizing promotion or by negotiating various balances in their careers. These women are active in constructing resolutions and devising personal strategies. They choose between the examples set by other women in their organizations but they do not expect company or educational policies, trade union procedures or feminists principles to help sort their arrangements. Their personal situations and career ambitions and intentions are perceived as too variable and diverse to be adequately met by corporate systems or collective action.

### **Types of Women in Management**

**Work-Centred Women:** this group of women is in a minority, despite the massive influx of women into higher education and into professional and managerial occupations in the last three decades. Work-centred people (men and women) are focused on competitive activities in the public sphere, in careers, sport, policies or the arts. Family life is fitted around their work; many of these women remain childless, even when married. Qualifications and training are obtained as a career investment rather than as an insurance policy, as in the adaptive group. The majority of men are work-centred, compared to only a minority of women, even women in professional occupations. Preference theory predicts that men will still retain their dominance in the labour market, policies and other competitive activities, because only a minority of women is prepared to prioritise their jobs (or other activities in the public sphere) in the same way as men. In the long run, it is work-centred people who are most likely to survive and become high achievers, in greedy occupations.

**Adaptive Women:** This group of women prefers to combine employment and family work without giving a fixed priority to either. They want to enjoy the best of both worlds. Adaptive women are generally the largest group among women and are in substantial numbers in most occupations. Certain occupations, such as school teaching, are attractive to women because they facilitate a more even work-family balance. The great majority of women who transfer to

part-time work after they have children are adaptive women, who seek to devote as much time and effort to their family work as to their paid jobs. For example, seasonal jobs, temporary work or school-term-time jobs all offer a better work-family balance than the typical full-time job, especially if commuting is involved. When flexible jobs are not available, adaptive women may take ordinary full-time jobs or else withdraw from paid employment temporarily. Adaptive people are the group interested in schemes offering work-life balance and family-friendly employment benefits and will gravitate towards careers, occupations and employers offering these advantages.

**Home-Centred or Family-Centred Women:** This group of women are a minority and relatively invisible in the Western as well as in Asian world, including Thailand, given the current political and media focus on working women and high achievers. Home-centred women prefer to give priority to private life and family life after they marry. They are most inclined to have larger families and these women avoid paid work after marriage unless the family is experiencing financial problems. They do not necessarily invest less in qualifications, because the educational system functions as a marriage market as well as a training institution. Despite the elimination of the sex differential in educational attainment, home-centred women are now marrying a man with substantially better qualifications and the likelihood of marrying a graduate spouse is hugely increased if the woman herself has obtained a degree (Hakim, 2000; Blossfeld and Timm, 2003). This may be why women remain less likely to take courses in the arts, humanities or languages, which provide cultural capital but have lower earnings potential. This group of workers is most likely to drop out of greedy careers relatively early in adult life.

In general, it is necessary to differentiate between a person's core values and life goals and the multitude of topics on which public opinion data collected. There is an important theoretical and methodological distinction between personal goals and preferences, which are causal in relation to individual behaviour and general social attitudes and societal norms, which are usually non-causal. There is a distinction between choice and approval, between personal goals and public beliefs, between what is desired by the survey respondent for their own life and what is considered desirable in society in general. The two are not coterminous and there is only a weak link between society norms and personal preferences and goals (Hakim, 2004).

Preference theory also provides a different explanation for the continuing pay gap and occupational segregation. Moreover, it predicts that they will persist in the 21<sup>st</sup> century and that men will continue to outnumber women in the top jobs, simply because they try much harder to get them. The majority of working women seek a larger degree of work-life balance more than men do. Women are more likely to ask for shorter work hours than to ask for higher pay or promotion (Babcock and Laschever, 2003).

### **Barriers to Women's Progression in Management**

The core obstacles to the emergence of women in managerial positions include gender role stereotyping and discrimination.

**Gender role stereotypes:** Gender stereotypes have been defined as categorical beliefs regarding the traits and behavioural characteristics ascribed to individuals based on their gender (Ginige, 2007), or a set of attributes ascribed to a group and believed to characterize its individual members simply because they belong to that group. Prime, Jonsen, Carter, and Maznevski (2008), believe that the influence of these stereotypes can be represented on two important patterns. First, the qualities that people associate with women are totally different from those which people associate with leaders. Second, the qualities which people associate with men are similar to those which they associate with leaders. Men tend to be seen as

naturally equipped to lead, because of this match between stereotypically masculine attributes and idealized leadership. This tendency has been called think-manager-think-male.

**Gender discrimination:** Discrimination happens by treating women differently from men and it occurs when people perceive female managers as different from males. This treatment is seen as both logical and rational by people who hold negative stereotypes about women managers. Subtle discrimination may take many shapes; for example, based on the assumption that women prefer family commitments, managers may decide to hand over an important task to a man rather than to a woman. Beliefs about degree of fit are another form of subtle discrimination. Perceptions that women will somehow change the management process by virtue of their gender lead women to be excluded from senior management positions (Owen & Todor, 1993).

### **Theoretical Framework**

This paper adopted a broad theoretical perspective to examine the factors that facilitate or block women's advancement in positions. It is suggested that women's career progression in management is affected by individual, organizational and societal factors (Yukongdi and Rowley, 2009). All of these variables simultaneously interact with one another.

**Gender Equity Theory:** Gender equity and economic structures are closely linked. Gender equity has been promoted by international development organizations (e.g., the World Bank) as a result of economic development and positive associations between low fertility and good health in women and children. Reduced income equality is attributable to: increased wage disparities between high- and low-skilled workers; 'structural adjustment' (i.e. decentralization of publicly funded social services); tax policies favoring the wealthy; and the decline of labour nations (Moss 2002). This indicates that job characteristics (e.g., job strain caused by low control and high demands), limited psychological and social resources, perceived hostility and discrimination, and lifestyle 'incompatibility' determine quality of health more than maintaining employment and financial rewards.

### **METHODOLOGY**

This study took a descriptive survey approach and covered a sample size 64 members of senior staff randomly selected from Ecobank and First Bank Nig. Plc within the South-East Nigeria, using the balloting technique. Questionnaires from which data for this study was generated was administered physically (face-to-face) on the respondents and the same approach was used in the retrieval of the questionnaires, the data collected was then analyzed using inferential statistics. The hypotheses were tested using Mann-Whitney Test (U) using the 20.0 version of statistical package for social sciences (SPSS). The Mann-Whitney test is expressed mathematically as;

$$U_1 = R_1 - \frac{n_1(n_1 + 1)}{2}$$

Where  $R_1$  = Rank of the sample size,  $n_1$  = sample size and U = Mann-Whitney test Statistic



## RESULTS AND DISCUSSIONS

### Test of Hypotheses

#### SPSS Output for Hypothesis One

Table 1. Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
RESPONSE	20	21.8000	10.91884	3.00	40.00
RANKS	20	3.0000	1.45095	1.00	5.00

### Mann-Whitney Test

Table 2. Ranks

	RANKS	N	Mean Rank	Sum of Ranks
RESPONSE	1.00	4	2.50	10.00
	2.00	4	6.50	26.00
	Total	8		

Table 3. Test Statistics<sup>a</sup>

	RESPONSE
Mann-Whitney U	.000
Wilcoxon W	10.000
Z	-2.309
Asymp. Sig. (2-tailed)	.021
Exact Sig. [2*(1-tailed Sig.)]	.012 <sup>b</sup>

a. Grouping Variable:

b. Not corrected for ties.

**Discussion:** From the test statistic table above, the value for Mann-Whitney (U) is 0.000 which is less than the 0.05 level of significance; hence, the null hypothesis is rejected. This simply implies that women in management has significant influence on the marketing frontier of banks

### SPSS Output for Hypothesis Two

#### Descriptive Analysis for Research Question II

Table 4. Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
RESPONSE	20	21.8000	6.94793	10.00	33.00
RANKS	20	3.0000	1.45095	1.00	5.00

**Table 5. Ranks**

	RANKS	N	Mean Rank	Sum of Ranks
RESPONSE	1.00	4	2.50	10.00
	2.00	4	6.50	26.00
	Total	8		

**Table 6. Test Statistics<sup>a</sup>**

	RESPONSE
Mann-Whitney U	.04
Wilcoxon W	10.000
Z	-2.337
Asymp. Sig. (2-tailed)	.019
Exact Sig. [2*(1-tailed Sig.)]	.029 <sup>b</sup>

- a. Grouping Variable:  
b. Not corrected for ties.

**Discussion:** From the test statistic table above, the value for Mann-Whitney (U) is 0.04 which is less than the 0.05 level of significance; hence, the null hypothesis is hereby rejected. This simply suggests that women in management have influence on the operational efficiency of banks.

### FINDING

This paper discovered that the influence of women in management on competitive frontier is dominant in the marketing dimension when compared with the operational efficiency dimension, hence the result (0.000 and 0.04 respectively).

### CONCLUSION AND RECOMMENDATIONS

It was concluded that women in management have significant influence on the competitive frontiers of the banks under study. The study therefore recommended that banks should deploy more women in the management of their marketing activities in order to enhance their marketing performance which has a direct link to their competitiveness.

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## Emotional Intelligence And Leadership Competencies: A Study Of Ministry Of Works, Owerri

**Prof. Gideon A. Emerole**

Department of Business Administration  
Michael Okpara University of Agriculture, Umudike

**Nwaji Charles**

Department of Industrial Relations and Personnel Management  
Michael Okpara University of Agriculture, Umudike

**John Okpoyo Etifit**

Department of Business Management  
Imo State University, Owerri, Imo State

### ABSTRACT

The study examined Emotional Intelligence and Leadership Competencies: A Study of Ministry of Works, Owerri. In conducting the study, descriptive survey approach was adopted and data was generated from a five point likert scale questionnaire. The study covered a population of one hundred and twenty three (123) senior and junior members of staff of the ministry. Taro Yamene formula was used to select a sample of 94 respondents. Out of the 94 questionnaires distributed, 88 were correctly filled and returned; thereby given a questionnaire return rate of 93.62%. The data gathered was analyzed with the kruskawalis (H) test. The study found that Leadership competence is an integral component of organizational performance, hence, it was concluded that the emotional state of the leader has significant effect on his/her competence. The study therefore recommends that Leaders should demonstrate emotional self-control, transparency, adaptability, initiative and be optimistic. These are the inevitable high personal standards that drives them to constantly seek performance improvements, hence; enhancing their goal achievement orientation and that to develop quality social awareness, leaders should strive to exhibit conflict management skills, be inspirational, drive changes in their environment and develop others. These helps to generate an atmosphere of friendly collegiality and make them models of respect, helpfulness, and co-operation, thereby drawing others into active, enthusiastic commitment to the collective effort, and build spirit and identity.

**KEYWORDS:** Emotional intelligence, Leadership competencies, Self Awareness

### INTRODUCTION

The past few decades have witnessed extraordinary transformations in the nature of work and organization. Globalization and heightened international competition have spurred a marked increase in mergers and acquisitions, as organizations position themselves to perform in the 21st Century world economy. The modern workplace has experienced a sustained period of delayering management structures, downsizing, and “offshoring,” as organizations strive to contain costs and achieve more with fewer resources (Cartwright & Holmes, 2006). Additionally, organizations have enlisted the massive advances in communications and information technology that have emerged during the last twenty years to streamline planning and decision-making processes, eliminate redundancy of effort, and enhance productivity. Such technologies have enabled collaboration in ways never before seen, which has led to an increase in the ability of organizations to compete globally via virtual teaming, but also to a decline in face-to-face or “real-time” interaction between employees. These advances have

triggered subsequent rounds of outsourcing, as well, which began with manufacturing operations, but now increasingly include the once considered “safe” jobs of white collar, professional knowledge work (Burke and Ng, 2006).

To complicate matters further, major demographic and social shifts associated with the global workforce, the rise in dual income couples, the aging of the Baby Boomers and the convergence of four generations in today’s workplace have introduced additional complexities and challenges into how organizations manage their people. While organizations have benefited from this period of change by way of increased productivity and profitability, there have also been negative impacts on the psyche of the workforce. Job loss, questions about job security, increased anxiety and continued exposure to ambiguity are only some of the many effects that comprise the shadow of this era. These dynamics, complexities and diversities that are now the characteristic of operational environment, are diffusing into the organization thereby making increasing demands on management and leadership competencies at all organizational levels. Mayer, Salovey, and Caruso, (2002), defined emotional intelligence as “the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them, and to use this information to guide one’s thinking and actions.” In short, it is theorized that individuals have varying abilities to recognize, process, and extrapolate emotional information, thus leading to variations in how different individuals react to the same type of emotional stimuli. Emotional intelligence (EI) has emerged as a construct that is of interest to both academics and practitioners and has become one of the most topical areas in psychological research. Afolabi (2004) contend that emotional intelligence is not a single trait or ability rather, a composite of distinct emotion reasoning abilities. Perceiving emotions consist of recognising and interpreting the meaning of various emotional states, as well as their relations to other sensory experiences. Understanding emotions involve comprehension of how basic emotions are blended to form complex emotions. Regulating emotions encompasses the control of emotions in oneself and in others. An individual’s emotional intelligence is an indicator of how he or she perceives, understands and regulates emotions.

The development of leadership competencies should be based on the global business strategy which determines what kind of presence is desirable, how many and what types of jobs, projects, task forces, and other types of interactions exist (McCall & Hollenbeck, 2012). Competency development process should start from an analysis of the dynamics of the environment and the core competencies, continuing to identifying the profiles of resources and ending with identification of necessary competencies for specific jobs/functions. Leadership competencies are observed when a person demonstrates the competencies that constitute self-awareness, self-management, social awareness and social skills at appropriate times and ways in sufficient frequency to be effective in the situation. Most frequently in existing competency frameworks which indicates that emotional intelligence represents a major component of global leadership competency. Much in line with these are personal attributes which underpin, and determine how and when, knowledge and skills will be used (Cannavaciulo *et al.*, 2003). Understanding various attributes of leadership competencies and their interaction is essential for organizational leader’s performance and in order for these organizations to work effectively in today’s global business environment. Although the need to develop leaders with adequate competencies has become obvious in recent years (Morrison, 2013), there is still a significant gap between the international human resource requirements of a competent leaders and their organization’s objectives realization

### **STATEMENT OF THE PROBLEM**

Employers and employees interact in a multicultural environment, this differences suggest that organizational leaders must possess emotional competences, which influence and ease

relationships between people, allow a better social cohesion, an emotional self-control and an “alphabetisation” of emotional states. In the absence of this, organizational leaders may wallow in self-praise due to poor self management and this impede on their self and social awareness. When considered holistically, these can result in a drastic redefining of the fundamental relationship between employer and employee, characterized as the “psychological contract.

### **OBJECTIVES OF THE STUDY**

The central objective of this paper is to examine the effects emotional intelligence has on leadership competence. Its specific objectives include;

- i. Examine the effects self management has on self awareness leadership competence
- ii. Examine the effects relationship management has on social awareness leadership competencies

### **RESEARCH QUESTIONS**

- i. What is the effect of self management on self awareness leadership competence?
- ii. What is the effect relationship management on social awareness leadership competencies?

### **HYPOTHESES**

**H<sub>01</sub>:** Self management does not have significant effect on self awareness leadership competence

**H<sub>02</sub>:** Relationship management does not have significant effect on social awareness leadership competencies

### **REVIEW OF LITERATURES**

#### **Conceptual framework**

#### **Emotional Intelligence**

Emotions are implicated in many aspects of everyday life. Their impact and relevance, in combination with the subjective nature of emotional experience, suggest it is important to work towards a comprehensive scientific model of emotion-related self-perceptions, as envisaged in the trait emotional self-efficacy conceptualization (Petrides, Pita, & Kokkinaki, 2007). Emotional intelligence basically illustrates and describes the capacity to join emotions with reasoning to arrive at a decision. Cognitive ability or competence, measured as intelligence quotient (IQ), often does not explain the difference between average and superior work performance, including that of a leader, and this hence indicates that there is another dimension that contributes towards effective leadership (Cameron, 2008). Reuven Bar-On (2010) argues that emotional intelligence forms an essential part of positive psychology, and has a positive impact on performance, happiness, well-being, and the quest for a more meaningful life, all of which are key areas of happiness in positive psychology. Cameron elaborates further by stating that in line with positive psychology, positive and emotional intelligent leadership strategies can help with creating a positive organizational outcome. Ashkanasy and Daus (2005) provide a four point summary of emotional intelligence:

- It is not the same, but positively associated to other intelligences
- It differs from person to person
- It progresses and develops over a person’s life and may be improved by means of training and development initiatives
- It involves the ability to recognize and observe emotions in oneself or others, as well as the competence and skill to comprehend and handle these sentiments effectively

There are different approaches to emotional intelligence, namely an ability-based approach (Caruso, 2003) as well as a trait-based approach (Petrides, 2009). The following short explication describes and distinguishes between the three types of emotional intelligence as well as mentioning one measurement tool each used to evaluate this type of emotional intelligence. As trait emotional intelligence is the model used in the research study at hand, the literature review then focuses in more detail on trait emotional intelligence and the measurement tool used in this regard.

### **Models of Emotional Intelligence**

**Ability emotional intelligence:** this refers to emotion related cognitive ability, which is measured by means of performance tests (Petrides, Pita, & Kokkinaki, 2007). Ability emotional intelligence, called “cognitive-emotional ability” by Petrides and Furnham (2001) refers to concrete capabilities connected to emotions. To measure this construct, Mayer and Salovey, developed an emotional intelligence ability model assessing emotional intelligence as a kind of cognitive intelligence. The instrument is known as the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) (Mayer & Salovey, 1997). It is based on a number of emotion-based problem-solving items (Conte, 2005) and measures constructs such as perceiving emotions, using emotions, understanding emotions and managing emotions. The model of ability-based emotional intelligence has been criticized for missing predictive validity and for being scientifically unsupported.

**The mixed model of emotional intelligence,** introduced by Goleman (1998), refers to emotional intelligence as learned abilities, and allures to the belief that individuals are born with a certain level of emotional intelligence that can be further enhanced through training. It focuses on a wide range of competencies and skills, which are grouped under the following four main constructs: self-awareness, self-management, social awareness and relationship management. The ECI, Emotional Competency Inventory, was developed by Boyatzis and Goleman in 1999 to measure emotional competencies and positive social behaviours. To date, no peer reviewed empirical studies have been forthcoming (Conte, 2005), and therefore this tool is not given any serious consideration.

**Trait emotional intelligence** focuses on the emotion related character and self-perceptions of individuals and is measured by a self-report. It consists of individuals’ own perceptions of their abilities and is located in the lower order of personality, and hence trait emotional intelligence is not an ability-based model. According to Petrides, trait emotional intelligence is the only effective definition of emotional intelligence that acknowledges the intrinsic bias and subjectiveness of emotional experience. Trait EI theory enjoys widespread empirical support and consistently replicated findings from numerous studies that are theoretically driven, methodologically sophisticated, and independently conducted. According to Petrides and Furnham (2001) trait EI entails reaction-related behavioural inclinations and self-perceived capabilities referring to typical performance most effectively considered through own account. Petrides and Furnham identify this as “emotional self-efficacy”. According to this view, the self-rating agrees with the subjective character of emotions.

### **Leadership Competencies**

Leadership is a subject with very many facets and aspects. At the very essence, leadership is about understanding and managing human behaviour. Hitt (1993), states that leadership is generally defined as the art or process of influencing people so that they will strive willingly towards the achievement of group goals. Groenewald (2008) concurs by stating it is the art of moving people and situations profitably. Accordingly, excellent leadership is about movement, where all stakeholders move towards defined outcomes. Ilbury (2004) describes leadership as

follows: A leader is someone who emerges, especially in times of uncertainty, because they offer ways forward that others haven't yet identified and will therefore enthusiastically follow.....A great leader shows opportunity where others only see confusion and uncertainty. It follows that leadership is a highly complex process, calling for a set of finely developed skills, as leadership mistakes and poor leadership are costly, both in terms of human and organizational costs. Meyer (2004) considers various aspects concerning leadership, which includes the need to understand leadership within a context (e.g. spiritual, emotional, organizational and cultural) as well as a specific point in time. A host of issues are considered such as enabling ordinary people to do extraordinary things and setting them up for success, the ability to manage through exceptionally difficult times and crises, getting people involved in a goal with a specific purpose, helping people to understand the history (where they come from), current situation and the outlook and prospects (where they are going to), as well as understanding the role and influence of follower

### **Dimensions of Leadership Competence**

**Self Awareness Leadership Competencies:** Different self-awareness leadership competencies have variable outcomes under different circumstances. Self-awareness leadership competencies should be adapted to the particular demands of the situation, the particular requirements of the people involved and the particular challenges facing the organization. The major self-awareness leadership competencies include: Leadership competencies, transactional Leadership competencies, democratic leadership competencies, autocratic leadership competencies (Thisera, 2013). Autocratic or task-oriented Leadership competencies is multifaceted and encompasses a diverse range of behaviors including assigning followers to particular jobs, emphasizing deadlines, checking that followers observe rules and regulations, setting deadlines, and pressuring followers to work hard. Transactional leader influenced employees through the exchange of a good or service that serve as reward and promotions for good work or punishment and undesired action for underperformers. In democratic or employee oriented leadership competencies, leaders hold a good personal relationship with subordinates. A democratic leader takes an interest in the subordinates and likes to ensure that they achieve their goal (Thisera, 2013). On the other hand, leadership competencies influence people by promoting higher levels of intrinsic value associated with goal accomplishment, emphasizing the linkages between employees' effort and goal achievement, and creating a higher level of personal commitment on the part of the leader and followers to common vision, mission, and organization goals. Transformational leaders stimulate followers to perform beyond the level of expectations. The style is composed of four dimensions of ideals influence, inspirational motivation, intellectual stimulation and individualized consideration (Eisenbach, Watson & Pillai, 2009).

**Social Awareness Leadership Competencies:** A social awareness leadership competency has two elements. First, ethical leaders must act and make decisions ethically. Secondly, ethical leaders must also lead ethically – in the ways they treat people in everyday interaction, in their attitudes, in the ways they encourage, and in the directions in which they steer their organizations or institutions or initiatives (Wang, Tsui & Xin, 2011). An ethical Leadership competency is both visible and invisible. The visible part is in the way the leader works with and treats others, in his behavior in public, in his statements and his actions. The invisible aspects of Social awareness leadership competencies lie in the leader's character, in his decision-making process, in his mindset, in the set of values and principles on which he draws, and in his courage to make ethical decisions in tough situations. Social awareness leadership competencies demand ethical behavior all the time, not just when someone's looking; and they're ethical over time, proving again and again that ethics are an integral part of the



intellectual and philosophical framework they use to understand and relate to the world. The major distinguishing feature of Social awareness leadership competencies is its stress on characterized moral perception, moral judgment, moral management, and moral impression. Social awareness leadership competencies is mostly related with self-actualization, moral relationship, moral perception, and unbiased dealing (Parboteeah, Chen, Lin, Chen & Chung, 2010).

### **Emotions and leadership: The Role of Emotional Intelligence (EI)**

Emotional competence is particularly central to leadership, a role whose essence is getting others to do their jobs more effectively. Inter-personal ineptitude in leaders lowers everybody's performance: it wastes time, creates acrimony, corrodes motivation and commitment, and builds hostility and apathy. A leader's strengths or weaknesses in emotional competence can be measured in the gain or loss to the organization of the fullest talents of those they manage. (Goleman, 1998). There is growing evidence that a record number of executives are derailing from their careers (Rosete, 2007). Literature hints that emotional intelligence may offer some insights into success and failure of leaders. This is highlighted by the fact that there is an increasing interest in research to explore whether emotional intelligence makes someone a better leader.

Literature suggests that feelings and emotions play an important role in human behaviour. They influence judgments, memory and reasoning, among others. Increasingly, it is accepted that feelings also take on a more central role in the leadership process than what was previously considered. Goleman (1998) highlights that studies have shown effective leaders to use more emotional intelligence competencies than other people in leadership positions. Ogunyemi (2007) concurs and adds that especially those leaders whose job demands a high social interaction, need effective emotional intelligence. Literature by Goleman et al., (2002) advocates that up to 79% of leadership success in the USA is a direct consequence of a high emotional intelligence. It appears that leaders' level of emotional intelligence has an effect on their behaviour, which makes them either more or less successful leader. Stein and Book (2000), in research covering thousands of participants in more than 30 professions, found that 47-56% of success in a person's working- and private life can be accounted to the level of emotional intelligence of that person. They furthermore found that certain emotional competencies had a higher relevance than others in the occupational context, and that different jobs required different emotional intelligence competencies. The research revealed further, that emotional competencies are required for leadership positions differ across various professions. According to Goleman et al. (2002), emotional intelligence is an important part of being an effective leader, especially in the team context, diffusion of conflict constructively which promotes trust and co-operation among team members in this regard. A leader is someone with the power to project either shadow or light onto some part of the world and onto the lives of the people who dwell there. A leader shapes the ethos in which others must live, an ethos as light-filled as heaven or as shadowy as hell. A good leader is intensely aware of the interplay of inner shadow and light, lest the act of leadership do more harm than good.

If leaders are able to control their own emotions and practise self-control, they act as role models to their teams (Barling et al., 2000a), and hence have a positive impact on the team. The shadow side being the potential abuse of power, needs to be handled with utmost care by the leader and managed in such a way that at best it is avoided (Bower, 2010). Relationship approaches to leadership are inherently emotional and the quality of this relationship is enhanced if leaders have good emotional intelligence (Antonakis, Ashkanasy & Dasborough, 2009). While a rational decision maker can do so without much consideration for emotions or feelings, research suggests that emotions are required to make sound decisions. They assist to

weigh up choices and arrive at decisions. Feelings are intimately connected to the human experience. Feelings are intricately bound up in the ways people think, behave and make decisions. Leaders are humans who potentially experience the full range of emotions. Both, positive and negative moods and emotions serve numerous functions in people's lives. Likewise, both positive and negative moods and emotions can sometimes be the cause of human dysfunction. Understanding the relevance of emotions and the ability to manage and understand these, add to more effective leadership in organizations. A truly successful leader, however, needs more for universal leadership success. The ability to integrate intelligence and knowledge, leadership skills, geographical and cultural dimensions into the style displayed, makes for more effective leadership.

As has been described above, leadership is an emotion laden-process, for leaders as well as followers, and according to Ferguson and Kelley (2005) research has proven that higher levels of emotional intelligence make teams more effective and productive, create more resilience during changing times and add to an improved retention of talent in the organization. Goleman et al. (2002) identify fifteen different emotional intelligence competencies, which are allocated to four domains. They allude to the fact that while all good leaders possessed some excellent emotional competencies, very effective leaders generally possess numerous emotional competencies and traits, but there is no one single formula that guarantees leadership success. Moreover, leadership is situational, hence; different qualities may be required for different leadership contexts. However, effective leaders typically display at least one strength in each of the core areas of emotional intelligence. In Goleman's model these are self-awareness, self-management, social awareness and relationship management, whereas in Petride's trait emotional intelligence fifteen factors are divided up differently into domains of emotionality, sociability, well-being and self-control (Goleman et al., 2002; Petrides, 2010).

### **Theoretical Review**

**Trait Theory:** The trait theory attempted to identify specific physical, mental, and personality characteristics associated with Leadership competencies success, and it relied on research that related various traits to certain success criteria (Northouse, 2007). This theory argued that leaders are people who can fully express themselves while others cannot, and this is what makes them different from other people. A leader has the right combination of traits which makes him a good leader. The meaning of this theory is that the same leadership competencies attributes are applicable for leadership competencies on a battlefield, non-profitable organization, and profitable organizations. This theory is relevant to this study since it elaborates on the characteristics of a good leader. For instance, the theory posits that the character of a leader is what determines whether he/she will be a good or a bad leader. This theory addresses the variable leadership competencies.

### **METHODOLOGY**

In conducting this study, descriptive survey approach was adopted and data was generated from a five point likert scale questionnaire. The study covered a population of one hundred and twenty three (123) members of staff of three selected banks in Owerri. Taro Yamene formula was used to select a sample of 94 respondents. Out of the 94 questionnaires distributed, 88 were correctly filled and returned; thereby given a questionnaire return rate of 93.62%. The data gathered was analyzed with the kruskawalis (H) test. The kruskawalis test is given as;

$$T = H = \frac{12}{N(N+1)} \sum_{i=1}^k \frac{R_i^2}{n_i} - 3(N+1)$$

The decision rule is to reject the null hypothesis if  $H > \frac{2}{(k-1)}$ , where k is the degrees of freedom.

**RESULTS**

SPSS OUTPUT FOR HYPOTHESIS ONE

NPAR TESTS

/K-W=SMandSWLC BY RANKS (1 5)

/STATISTICS DESCRIPTIVES

/MISSING ANALYSIS.

**NPar Tests**

**Descriptive Statistics**

	N	Mean	Std. Deviation	Minimum	Maximum
SMandSWLC	20	17.6000	7.75547	5.00	30.00
RANKS	20	3.0000	1.45095	1.00	5.00

**Kruskal-Wallis Test**

**Ranks**

	RANKS	N	Mean Rank
SMandSWL C	1.00	4	2.63
	2.00	4	11.00
	3.00	4	13.88
	4.00	4	17.88
	5.00	4	7.13
Total		20	

**Test Statistics<sup>a,b</sup>**

	SMandSWLC
Chi-Square	15.984
Df	4
Asymp. Sig.	.003

a. Kruskal Wallis Test

b. Grouping Variable:

RANKS

**Discussion:** from the SPSS output above,  $H > \frac{2}{(k-1)}$  (i.e  $0.05 > 0.003$ ), we therefore reject the null hypothesis in line with the rule and conclude that there is a significant self management has on significant effect on self awareness leadership competence

SPSS OUTPUT FOR HYPOTHESIS TWO

NPAR TESTS

/K-W=RMandSWLC BY RANKS (1 5)

/STATISTICS DESCRIPTIVES

/MISSING ANALYSIS.

**NPar Tests**

**Descriptive Statistics**

	N	Mean	Std. Deviation	Minimum	Maximum
RMandSWLC	25	17.6000	7.72981	5.00	30.00
RANKS	25	3.0000	1.44338	1.00	5.00

## Kruskal-Wallis Test

	RANKS	N	Mean Rank
RMandSWLC	1.00	5	3.20
	2.00	5	13.50
	3.00	5	17.90
	4.00	5	22.00
	5.00	5	8.40
	Total		25

	RMandSWLC
Chi-Square	20.606
Df	4
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable:  
RANKS

**Discussion:** from the SPSS output above,  $H_{(k-1)}^2$  (i.e  $0.05 > 0.000$ ), we therefore reject the null hypothesis in line with the rule and conclude that relationship management has significant effect on social awareness leadership competencies

## CONCLUSION AND RECOMMENDATIONS

Leadership competence is an integral component of organizational performance, it was concluded in this study that the emotional state of the leader has significant effect on his/her competence. In line with the findings and conclusion, the study recommends that;

- i. Leaders should demonstrate emotional self-control, transparency, adaptability, initiative and be optimistic. These are the inevitable high personal standards that drives them to constantly seek performance improvements, hence; enhancing their goal achievement orientation
- ii. To develop quality social awareness, leaders should strive to exhibit conflict management skills, be inspirational, drive changes in their environment and develop others. These helps to generate an atmosphere of friendly collegiality and make them models of respect, helpfulness, and co-operation. Thereby drawing others into active, enthusiastic commitment to the collective effort, and build spirit and identity.

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## Accounting Career Choice Theories: Is Culture an Impediment?

**Ali Rkein**

Charles Darwin University  
Accounting Department

**Hassan Ibrahim Rkein**

Faculty of Business Administration, Accounting Department,  
Al Maaref University, Beirut, Lebanon

### ABSTRACT

At a time where an enormous amount of resources have been allocated and spent towards achieving a promising future for all Australians including aboriginal and Torres Strait Islander people. And In a period of increasing awareness among Indigenous Australians that accounting specialization is important and greatly needed for self-determination, the inferior representation of Indigenous Australians majoring in accounting requires attention to understand the reasons behind the dearth of Indigenous accountants that exist in the profession. This paper, while drawing on career choice theories, builds on the Yin/Yang principles of societal values of life, developed by Hines (1992), to explain the cultural constructs of developing an intention to major or not in accounting. The paper tries to identify the impediments preventing Indigenous students from majoring in accounting, by understanding the Yin-based Indigenous cultural identity and relating it to the Yang- infused accounting values.

**Keywords:** Accounting, Career Theory, Indigenous, Culture, Outcome Expectation, Self-Efficacy

### INTRODUCTION

The dramatic decline in the number of students majoring in accounting over the last decade has raised serious concerns amongst accounting professional bodies about the status of accounting education (Hardin et al., 2000; Jackling and Calero, 2006; Sherman and Tymon, 1997; Albrecht and Sack, 2000). Although the decline has been common to many developed countries, the inferior representation of Indigenous students studying accounting in Australia has triggered additional attention and an anxious interest amongst universities and researchers to know the reasons pertinent to this ethnic group of people. Despite governmental efforts and initiatives to promote majoring in accounting by providing scholarship assistance to students and subsidies to universities and training organizations for recruiting Indigenous students, the number has remained low, with an estimate of only ten (10) Indigenous accountants among the 180,000 Australian professional accountants (Lombardi and Clayton, 2006; Rose, 2012).

Indigenous leaders and over last few years have been highlighting and greatly acknowledging this inferior representation in accountancy. For many years, careers such as law, teaching and nursing have been valuable to Indigenous people but accounting as a career choice was not seen as equally valuable or needed. However, recently, an increasing awareness has been spreading in the Indigenous community regarding the value that accounting offers in seeking self-determination and impartiality in administering the community affairs, and in sharing the control over the community and the nations' wealth. In this sense, understanding the reasons why Indigenous students do not major in accounting becomes quite important and necessary

in the quest to increase the number of Indigenous accounting students. This study discusses different constructs that drive a particular career choice from a cultural perspective in a way that aims to reveal that the Indigenous cultural values of life contradict with the Western, capitalist values implicit in the accounting career.

A review of the literature on career choices among students and minority ethnic groups is presented in the next section. It is then followed by a section which discusses the theoretical model of the study that draws on different career choice theories used in previous studies, and on the “yin and yang” values framework of Hines (1992) to examine the cultural values of life and the constructs of a career choice. The third section analyses the two constructs of a career choice, self-efficacy and outcome expectations, from an Indigenous cultural perspective. The section discusses how these constructs conflict between Indigenous cultural values and accounting as a career. Finally, the study concludes with a summary and conclusion.

### **LITERATURE REVIEW**

Given the dearth of research surrounding Indigenous education in general and accounting education in particular, it was necessary in this section to present three categories of the literature that have been reviewed to inform the study and develop the theoretical framework. The first category is the career choice literature that addresses the different reasons and factors for choosing a particular career. The second category is the accounting education literature that discusses the different reasons behind majoring or not majoring in accounting. The third category is the literature on Indigenous Australians' education and culture history.

Many studies have pointed out that a student's intention to major in a particular field is affected by factors such as self-efficacy, working conditions, social values, and some other stereotypical personal characteristics (Hermanson and Hermanson, 1995; Horowitz and Riley, 1990; Garner and Dombrowsky, 1997; Gul, 1986; Wolk and Cates, 1994). These studies have generally used diverse career choice theories, such as the theory of reasoned action (Fishbein and Ajzen, 1975), the theory of planned behaviour (Ajzen, 1988), and the social cognitive career theory (Gainor and Lent, 1998) to explain factors that drive a particular career choice. For example, Gainor and Lent (1998) used the social cognitive career theory in predicting math choice intentions for African American students. Lent, Brown and Sheu (2005) used the same theory in an engineering context.

On the other hand, prior research has addressed students' studies of accounting in general (Albrecht and Sack, 2000; Birrell et al, 2005; Booth and Winzar, 1993; Boughen, 1994; Cohen and Hanno, 1993; Gul, 1986; Hardin et al, 2000; Inman et al, 1989; Jackling and Calero, 2006; James, 2008; Mladenovic, 2000; Parker, 2000; Parker, 2001; Sherman and Tymon, 1997; Smith, 2005; Albrecht and Sack, 2000; Zeff, 1989; Wolk and Cates, 1994). These studies have found different contributing factors to majoring or not majoring in accounting and discussed them from different perspectives. Some of these studies have examined the personal and intrinsic factors between students, by analyzing their perception and attitudes towards accounting (Albrecht and Sack, 2000; Booth and Winzar, 1993; Boughen, 1994; Gul, 1986; Jackling and Calero, 2006; Lippmann, 1992; Wolk and Cates, 1994). In some of these studies (Adams et al., 1994; Auyeung and Sands, 1997; Lowe and Simons, 1997; Paolillo and Estes, 1982) it was found that factors related to the availability of employment and earnings are important in the students' choice. Other factors include perceived job satisfaction, aptitude, and interest in subject areas were also found (Auyeung and Sands, 1997; Gul et al., 1989; Paolillo and Estes, 1982). Also, unfavorable perception of accounting has been recorded and many students have been found to perceive accounting as quantitative and boring (Cohen and Hanno, 1993; Jackling and Calero, 2006; Mauldin et al, 2000; Mladenovic, 2000; Parker, 2000; Parker, 2001).

The influence of teachers, friends, families and media has also been suggested as factors which influence majoring in accounting (Brown, 1996; Cangelosi et al., 1985; Geiger and Ogilby, 2000; Gul et al., 1989; Paolillo and Estes, 1982; Roe and Ester, 1999). Furthermore, some studies have studied the relation between students' social values and majoring in accounting. Brown (2002) and Simpson (2001) have found that where collective social values are highly appreciated, the career choice will be rather consistent with the group and community values than individual values.

Reviewing the above literature has assisted in considering the possible impediments and barriers for studying accounting. Self-efficacy as represented by the educational level, literacy and numeracy for Indigenous students, in addition to their cultural values and work expectations were chosen to be examined in order to study the negative representation of Indigenous students in accounting. Hence, it became necessary to review some of the historical literature on Indigenous education and culture (Blake, 1981; Gibson, 2000; Godfrey et al, 2001; Harris, 1987; Harris, 2000; Lovesy and Fraser, 1999; Watson et al, 2006; etc...).

### **THEORETICAL FRAMEWORK**

The theoretical framework for this study draws on different theories that were used in the literature to explain the intention for a particular behaviour, and more specifically in accounting research to explain factors affecting career choices. These theories are the theory of reasoned action (TRA) developed by Fishbein and Ajzen (1975), the theory of planned behaviour (TPB) (Ajzen, 1988), and the social cognitive career theory (Gainor and Lent, 1998). The theory of reasoned action conceives intention to be determined by the 'individual's attitude' towards a particular behaviour and it is subject to the influence of some 'referents' (parents, instructors, friends, etc.). The individual's attitude is determined by the individual's beliefs about the outcomes and consequences of a particular behaviour, and the influence by referents represents the social environmental pressure to perform or not to perform the behaviour.

The social cognitive career theory, added an additional personal variable, 'self-efficacy', to the 'individual's attitude' variable to explain that intention for a behaviour is also determined by the persons' perception of their aptitude to perform career-related activities. As some factors may interfere with an individual's intention towards a particular behaviour (Cohen and Hanno, 1993, p. 222), the theory of planned behaviour was more explicit in incorporating an additional pro/anti control factor, which represents either an additional incentive to perform the behaviour in line with the individual attitudes (pro), or a prohibitory factor to not perform the behaviour in contrast with the individual attitudes (anti) (Ajzen and Madden, 1986; Ajzen, 1988).

While many studies have used these theories to explain and explore factors affecting students' intentions to major in a particular discipline or in accounting, cultural factors did not receive explicit consideration and were only recognized implicitly as part of the social and environmental factors identified. These studies have recognized culture as a pro/anti control factor that may influence, subsequently, the intention to the behaviour that had been developed already from the individual's attitudes and outcome expectations of a particular career. However, the differentiation of this study is in its consideration of culture as a system in which 'individual's attitudes' and 'outcome expectations' are profoundly embedded within cultural values and they develop in line with the structural elements of this culture (Greer and Patel, 2000; Hofstede, 1980, 1983). Hofstede (1980, p.25) defined culture as "the collective programming of the mind which distinguishes the members of one human group from



another". Thus, culture is a system of societal values where values are "a broad tendency to prefer certain states of affairs over others" (Greer and Patel, 2000; Hofstede, 1980, p. 19). Hence, this study recognizes culture as an essential element for understanding how individuals' attitudes and outcomes expectations are shaped and defined by the norms and values of a particular ethnic group, in a way that may result in a common response to a particular career choice. Hines (1992, p.318) explained that the structural elements of culture are depicted by "the universal masculine or yang and the feminine or yin" conceptions. A masculine culture exists when the society prefers individual independence, competition, ambition, wealth, and material success. On the contrary, a feminine culture exists when the society prefers common goals, relationships, modesty, and the quality of life (Hofstede, 1980). Hence, in identifying the factors that deter Indigenous students in Australia from majoring in accounting, this study considers the structural elements of the Indigenous culture in terms of its masculinity or femininity and relates them with accounting work values.

In this regard, and as proven by many studies, there is no doubt that students who choose accounting believe it is a career that provides them with high income, long term career advancement, prestige and social status, personal growth and development, a good work environment, and the opportunity for leadership and proprietorship (Felton et al., 1994; Hermanson and Hermanson, 1995; Inman et al., 1989; Lowe and Simons, 1997; Lancaster University, 2009; Paolillo and Estes, 1982; etc.). This means that these perceived benefits correspond with the masculine work value dimension of culture. On the other hand, the literature reveals that Indigenous Australians' cultural values are aligned with the feminine dimension of cultural values (Bell, 1986; Berndt and Berndt, 1988; Cohen and Somerville, 1990; Elkin, 1981; Harris, P., 1991; Keeffe, 1992; Peterson and Langton, 1983; Povinelli, 1993, etc). Hence, it is important to examine whether students from an ethnic society, which is characterized by feminine characteristics of culture, such as the Indigenous Australian communities, are unlikely to choose a major such as accounting that is driven by a masculine dimension of work values.

Informed by the above theories, the study draws on both primary and secondary data. Primary data was collected by conducting semi-structured interviews with indigenous students, teachers, principals, career advisors in Indigenous communities' schools and in boarding schools (outside the community), and with a focus group of students' parents. Secondary data was collected from government reports and the extant literature on Indigenous Australians.

### **SELF-EFFICACY**

Self-efficacy refers to the individual's beliefs about his or her ability to carry out the activities pertinent to a particular career. The theoretical framework in this study conceives that students would develop an interest to major in accounting if they consider themselves competent in the necessary skills, and they would not develop an interest if they see themselves as incompetent. While there have been some studies that used self-efficacy in explaining the state of representation for some ethnic groups in some occupations (Gaffney et al., 1995; Gecas and Schwalbe, 1983; Hughes and Demo, 1989; Witherspoon and Speight, 2009), there has been no research that directly examined the self-efficacy of Australian Indigenous students in accounting. However, several studies have actually shown a widespread perception of accounting as being numbers-based (Cohen and Hanno, 1993; Jackling and Calero, 2006; Mladenovic, 2000; Parker, 2000, 2001) with an adequate language proficiency requirement (Grace and Gilsdorf, 2004; Wallace, 1997; Wong and Chia, 1996). Subsequently, in this study, the self-efficacy for Indigenous students is considered to be reflected by the numeracy and literacy skills required to perceive themselves capable of majoring in accounting. Therefore, this study discusses the self-efficacy for Indigenous

students by discussing its two constructs: numeracy and literacy. However, as these two constructs are shaped by the institutional environment in which they develop and form, discussing the educational system as the broader construct would also be useful and informative.

### EDUCATIONAL SYSTEM EFFICACY

Studying the broader construct of the educational system efficacy may prove to be informative in this study in the sense that it has some implications for student’s self-efficacy in accounting. Hence, it is proposed in this study that a low educational system efficacy may result in a low self-efficacy for Indigenous students to the extent where the minimum efficacy, perceived necessary to pursue accounting, is not attained.

The general school educational system for Indigenous students has been heavily western-culture based with a lack of consideration of their needs in terms of cultural values, norms, language, and social belonging. The disaffection of students and parents, added to living in a disadvantaged socio-economic environment characterized by poverty and high levels of sickness, results in a high level of absenteeism and truancy and an overall under-representation in school education (Godfrey et al., 2001; Harris, 2000; Helme, 2005; McMillan and Western, 2000).

The disadvantaged socio-economic environment has made it difficult for Indigenous families to assume their basic needs of food, shelter and security, and made it inconvenient for many students to feed, dress and get to school without the support of their parents. This has resulted in a poor attendance at primary school levels and only a few students reaching the upper years of schooling. In the year 2009, the student survival rate to the final year of school has been about 45% of Indigenous students in comparison with 76% of non-Indigenous students (Helme and Lamb, 2011). A school teacher commented in this regard by saying that: *“Indigenous students do not have the consistency of learning everyday one step on top of the other, because they are not used to going to school daily and their parents do not force them to. This results in very broken interrupted school learning”*. (Table 1 shows secondary school attendance, for year 2006, for ages 15 to 17 between Indigenous and non-Indigenous students). In addition, cultural ceremonies and rituals have interrupted students’ primary years of education and their consistency of learning. For example, *“in the case of death in a community, the whole class might shut and some families may have to go to another community for a week or more”* according to an Indigenous school teacher.

**Table 1: (Secondary School Attendance by Age in 2006)**

Age	Indigenous %age	Non-Indigenous %age
15	73	89
16	55	81
17	36	66

**(Source: Australian Bureau of Statistics, 2006)**

These factors which result in poor attendance and high levels of absenteeism have made some concerned families, who are more dedicated to their children’s learning, to send them outside their communities to boarding schools which also teach non-Indigenous students. Although

this has improved class attendance for these students, only a few of them are able to adjust to the new environment and make it through to graduation. The majority of students find it difficult to be disciplined and to obey school rules. Some students, for example, have cited wearing shoes as an issue for them. Also, many of them become homesick and fail to return to school after their holidays. This is reflected in the decreasing figures of secondary school attendance reported in Table 1. A boarding school principal stated that *"... when they board here, they feel homesick, particularly if they are not sent with a large group of their peers. Having one or two from one community is hard as they will be extremely lonely here, no one knows their background or sometimes speaks their language, and therefore, they will decide to go home"*. Another boarding school principal added that *"many students do not return to the school after their break holidays because they could not cope with being away from home and because they are not ready for the rules and the discipline, such as wearing shoes every day, school uniforms, getting up at six, having breakfast, cleaning the room, making the bed and being in class on time. They found these very difficult and repetitive"*.

In addition, the deprived quality of education in primary schools in communities resulting from poor attendance has made these students arrive to boarding schools poorly prepared to continue their education. Indigenous communities do not follow mainstream curricula, they have inadequate space, and lack sufficient teaching materials. The students are, in addition to their poor literacy and numeracy, frequently underprepared for the use of technology such as computers and calculators (Commonwealth Department of Education, Training and Youth Affairs, 2000; Hunter, 2010; Purdie and Buckley, 2010; Reid, 2008). This situation has led many boarding schools to segregate Indigenous students from non-Indigenous students because of the difference in their education levels. While such segregation does not encourage biculturalism and condemns these students to loneliness, it also results in accounting as a school course not being offered to this stream of Indigenous students according to boarding school teachers interviewed.

*"... their literacy and numeracy is not the same as other students, it is actually very bad. If you can't read and write English to a certain standard, and if they do not have the basics of western numeracy because it is not in their culture to count in tens and hundreds and thousands, so if they do not have these basic stuff, then it is going to be very difficult for them to pass accounting classes"*.

Another boarding school teacher similarly commented: "community students have lost a lot of school days because of culture ceremonies. The absence of continuity in education has vanished them a lot of their basics. Therefore when community students come to here, there is a lot of back tracking to catch them up to speed, they are always behind with everything, and some of the subjects are too difficult for them, accounting will be one of those difficult subjects".

And another confirmed that "it is unlikely for Indigenous students to venture into choosing to enroll in what they call hard subjects such as accounting".

Hence, cultural values, norms and rituals, and social belonging have resulted in a lack of emphasis on formal education which leaves Indigenous students inconsistent in their school attendance and unable to attain the competency to be placed in a stream of classes where they would be given the opportunity to study accounting in their secondary years of education. This has deprived them of the opportunity to learn about accounting and to develop a particular understanding of its concepts and its outcome expectations which may result in an intention to major in it.

## **Numeracy**

A number of studies have examined the relation between students' perception of accounting and its influence on majoring in accounting. Many of these studies have found that there is a common perception that accounting is numbers-based associated with an emphasis on numerical accuracy, routine recording and calculation, and attention to details, and that a student must be good with numbers to major in accounting (Cohen and Hanno, 1993; Jackling and Calero, 2006; Mladenovic, 2000; Parker, 2000; Parker, 2001; Smith, 2005). In the US, an initiative to increase the number of students majoring in accounting has focused on launching and sustaining contact with school mathematics teachers (Smith, 2005).

It is suggested by the literature that students who lack these numbers-related skills (mathematics) are unlikely to develop an intention to major in accounting. In this regard, a recent study by Watson et al., (2006) has shown that Indigenous students' average performance in mathematics is under State and National averages at all school levels. A good performance in mathematics is considered to be culturally inclusive, in the sense that it requires excellent supportive teachers and a strongly supportive learning environment (Watson, 2006). Drawing on the discussion in the previous section, it seems clear that such a supportive learning environment is not available to many Indigenous students. In addition, the review of Indigenous Australian literature shows that their counting systems or more generally their mathematical concepts do not go very far in comparison with western-based mathematical concepts. Previous research on Indigenous number skills and counting system indicated that such a system is poor and it lacks the structure to be called a system in the first place (Brandenstein, 1970; Harris, 1987). Blake (1981) claimed that Australian Indigenous not only did not develop mathematics, "but did not even feel the need to count" (Blake 1981, p.3). The Statements of Indigenous Australians counting systems did not go beyond four (Blake, 1981). Some authors argued that the absence of numbers beyond four does not necessarily reflect an inability for counting beyond that number. Harris (1987), Haddon (1890), and Tindale (1925) reported real examples of some Indigenous people being able to communicate information on numbers beyond four although no specific terms were used.

While Harris (1995) and others have rejected the statement that the inability of Indigenous Australians to count is due to the absence of counting words, they have all acknowledged that language is reciprocal to numeracy, in the sense that a concept cannot be understood if there isn't a word for it (Lovesy and Fraser, 1999). Hence, the absence of many numerical concepts from the Indigenous culture (such as over, above, higher, greater than, more, up, bigger, larger, under, below, lower, beneath, less than, down, smaller), have made it difficult for students to understand these concepts when they are discussed in mathematical classes (Watson et al., 2006) and hence in accounting classes. The Indigenous culture has been less concerned with quantity and accuracy measures, so that it is unlikely that these terms would be easily understood by them.

The limited numeracy skills and the lack of understanding of most of the quantitative measures have made Indigenous students struggle in mathematical classes and in accounting courses at school levels. This has, over time, created among them a perception that accounting is difficult and it requires a strong mathematical competency.

## **Literacy and Culture**

Language is considered an essential construct in developing a sufficient efficacy for majoring in accounting. Several studies have shown that a proficiency in English as the national language is critical to performing well in accountancy and to students in developing a favourable intention

of majoring in accounting. However, the review of Indigenous Australians literature and the accounting language in its current western-base has revealed that they do not share the same language and terminology. It is even suggested that some accounting terminology may have a contrasting meaning within the feminine values of Indigenous culture. Hence, it is suggested in this study that a lack of common terminology or mutual understanding between a western-based accounting language and the Indigenous language may impede Indigenous students' understanding of accounting terms to the extent that they would become discouraged from majoring in accounting.

The meaning of western-based accounting language and terminology is generally rooted within notions of economic growth, wealth, competition, assets, and financial rewards. Such notions lack meaning in a society whose need for food, shelter, and spiritual enrichment are all provided by the land, and to whom the wealth is wisdom, kinship, sharing, and cooperation. Hence, it is anticipated that Indigenous students face difficulties in developing a clear, non-contrasting understanding of accounting terminology to the extent that they become hesitant about majoring in accounting. A concept cannot be understood clearly if there isn't a word for it (Lovesy and Fraser, 1999), for example, the lack of words for expense, revenue, budget, cost, variance, and profit may necessarily prohibit an understanding of the use of these words. However, a greater difficulty would be experienced by students when they need to learn terms that have a conflicting meaning as per their language, for example, own, asset, and inventory, etc... 'To own', in Indigenous culture, means to have the obligation to share, or the right to be asked (Myers, 1976). Hence, an exclusive possession does not exist and it is substituted by caring and sharing. This is particularly evident in their notion of land where Dingle (1988, p.10) wrote: "land was used, cared for and held in trust for future generations. It was also shared with others: to control land is not to enjoy it exclusively but rather to exercise the right, which is at the same time an obligation, to allocate rights in its resource to others". Hence, the western notion of an asset in which what is owned is normally controllable conflict with the Indigenous kinship and social obligations that tend to consider the asset as a liability (Gibson, 2000), in the sense that it creates an obligation to share and to be asked.

The kinship system that is very dominant in Indigenous societies is very different to the system in non-Indigenous societies. The Indigenous individual is totally bound to other members of his or her society (Blake, 1981). On the other hand, the non-Indigenous individual treats others of their society as competitors.

An Indigenous student participating in this study stated that: 'The teacher that I worked with made the job look so easy, but at the end it was pretty hard.' The student has now moved to the health profession because '... nursing seems a lot easier.'

There was a noticeable perception amongst the research participants of a strong relationship between accounting and mathematics. Many of the participants in this study declared that accounting is not an area of interest for them, and that their opinion is not critical of accounting. The reason for the lack of interest is that they are 'not good with maths and/or numbers'. For instance, a participant who is very certain that she will not do accounting. She said this is 'not because I do not like accounting, but more because I'm not good at maths; I'm not good at numbers'.

While in many instances low self-efficacy regarding mathematics has played a crucial role in keeping students away from accounting, a participant's high self-efficacy in English has played a significant role in her decision to become an English teacher. She stated that: 'Well, I really liked English, and I always scored high or maybe the highest sometimes.'

Others also declared that the perception of accounting as a number crunching exercise is what affected their confidence about studying the subject. They stated that: 'When I think of accounting, I think of numbers, they (numbers) scare me. I do like maths, but was not good at it.' Another student stated that: 'You need to be so smart at maths, I am not. That is another reason why I have never thought about it.'

### **Outcome Expectations**

Drawing on the theoretical framework for this study, an individual is likely to develop an intention towards a particular career if the outcome expectations of the career match his or her work values. James (2008) defined outcome expectations as the consequences of practicing a career, and work values as the work standards that the individual wants to live by. Brown (2002) considered that work values play an important role in identifying an individual's career goals. Hence, this section discusses whether the Indigenous students' work values match or mismatch the outcome expectations associated with majoring in accounting.

Accounting is considered to be at the heart of the liberal ideology on which the capitalist economic system is based (Lombardi and Clayton, 2006). As a "constructed device for dealing systematically with commercial or financial aspects of the affairs of persons, firms and other organizations" (Chambers, 1991, p.3) accounting has emphasized and maintained the capitalist ideology of individualism, personal wealth creation, and ownership (Lombardi and Clayton, 2006). This means that working in accounting would furnish the individual with opportunities in: developing networks with professional and wealthy people; professional development into leadership positions; working in a professional flexible environment; and in a growing financial comfort. Studies have shown that accounting is perceived by students to be a career that provides high earnings potential, secure job market conditions, and opportunities for development and advancement (Adams et al., 1994; Ahmad et al., 1997; Auyeung and Sands, 1997; Felton et al., 1994; Gul et al., 1989; Inman et al., 1989; Lowe and Simons, 1997; Mauldin et al., 2000; Paolillo and Estes, 1982). A study at Lancaster University grouped students' perceived benefits of accounting into four categories: stimulation, reward, variety, and leadership (Lancaster University, 2009). The 'high class' capitalist world of business and money attracts and stimulates students to work in the elite corporate world, and accounting provides an ideal opportunity to gain access, especially after accounting has been placed at the top of the business agenda as a result of the recent financial scandals. Also, the study has shown that students perceived accounting as a rewarding career which offers a sustainable financial reward. In addition, accounting offers a variety of career choice that suit all interests including auditing, assurance, management, consulting, tax planning, human resource, etc... Finally, accounting was perceived to have a high prospect of promotion to leadership positions within organizations.

Building on the results of the study above and many other studies (Adams et al., 1994; Ahmad et al., 1997; Auyeung and Sands, 1997; Felton et al., 1994; Gul et al., 1989; Inman et al., 1989; Lowe and Simons, 1997; Mauldin et al., 2000; Paolillo and Estes, 1982), it can be said that students who intend to major in accounting have masculine work values, in the sense that they conceive financial prosperity, productivity, and independence should accompany one's work (James, 2008). Hence, accounting students find a match between their work values and the materialistic, capitalist outcome expectations of accounting.

However, work values for Indigenous students have been disconnected from the market, masculine, capitalist dimension and are more unified with their land values, in which employment does not have the same economic imperative as for non-Indigenous people (Greer

and Patel, 2000). “Many (Indigenous) place no importance on continual employment, and work is generally regarded as an economic necessity, rather than as a part of a lifetime plan” (Eades, 1988, p. 99). The land for Indigenous people is kin. It is an intimate part of the life, culture, personality, religion, sovereignty, autonomy and self-determination. For them, land is not an “object-like to be manipulated, exploited and mastered” (Sharp, 1996, p. 137). Land is alive and spirited and from which they derive their identity (Maybury-Lewis, 1992), hence they are bound by duty and responsibility to protect it and preserve it for future generations. Thus the custodianship and the kin relationship with the land take preference over all economic matters. Therefore, the work values of Indigenous people lies in having an employment that contributes to maintaining relationships with the land and their communities. In this regard, Indigenous students interviewed in this study have all expressed preferences for careers that contribute to their communities.

*“I want to be involved in the community, like everyone in my family”*

*“Being part of the community is what is important to me...”*

*“I want to be a teacher in remote communities because I want to be with my family and out bush”*

*“I do not see myself doing accounting; law would seem more to benefit my community in defending and protecting their rights”*

A common theme that emerged from the interviews is a ‘pull back’ to the life in the community. Working in elite professional organizations at a desk with a computer in an air-conditioned office, wearing suits, and earning high salaries did not have much appeal to Indigenous students.

*“I could work and earn 100 thousand dollars a year but that will not make me happy if I am away from my family and my community. Family values are more important to us than money”.*

It is apparent that Indigenous students’ work values are vastly different from the capitalist masculine outcome expectations of accounting, in a way that drive them away from majoring in accounting and have them focus more on careers in education, medicine, and art in which they see a closer connection to their community and land.

*“I want to major in something that helps me to help the people in my community”*

*“I want to become a police officer”*

*“I want to become a school teacher in the community so that not many students get to leave their communities to continue their studies at boarding schools”*

*“I want to start a senior school so that students have the option to study in their communities”*

*“I want to become an artist to reflect my culture”*

*A participant, who like most participants faced difficulties acquiring education, was willing to become a teacher in order to help others. She stated that: ‘I wanted to become a teacher mainly to help students and little kids learn ... I would have done that to all students, not only Indigenous students, they are all kids and need the education.’*

Another student who is studying law, is no different to the other participants. She is doing it to benefit her community. She stated:

*'I suppose I see it as a tool that I can use to help Indigenous people ... maybe bridge that gap in the law where ... a lot of people who are Indigenous, especially out in the communities, see it as, that's the White law. And I want to ... bridge that gap and help them understand this is the law, everyone follows it and just, sort of, help them to understand that's what it is. Because there are a lot of Indigenous people, especially out in the communities; they don't understand it and then when they do something wrong it's not explained to them. They don't understand that there are a set of rules ... I just think that going into, or studying law, I can get as much knowledge as I can possibly then help translate it back to them, to get an understanding so that they can actually be a part of society productively ... so just, sort of, help them out instead of getting the arse- end of the law when they get told, you've done something wrong, you're going to get locked up for it, or here's a fine. And then they're still sitting there like, I don't understand what I've done. So I guess that's, kind of, maybe my wanting.'*

The following quotations illustrate that a major influence behind participants' decisions to study a particular course is the ability to help their communities.

*'I just suppose they need a lot of Aboriginal teachers, for the Aboriginal kids. And, like, I can relate to them, and, yes. I can, like, be a role model for them and help them go through school, yes, the way I went through school. Because I never really had, like, Aboriginal teachers or role models, and I want to be that for the other, for the younger mob. I can see myself making a difference with this degree ... .'*

Others' interest in taking degrees in social work have mainly been driven by a desire to help people who have been stolen from their families.

*'I want to be a social worker, so I can help people (Aboriginal people and non-Aboriginal people) that have been taken away from their families, because I have been taken away from my family. I know my family now, but when I was a kid, I did not. Because I have experienced it, I would like to help other kids that are going through it, so I can tell them that I have been through it ever since I was little kid baby. I'd just like to do that.'*

Another student, who is more interested in biomolecular science than marine biology, decided to study marine biology instead because he sees greater benefits to his community with such a course.

*'I wanna help my community ... I am from the islands so like help out my own where I am from. And there is a lot of research that I can help with. Like if I am the marine biologist with the group, I can talk to the people, where I can be a bridge between the Islanders and whites. We are very connected to the ocean. In the past people used to catch a type of shell and traded it with Fiji and other countries for wheat and stuff like that, but now the whites are taking full control, they hire the islanders to do most of the work, and they just pay them wages. I just wanna be like a bridge, like if there is something that I understand I can explain it to them in our language, and they can understand me, and like they might be more comfortable talking to me instead of a white person.'*



## CONCLUSION

This study showed that the reasons Indigenous students avoid accounting specialization are culturally developed and defined. It is clear that there has been a dichotomy between the Indigenous Australians' cultural and social values and the current western-capitalist accounting values. Previous studies show that students who choose accounting perceive it as a career that provides them with material success, wealth, ambition, and individual independence. These accounting career's work values contradict the Indigenous students' expected work values that have been developed within the notions of their feminine cultural identity. The Indigenous culture has been more concerned with human capital, kinship, nurturing, caring, sharing, community affection, and belonging to the land rather than with material possessions, ownership, individual control, and other mainstream capitalistic values of individual wealth.

The study explained that Indigenous rituals, norms and cultural values, in addition to some other factors, have contributed to the lack of educational efficacy that students perceive necessary to follow an accounting major. The literacy and numeracy levels in Indigenous communities have not been at the level that makes accounting a study that is grasped easily. Many of the accounting quantitative measures and linguistic terms do not have a meaning in the Indigenous society and some of them even have a contradictory meaning such as the concept of ownership that does not exist in their culture.

It has been concluded from the study that a 'pull back' to the community has existed between all Indigenous students. They all wanted to specialize in areas that are useful to the community and keeps them participating such as arts, medicine, and teaching. This also shows that accounting is not perceived by students to be relevant and useful to the community. However, the recent and growing awareness among Indigenous leaders that accounting is useful for self-determination and for administering community wealth proves the necessity of spreading that awareness between the different social groups of the community to increase the number of Indigenous students studying accounting. This at the same time requires a considerable investment in social welfare to reform the disadvantaged socio-economic environment of the Indigenous communities, in a way that the necessary educational infrastructure will be protected and respected within the Indigenous cultural identity.

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# Raw Material Sustainability And The Performance Of Beverage Companies In Nigeria: A Study Of Intafact Beverages Onitsha

**Dr. Peter Ositadinma Ndubuisi**

Department of Entrepreneurship Studies

Chukwuemeka Odumegwu Ojukwu University, Igbariam, Anambra State

**Dr. Nonyelum Ugwu Joy**

Department of Business Administration/Entrepreneurship

Federal University, Ndufu-Alike Ikwo, Ebonyi State

**Dr. Chimeziem Udeze**

Department of Business Administration/Entrepreneurship

Federal University, Ndufu-Alike Ikwo, Ebonyi State

## ABSTRACT

This study examined the Effect of Raw Material Resource Sustainability on the Viability of Organizations. The study adopted survey research approach in its design and covered a population of 236 members of staff while its sample size was 182 members of staff. The data used in this study were generated from both primary and secondary sources. The Spearman rank correlation coefficient ( $r$ ) was used to calculate the reliability index which yielded a 94% output. The statistical tools used for data analysis were simple percentage (%) and Pearson Product Moment Correlation (PPMC) using the 20.0 version of statistical package for social sciences (SPSS). The study analyzed empirical data generated from a well structured valid and consistent questionnaire and posited that the viability of manufacturing organizations especially those in the beverage industry is significantly influenced by raw material resource sustainability. Moreover, the strength of the effect of raw material resource sustainability appears to be felt more on financial viability and less on management model viability. It was recommended among others that Organizations that must be viable must consciously develop sustainable raw material resources that will facilitate through backward integration cost and time efficiency in their raw material resource value chain, which is a significant impetus for the financial viability of organizations and that integrating the value chain of the organization can enhance the sustainability of raw material resource of manufacturing firms.

**KEYWORDS:** Competitiveness, Eco-efficiency, Recycling, Reuse, Sustainability

## INTRODUCTION

In today's Nigerian economy where the cost of doing business is "skyrocketing" everyday, government economic policies are becoming increasingly unstable and unpredictable and the market is becoming increasingly competitive due to pressure from imported products. The competitiveness of businesses in Nigeria has come under serious questioning. Whenever business performance is threatened, it is common to look towards reducing staff strength as an efficiency measure. However, considering the public outcry that follows downsizing and its impact on the image of the organization, it has become expedient for organizations to re-strategize and develop sustainable internal capabilities that can support their competitiveness. One of the ways through which organizations can develop this internal capability is to look towards resources/materials management. Big manufacturing firms like intafact breweries plc are known for the use of variety of materials/resources (both disposables and non-disposables). It has become expedient for them to rethink their resource/material

management strategy in order to enhance and sustain their competitiveness. Another interesting way to refer to this material/resource sustainability is “corporate waste to wealth programme” Becoming sustainable has become central to many aspects of everyday life. Not only does this relate to environmental decisions, but many products, services, production systems and developments now claim to be sustainable. However, sustainability has become a buzzword in the media, and is widely used in diverse contexts with disparate meanings. Sustainability is derived from two Latin words, *sus* which means up and *tenere*, which means to hold (Theis and Tomkin 2012).

In recent past, the concept of sustainability has found its way into business and management lexicon. According to the Chartered Institute of Personnel and Development (CIPD, 2012), the essence of sustainability in an organizational context is “the principle of enhancing the societal, environmental and economic systems within which a business operates”. This introduces the concept of a three-way focus for organizations striving for sustainability. This is reflected also by Colbert and Kurucz (2007), who state that sustainability “implies a simultaneous focus on economic, social, and environmental performance”. This notion may of course relate to the growth of so called “Triple bottom line accounting”. One of the major advocates of resource sustainability is the organization for economic cooperation and development (OECD). Furthermore, the global movement for a green economy is compelling government of nations across the globe to initiate and drive the process of making private organizations become eco-friendly in their operations. This has led to the establishment of agencies like Nigeria environmental standard regulation and enforcement agency (NESREA) which has been replicated in many states. It is therefore note worthy that in response to this government policy, eco-efficiency has become one of the prime indices for organizational performance especially for large and multi-national manufacturing firms. The Nigerian beverage industry is becoming more competitive as new entrants are leveraging on the abundance of raw materials, cheap labour and cutting-edge technology to produce low cost products that are competing with the arrays of products already in the market. However, both old and new beverage firms in Nigeria appears not to give considerable but required attention to the issues of raw material sustainability and its effect on non-financial indices of performance like eco-efficiency and competitiveness

### **Statement of the Problem**

Organizations in Nigeria today are operating in one of the most turbulent times considering the increasing inflation rate, high cost of capital, depreciating naira value security challenges and the tightening regulatory activities of government agencies. This has combined to increase the volatility of the environment. To remain competitive therefore, organizations are resorting to developing and adopting resource sustainability measures. However, the paucity of required technology has hindered many organizations from maximizing the benefits of recycling and reuse of materials. This has increased their cost of operations thereby affecting both their market potential and social performance. Again, organizations do not operate in a vacuum; they exist within the space provided by the society. It then follows that the changing social and climatic trends like insecurity, corruption, demand for work-life balance by employees and depleting climatic conditions are taking a toll on the ability of organizations to survive and grow. The problem of this study is therefore to examine the effect raw material sustainability has on the performance of organizations.

### **Objectives of the Study**

The general objective of this study is to examine the effect of resource sustainability on organizational viability. Its specific objectives include;

- i. Examine the effect of resource recycling on the competitiveness of beverage firms

- ii. Examine the effect of resource re-use on the eco-efficiency of beverage firms

### **Research Questions**

This study was guided by the following research questions;

- i. What are the effects of resource recycling on the competitiveness of beverage firms?
- ii. What are the effects of resource re-use on the eco-efficiency of beverage firms?

### **Hypotheses**

The following hypotheses are raised for this study;

**H<sub>01</sub>:** Resource recycling does not have significant effect on the competitiveness of beverage firms

**H<sub>02</sub>:** Resource re-use does not have significant effect on the eco-efficiency of beverage firms

## **REVIEW OF RELATED LITERATURE**

### **Meaning/Definitions of Resource Sustainability**

According to Daly (1991), there is no single distinct definition for sustainability, but everyone should concur that it is both morally and economically wrong to treat the world as a business in liquidation, in other words, to treat the planet and its resources simply as something that comes and goes in the struggles of the economy. Nonetheless, Gro Harlem (1987) definition of the concept of sustainability is widely used. Sustainability in this context is defined as development that meets the needs of the present without compromising the needs of future generations to meet their own needs. Any organization that fully satisfies the terms of this statement truly adheres to what the foundation of sustainability should be all about, as it is an outlook that not only completely disregards present-time selflessness, and satisfaction without gluttony, but it ensures that upcoming prospectors can be given at the minimum equal opportunities from the pool of resources. A definition hardly anyone, if any at all, would have a disagreement with, which is why it was chosen as the model definition of sustainability for this study. A sustainable company should in fact operate with this philosophy while balancing economical, social and environmental aspects.

### **The Dimensions of Sustainability**

Ever since the UN report "Our common future" was released in 1987, sustainable development has been a widely accepted concept and a generally strived for state for society. One of the most long-lived accomplishments of the Brundtland report was defining that sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (United Nations, 1987). Emphasizing the concept of sustainability from economic and policy perspectives, Stavins et al. (2003) propose that dynamic efficiency and intergenerational equity are two demanding yet necessary conditions in the talks for sustainability. Although constant consumption at a mere subsistence level would fulfill the Brundtland definition of sustainability, a socially desirable level of consumption (broadly interpreted) would be one in which the economy is at the Pareto frontier. At this point of dynamic efficiency, the economy is maximizing social utility by exerting "non-wastefulness" and thus has the potential of becoming sustainable. To assure that the economy is actually made sustainable, inter-generational transfers can fulfill the intergenerational equity condition that the total welfare function is non-declining over time. Today, the understanding of the concept of sustainability in policy and academia is multidimensional; not only does it encompass environmental sustainability but also at least economic and social sustainability. Other dimensions that have been considered include cultural, historical and institutional sustainability (Botta, 2005). Within the international policy framework, Raworth (2012) has suggested an analytical framework in which the planet's



natural resources set the environmental boundaries, a ceiling for all human activity to take place within. This includes the pursuit of a just space, free from critical human deprivation. Sustainable development requires living within ecological as well as social boundaries to avoid ecological and social crisis. These boundaries are based on norms and guided by research, but it must be remembered that local as well as global scale matters, for all systems are interconnected. Building a social foundation and staying within ecological boundaries creates a conceptual framework in shape of a “doughnut” that can be seen in. The doughnut approach thus in some sense puts stricter demands on human activity in that it doesn't tolerate tradeoffs between dimensions that risk crossing tipping points of Earth-system processes. At the same time, the dual aim it proposes is to move back to a safe environmental space and to move forward *all* human population into a just space.

- ❖ *Environmental (or ecological) sustainability* is the most commonly assumed dimension out of the three pillars. The dimension refers to a development that does not endanger natural resources, species and ecosystems (Anan & Sen, 2000). Raworth (2012) proposes quantitative indicators including buffer zones for nine critical Earth-system processes to provide a ‘safe operating space for humanity’. Due to current human activity, the boundaries of climate change, biodiversity loss and nitrogen use have all been crossed already.
- ❖ *Social sustainability* is the least well-defined of the three dimensions and it can even be argued that everything about sustainable development has a social dimension (Littig & Grießler, 2005). Two commonly used approaches to assess social sustainability are through capabilities (of people to convert economic wealth into desirable outcomes) and social capital (in the form of norms, trust and reciprocity that improves the efficiency of society), and others include economic equity, livability, health equity, community development, social support, human rights, labor rights, social responsibility, social justice, cultural competence, community resilience, and human adaptation (Adams, 2006). Some of these aspects are also included by Raworth (2012). She notes that within the international relations framework, social priorities from governments are that people are well, productive and empowered and she also acknowledges that we have never had a state of social sustainability for all humanity but argues that reaching such a state should be top priority for policy makers.
- ❖ *Economic sustainability* can be defined as maintenance of capital, for continuous generation of income (Stern, 1997). A more useful definition for governments, firms and households need to account for private as well as social costs and benefits; benefit-cost analysis may thus be one useful application. By assigning monetary values to social costs and benefits and using a life-cycle economic (LCE) approach, government and firms may account for different types of future consequences using a financial framework. Minimized life-cycle costs (LCC) and non-declining capital (real estate) values are possible interpretations of the term economic sustainability (Stavins *et al.*, 2003). Although the LCC approach can be criticized for oversimplifying and for not properly assessing environmental risks, it still provides a methodology that permits taking into account environmental impact over time and comparing them in a uniform framework (Gluch & Baumann, 2004). To complement these monetary assessments with qualitative concerns, a balanced scorecard may also be used (Figge, 2002).

### **Resource Sustainability and Business Performance**

***Sustainability and Competitiveness:*** Stahel (2001), states that the drivers of sustainability on a company level will be found increasingly in the use of technology to create returns, rather than in the pursuit of environmental thinking. This way the interest of the economic community will be sufficient to cross what has been determined as the first borderline to a

sustainable economy: shifting from protecting the environment to increasing economic competitiveness. The goal is to break the link between corporate success and resource consumption in order to create more wealth with fewer resources. Stahel emphasizes the role of the service economy in this transfer, since the de-materialization of production processes is a step in the right direction towards a sustainable economy, but not enough to guarantee sustainability in the long run. He also points to life-cycle assessment (LCA) and innovation in product development as the key tools, and encourages the move away from regulatory control and command in order to encourage a more proactive approach to product development. Stahel claims that sufficiency solutions are of interest only to economic actors in a service economy where they enable an income without resource consumption, hence by using eco-efficient means. Here, the legal framework should in Stahel's opinion provide conditions that promote performance and results instead of means. This can be stated as an overly simplistic way presenting the problem, overlooking the large potential for use of loopholes in the law, and therefore can be considered ambiguous. This is further demonstrated when Stahel adds that the key tools of the consumer side are the sustainability values that are appealing to people who will apply them only to increase their own quality of life. Cynically seen, this might lead to a way of thinking that follows the norms of ethical egoism instead of utilitarianism; consumers not caring about knowing how goods or services are produced beyond their own actions, i.e. how much and what they buy, and how they use and recycle these goods from the purchase onwards. Even if social innovation is plentiful, the needed emphasis on economic innovation might be neglected.

**Resource Sustainability and Eco-efficiency:** The concept of eco-efficiency comprises the mutual goal of corporations, governments and social communities to enhance their activities in the kind of way that reduces inputs and negative environmental effects, such as waste production and pollution, and at the same time increases the economic value of goods, services and entire supply chains. In other words, it points to improved efficiency from both ecological and economical point of view. The concept has been shaped to its current form mostly by the World Business Council for Sustainable Development (WBCSD) which promotes it through its Eco-efficiency Metrics & Reporting and the European Eco-efficiency Initiative (EEEI) programs. As defined in the first eco-efficiency workshop held by WBCSD in 1993, Eco-efficiency is achieved by the delivery of competitively priced goods and services that satisfy human needs and bring quality of life, while progressively reducing ecological impacts and resource intensity throughout the life-cycle to a level at least in line with the earth's estimated carrying capacity (WBCSD, 2000)

Other ways of defining eco-efficiency have been presented by business practitioners as "creating more value with less impact" or "doing more with less", or even "more welfare from less nature" by the European Environment Agency (EEA), when applied on the macro-level of economic and sustainable development. On the business side, eco-efficiency is concerned with three broad objectives:

1. *Reducing the consumption of resources:* This includes minimizing the use of energy, materials, water and land, enhancing recyclability and product durability, and closing material loops.
2. *Reducing the impact on nature:* This includes minimizing air emissions, water discharges, waste disposal and the dispersion of toxic substances, as well as fostering the sustainable use of renewable resources.
3. *Increasing product or service value:* This means providing more benefits to customers through product functionality, flexibility and modularity, providing additional services and focusing on selling the functional needs that customers actually want. This raises

the possibility of the customer receiving the same functional need with fewer materials and less resources. Within companies, eco-efficiency can be put into practice through various operational and commercial strategies. The main shift behind all the operational strategies involves the transition from traditional supply chain structure, which is focused on efficient forward-oriented flows and high throughput, to one that includes channels for reverse flows of goods and for re-integrating products, parts and materials back into the forward channel, and increased resource productivity.

This transition has been depicted by Stahel (2001) as moving from the linear structure of the "river" economy to one that closes the material loops and forms a self-replenishing "lake" economy. Incorporating the same basic idea as the closed-loop supply chain models, which have been presented in relation to various other concepts (Srivastava, 2008), also this one tackles the issue of reducing overall resource consumption through re-use, repair, refurbishing and remanufacturing of goods.

### **Factors Militating against Resource Sustainability**

Rao and Brownhill, (2001), noted that factors militating against resource sustainability are as follows:

- I. The real or perceived financial cost and risks which include the problem of the upfront cost and the ongoing costs usually coming from separate budgets.
- II. The lack of information and training of designers, contractors, and clients.
- III. Lack of demand from the clients.
- V. Regulation

All these factors are more of organizational related issues. An organization is subjected to both internal and external factors which influence the organizational environment and how the management of such organizations responds to it. Internal factors relate to the strength within the organization system which indicates its readiness and capability to pursue or practice sustainable organization system. This indicates its readiness and capability to pursue or practice sustainable by employing sustainable materials and processes. The challenges within organizations according to Abidin (2010) are:

- I. Lack of awareness and knowledge
- II. Size of developers organization
- III. Interest, direction and commitment of top management
- IV. Cost versus economic viability
- V. Target buyers
- VI. Passive culture

External challenges refer to challenges not within the organization, beyond the direct control of the organizations that impose certain restrictions or limitation towards the development of sustainable material usage implementation in the organization. Abidin (2010) highlighted the challenges as:

- I. Local authority's and government's involvement
- II. Public interest and Buyers demand
- III. Status quo in rules and regulations
- IV. Availability of green materials
- V. Learning period
- VI. Associating sustainable concept with luxury living

### **METHODOLOGY**

The research approach for this study is the survey research design. The population for the

study consists of all middle-level and senior employees of Intafact Beverages Onitsha plant which is given as 236. The major instrument for data collection was a five point likert scale questionnaire titled raw material sustainability and organizational performance questionnaire (RMSandOPQ). Face to face approach was adopted in administering the questionnaires, hence; the researchers gave the questionnaire to the respondents physically and retrieve the completed copies of questionnaire using the same approach. The statistical tool used for data analysis in this study is the Pearson Product Moment Coefficient (PPMC) using the 20.0 version of statistical package for social sciences (SPSS)

## RESULTS AND DISCUSSIONS

### Test of Hypotheses

The hypotheses stated in this work were tested using the PPMC statistical method with the aid of 20.0 versions of SPSS

### Hypothesis One

**H<sub>01</sub>:** resource recycling does not have significant effect on the competitiveness of firms

From the output of the SPSS software analysis, we have the following outputs

**Model Summary**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1901.796	1	1901.796	66.091	.000 <sup>b</sup>
	Residual	230.204	8	28.775		
	Total	2132.000	9			

a. Dependent Variable: CoF

b. Predictors: (Constant), RR

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.949	2.422		1.218	.258
	RR	.827	.102	.944	8.130	.000

a. Dependent Variable: CoF

Since the p-value or sig. (0.000) < the alpha level (0.05), we reject the null hypothesis and conclude that resource recycling has significant effect on the competitiveness of beverage companies in Nigeria

### Hypothesis Two

**H<sub>02</sub>:** Resource re-use does not have significant effect on the eco-efficiency of the organization

From the output of the SPSS software analysis, we have the following output;

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.870 <sup>a</sup>	.757	.726	6.36784	.757	24.859	1	8	.001

a. Predictors: (Constant), RR

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1008.005	1	1008.005	24.859	.001 <sup>b</sup>
	Residual	324.395	8	40.549		
	Total	1332.400	9			

a. Dependent Variable: EE

b. Predictors: (Constant), RR

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.119	2.610		3.110	.014
	RR	.499	.100	.870	4.986	.001

a. Dependent Variable: EE

Since the p-value or sig. (0.001) < the alpha level (0.05), we reject the null hypothesis and conclude that resource re-use has significant effect on the eco-efficiency of beverage firms in Nigeria

**FINDINGS**

- i. The outcome of hypothesis one shows a p-value or sig. (0.000) which is < the alpha level (0.05), it was found that resource recycling has significant effect on the competitiveness of beverage companies in Nigeria
- ii. The p-value or sig. for hypothesis two showed (0.001) which is < the alpha level (0.05), it was found that resource re-use has significant effect on the eco-efficiency of beverage firms in Nigeria

**CONCLUSION**

In Nigeria today, the state of the economy calls for new strategic leaps by organizations. Part of strategic options been explored by organizations is to pursue efficiency in production in order to enhance their performance, hence this study. Having analyzed empirical data generated from a well structured, valid and consistent questionnaire, the study concludes that the performance of manufacturing firms especially those in the beverage sector can significantly be influenced by raw material sustainability practices. Moreover, the strength of the effect of resource sustainability appears to be felt more on their competitiveness as it entrenches efficiency in the production process while cutting both material and regulatory cost. Furthermore, it was concluded that the effects of resource sustainability is a significant vehicle to attaining an eco-friendly operations especially for firms in the beverage sector.

**RECOMMENDATIONS**

In line with the findings and conclusions above, the following recommendations were made by the study;

- (1) For organizations to compete favorably, it is of importance that they consciously develop a raw sustainability programme and integrate such in their operational

strategy

- (2) Through backward integration, organizations can enjoy both cost and time efficiency in their raw material resource supply. This is a very significant impetus for the competitiveness of firms in the beverage sector.
- (3) To boost their eco-efficiency and reduce regulatory cost, firms in the beverage sector should integrate resource sustainability into their overall value chain.

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# An Overview Of Most Used Foreign Direct Investment Theories

**Clement Oppong**

Christian Service University College- Kumasi Ghana

## ABSTRACT

Due to the importance attached to the flow of Foreign Direct Investment (FDI) as its roles toward global integration cannot be neglected, different theories have been forwarded to explain the reasons and movement of foreign capital across borders. Despite the existence of numerous FDI theories, there is no single theory which could serve as “one in all” theory, therefore this paper was theoretically purported to unveil those theories that are most always used to explain the movement of foreign direct investment.

**Keywords:** Foreign Direct Investment, Internalization, Multinational Corporations

**JEL Classifications:** F21, E60, F36

## INTRODUCTION

Despite few doubts on the capabilities of FDI as its impacts on the recipient economies are not convincingly established (Alfaro, 2013; Alfaro et al, 2004; Borensztein & Gregorio et al, 1998), different theoretical literatures exist to create public awareness of its (FDI) needs as one of the major forces behind globalization (Cotton & Vijaya, 2001). There are many theories which double serve as significant steps toward the development of a systematic framework for emergence and attempt to explain the determinants of FDI (Demirhan & Masca, 2008). However, the ability of each to serve as ‘one in all’ theory to explain all kinds of FDI either at the outward or inward FDI at the firm, industry and country level has been accordingly questioned by various scholars (Agarwal, 1980). Even though an individual firms can equally have a considerable number of motivations to undertake FDI (Jadhav, 2012).

Right after the World War II where globalization accordingly emerged, FDI really became the focal point and attraction. The unprecedented importance attached to the Multinational Corporation (MNCs) and Foreign Investment between 1950s and 1960s especially, FDI flows from the world’s leading countries like United States to European countries actually gave the grounds for most researchers to look into the issue of MNCs (Nayak and Choudhury, 2014). Corollary, several theories have been formulated to explain the global movement of capital as this paper briefly reviews most of the theories that are widely used to illuminate such international movement of capital.

To start with, theories of capital market and portfolio investments were initially used to explain the origination of FDI as direct investments were originally only international capital movement (Kindleberger, 1969). Before 1950s where FDI flows actually became global issue, FDI was already recognized as a subset embedded in portfolio investment. And as portfolio investment is rooted on the premise of differences in interest rates which suggests that capital tends to flow to areas or locations or regions where highest returns could be accrued, the fundamental differences that exist between portfolio and direct investment as the latter entails controls, has accordingly failed to be addressed (Nayak and Choudhury, 2014). Theoretically, interest rate explaining the rationale behind the flow of capital from one point to another has been criticized as it fails to explain controls that investors are entitled to. Rather, it basically stipulates that investors only consider lending monies abroad when interest rates are found to

be higher in abroad as well as there is no risk or inherent barriers in the way of capital movement (Denisia, 2010). This according to Hymer (1976) does not spell out the logical possibility of that investor to exercise control over institutions into which he or she has committed his or her resources. As there were no reality bases in the earlier theories, several new theories have been formulated to give insights into the reasons for foreign direct investment even though each has its own peculiar shortcomings. As theories kept on unfolding, it therefore becomes difficult to completely talk about all theories that exist to explain the rationale behind any event. Notwithstanding few of these theories that almost always explain why FDI flow have been reviewed in the next section. Though, the attention is not on the international trade but as it plays essential roles in the flow of FDI, as there are number of theories that also exist to explain the emergence of trade between countries it is imperative to distinguish such theories of international trade from that of FDI. For instance; classical trade theory according to Ricardo (1817) and Smith (1776) suggests that, countries benefit if much resources are committed into the production of goods and services in which they have much advantage. Similarly, factor proportion theory as stated by Hecksher and Ohlin (1933) suggests that countries specialize in the production of goods and services that effectively utilize most of their resources. Lastly and probably the famous theory of international trade; production life cycle theory as developed by Vernon in 1966 dwelled on the belief that transnational companies manufacture innovative products basically for local consumption while surpluses are accordingly exported in order to serve the foreign markets. Though equally good as they (theories of international trade) explain reasons for international trade, other theories have brought into books the limitations of international trade theories under FDI preface. Selection of these theories include: gravity model, market imperfection theory, international production or eclectic theory of Dunning, internalization theory and exchange rate theory.

### **Gravity model of FDI**

Originally, the originators of this model based their assumption on the Newton's rule of gravity as it applied the gravity model of international trade to FDI. The developers of this model opined that, in a two-country world, countries size (for instance; GDP, GDP per capita) is positively associated with FDI or trade between them and inversely associated with the physical distance between such countries. Logically, gravity model has been and continues to be a strong basis for several studies in international trade even though unlike the distance which has not been verified, the proposition on gravity model with respect to size and FDI association has been widely confirmed by data (Chakrabarti, 2001).

### **Market imperfections Theory**

During his doctoral dissertation, Hymmer (1970) established FDI theory approach, one which was first regarded to explain international production in an imperfect market. Basically, the central idea of market imperfection theory of Hymer was that as firms are into the production of the same products and accordingly enjoy the same level of production factors accessibility in the host countries, foreign firms or investors seek available market opportunities as a possible means to capitalize on capabilities not shared by relative competitors in foreign countries. This suggests that foreign firms compete with domestic firms (Nayak and Choudhury, 2014). The reality of this theory suggests that firms gain unique competitive advantages and to varying degrees due to imperfections in markets firm are keen to take advantage of their market power in order to reap good profit through investing in abroad. However, theorists such as Robock and Simmond (1983) have criticized this theory by arguing that "possessing firm-specific advantages does not necessarily mean investment abroad as firms might very well exploit their advantages through exporting or licensing" as several factors (example- local government policy, local market conditions and size, the reaction of rival firms and riskiness of investment)



as well influence the choice between FDI and licensing (Nayak and Choudhury, 2014). This theory accordingly fails to explain why foreign production is largely considered as the most favourable means of harnessing foreign firm's advantages as well as where and when FDI actually takes place (Morgan and Katsikeas, 1997; Nayak and Choudhury, 2014). In an attempt to address these issues peculiar to market imperfection theory, Dunning (1980) and Fayerweather (1982) as well developed what is usually described in literature as international production or eclectic theory.

### **International production or Eclectic theory**

Gradually, as countries are finding themselves to be intrinsically part of the global economy through interdependency of countries, the concept of global village and spaceship which reflects inherently the international status of the contemporary marketplace, international production or eclectic theory sees the contemporary marketplace otherwise. Even though, this theory does not refute the fact that contemporary marketplace has gain international status. It rather argued that the propensity of firms to commence foreign production strictly depends on peculiar attractive factors of home countries which are compared to inherent resource implications and advantages when relocating or establishing a subsidiary in a different country (Dunning, 1980; Fayerweather, 1982) as cited in Morgan and Katsikeas (1997). This theory clearly depicts that not only differences in countries' resources and firms' advantages play significant roles in instigating overseas investment activities, but also the actions of foreign governments actually determines the attractiveness and conditions of entry. To this, Dunning added by suggesting that firms engage in FDI if only the following conditions are fulfilled: a). the foreign firm will have ownership advantages "O". Thus, an advantage solely given to foreign investor with respect to its brand name and acquisition market share (Gastanaga, et al., 1998). b). location advantage "L". This condition plays an important role in determining which country really plays host to the firm's activities. c). Internalization advantage "I". Unlike the first two conditions, this advantage offered to the investor usually depends on the investor's own behavioural characteristics, and intentions which are less influence by host countries and can only be influenced through the provision of better and stable economic institutions, tax rates as well as a very functioning bureaucratic and justice system (Denisia, 2010; Nayak and Choudhury, 2014). Interestingly, Dunning (1980) stated that all these conditions ought to be satisfied before FDI actually occurs.

### **Internalization theory**

A related aspect of Dunning's eclectic theory of FDI dwells on the notion of internalization. And due to its sensitivity, internalization has been extensively researched by different scholars such as Buckley (1982, 1988), Buckley and Casson (1976, 1985), Henmart (1982) and Hymer (1976). Commenting on this theory, Hymer identified two main drivers of FDI to be \_ the removal of competition\_ and the possession of advantages in particular activities. Probably, it was based on these drivers that the notion of internalization was coined as it stipulates that firms aspire to enhance their internal markets as soon as the cost of business activities within the firm becomes minimal (Morgan and Katsikeas, 1997).

Buckley and Casson who were the founders of internalization theory extended the original notion of this theory from Hymer by stating that, companies organize their own internal activities in order to gain specific advantages (Buckley and Casson 1976, 1985). They (Buckley and Casson) further expressed their theory of internalization based on three specifications namely:

- i. In imperfect market, firms or institutions maximize profit.
- ii. Firms bypass intermediate products that are imperfect in market by creating internal markets.

iii. Proliferation of MNCs is as a result of internalization of markets across the world.

Again, according to Buckley and Casson (1976), internalization resulted from the existence of five main types of market imperfections:

- i. Longer time is needed for the co-ordination of resources
- ii. Firms need price discrimination to efficiently exploit market.
- iii. Unstable bargaining emerges out of bilateral monopoly.
- iv. Buyers find it difficult to estimate accurately the price of goods on sale
- v. The involvement of government in international markets creates avenue for transfer pricing.

Hymer complemented this theory by stating that FDI is basically "a firm-level strategy decision rather than a capital market financial decision" (Hymer, 1976).

### **Exchange rate theory**

The performance of countries' currencies has been since being a major driven force behind FDI inflow. Due to its (currency performance) driven ability, theorists have investigated into the extent at which the strength of host countries' currencies could serve as a motivating factor for FDI flows. For instance, based on the strength of countries' currencies, Aliber (1970) made the earliest attempt to explain countries' FDI. In his theory considering the discrepancies in the host and source countries' currencies, he noted that countries with weaker currencies are always almost likely to attract more FDI than their counterparts with stronger currencies irrespective of their regions. This assertion was probably meant to take advantage of the discrepancies in the countries market capitalization rates. Even though earlier theory of Aliber was on several occasions tested to proof its validity and reliability, notwithstanding, it remains the theory that has been seriously criticized. Despite the fact that his theory claimed to provide accurate explanation for direct investment mostly in advanced countries, according to Lall (1976), this theory of Aliber seem irrelevant especially in less advanced countries with highly imperfect capital market. Furthermore, the theory failed to provide insightful explanation for investment between developed countries that have parallel strength of currencies (Nayak and Choudhury, 2014). Also, the investment of less advanced or developed countries in the highly developed countries were virtually left in isolation (Nayak and Choudhury, 2014).

Commenting on the possibilities of exchange rate to determine FDI to countries, Cushman (1988) revealed that while real exchange rate boosted FDI made by US\$ during the period of study, appreciation in foreign currency accordingly contrasted FDI flows in USA by a margin of 25%.

### **CONCLUSION**

In summary, as it could be seen from the ongoing discussion of FDI theories, different theories exist to provide meaningful explanations as to where and when FDI will flow from and to. And since there is no single theory that could serve as "one in all" theory, several policy implications could be bestowed onto institutions' authorities and government officials. For instance, possible measures should be devised to attract maximum FDI into their respective institutions and countries at large taking into consideration the theories discussed above as they possess the equal ability to determine the location of foreign investments.

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# The impact of economic crisis on holidays of young people

**Xanthippi Chapsa**

Lecturer, Department of Business Administration,  
TEI of Central Macedonia, Serres, Greece

**Persefoni Polychronidou**

Assistant Professor, Department of Accounting and Finance,  
TEI of Central Macedonia, Serres, Greece

## ABSTRACT

**Purpose** - This work was carried out to investigate the effects of the economic crisis in leisure travel and holidays for young people in Central Macedonia. **Methodology** - Semi-structured questionnaire was used, combining closed and partially closed questions.

**Approach** - We examined the way in which gender, family situation, and the employment situation affect the travel frequency, the amount spent on travel, the choice and the characteristics of the tourist destination, e.t.c.. **Findings** - The results show that the answers regarding the travel frequency, the amounts spent on travel, the way in which young people prefer to book their travel, the transportation means, the people they prefer to travel with, the needed time to organize the travel, but also the preferences of the touristic destination and its nightlife, significantly differ between the two genders. Also, marital status seems to be an important differentiating factor of the amounts spent, and preferences regarding the mode of transport, type of accommodation and nightlife.

**Keywords:** tourism, young people, statistical analysis

**Classification codes:** Z39

## INTRODUCTION

Tourism is one of the main pillars of the Greek economy over time. It is a sector that draws the interest of investors and it could play an important role to the growth of Greek economy (Eeckels, Filis, Leon, 2012). In times of economic crisis, there is an increase in Tourism industry (Foundation for Economic and Industrial Research -IOBE, 2016). In 2015, Greece welcomed almost 23.6 million tourists from abroad and received nearly 13.7 billion euro; the direct contribution of tourism to the Gross Domestic Product (GDP) was 10.0% (INSETE, 2017). Thus, tourism is almost exclusively an export activity, since almost ninety percent of tourism revenues come from abroad. Regarding domestic tourism, a decrease of more than sixty percent has occurred in 2015, since less domestic tourists stay for more than one night and spent less money (Hellenic Statistical Authority-ELSTAT, 2016).

Tourism has been affected by the economic crisis, but has relatively quickly recovered (Galanos, 2013; Du, Kamakura, 2012; Guduraš, 2014). Predictions for the year 2027 show that tourism will support 1,273,000 jobs and Greece will welcome 39,920,000 visitors from abroad (World travel and tourism council, 2017). Similarly, domestic travel has been affected by the economic crisis (Hellenic Statistical Authority- ELSTAT, 2016; INSETE, 2017). Expenditures in business and leisure trips by the Greeks generated 37.5% of direct travel and tourism GDP in 2016 compared with 62.5% for foreign tourists, while in 2017, the corresponding numbers are expected to grow by 2.1% and 10.0%, relatively (World travel and tourism council, 2017).

It must be noted that Greece is mainly a summer destination for holidays and efforts are made to expand tourism both during the year and the alternative kinds of tourism (Organisation for Economic Co-operation and Development-OECD, nd). However, Chung (2009) has concluded in his research that seasonality does not have always negative effects on destinations. In the report of Dr. Andreadis (European Committee of Regions, 2014) the development of touristic products is indicated, as well as the trend to further enable alternative tourism. Tsartas (2003) studied tourism development, Iakovidou et al. (2002) studied the development of rural tourism in Greece. Tsourgiannis et al. (2015) studied the preferences and the profile of tourists in a specific region of Greece. Papatheodorou and Arvanitis (2014) aimed to study the impact of the economic crisis of Greek tourism, emphasizing on domestic tourism over the period 2005-2012. They concluded that areas specialized in domestic tourism have shown decrease in tourism population comparing to tourism destinations specialized in foreign tourists.

Thus, it is of crucial importance to study the preference of domestic tourists. In our paper we study the effects of the economic crisis in leisure travel and holidays for young people in Central Macedonia. The goal of this paper is to examine the way in which demographic characteristics affect the travel preferences of young Greeks as tourists.

### **RESEARCH METHOD AND THE PROFILE OF RESPONDENTS**

A structured questionnaire was used as the research instrument. It consisted of five major sections, incorporating questions regarding sociodemographic characteristics, personal values, and trip preferences of travelers.

The questionnaire was pilot-tested to determine if the questions could be well understood by respondents. The actual full-scale survey was conducted in the period of April to June 2017. As the main purpose of the research was the impact of the current economic crisis on leisure travel and holiday of young people, and because of time and cost constraints, the convenience sampling procedure was employed. Potential respondents were intercepted in Technological Institute of Central Macedonia. At the end of the survey period, 200 questionnaires were collected. The profiles of the respondents are presented in Table 1.

The sample consists of 118 men and 82 women (59% and 41%, respectively). Almost one out of three (30.0% and 28.0%) of the respondents belong to the "18-19" and "more than 23" age group. A percentage of 26.0% and 16.0% belong to the "20-21" and "22-23" age groups, respectively. As it concerns the two genders, the majority of women (51.2%) belong to the "20-21" age group, while the majority of men (40.7%) are "18-19" years old. As it was expected, there was significantly higher percentage of single persons (77.0%) compared to married (23.0%). Regarding the "working status", one out of three respondents (32.0%) of the full sample is working, while across the two genders, the respective percentage is 40.7% for men and only 19.5% for women.

Concerning vacation destination, gender does not appear as a significant differentiating factor. In fact, almost one out of two respondents marginally prefers "Greece" comparatively to "Abroad" (52% and 48%, respectively). A slightly higher percentage of males (52.5%) compared to females (51.2%) would choose to take a vacation in Greece with men appearing to prefer travelling by "Bus" (39.0%) and women by train (31.7%). Spring appears as the preferred season, principally for women (48.8%). Finally, the majority (57%) of the respondents has not been on vacation in the last two years, while, the respective percentage was higher for women (63%) compared to men (53%).

**Table 1. Profile of respondents**

	Male	Female	Total sample
<u>Age group</u>	%	%	%
18-19	40.7	14.6	30.0
20-21	8.5	51.2	26.0
21-22	23.7	4.9	16.0
>23	27.1	29.3	28.0
<u>Marital status</u>			
Married	28.8	14.6	23.0
Single	71.2	85.4	77.0
<u>Working status</u>			
Yes	40.7	19.5	32.0
No	59.3	80.5	68.0
<u>Do you like to go on vacation*</u>			
Yes	83.1	73.2	79.0
No	16.9	26.8	21.0
<u>Preferred destination</u>			
Greece	52.5	51.2	52.0
Abroad	47.5	48.8	48.0
<u>Means of transport</u>			
Bus	39.0	17.1	30.0
Train	10.2	31.7	19.0
Airplane	25.4	22.0	24.0
Ship	8.5	12.2	10.0
Car	16.9	17.1	17.0
<u>Preferred season</u>			
Summer	23.7	19.5	22.0
Spring	33.9	48.8	40.0
Autumn	25.4	17.1	22.0
Winter	16.9	14.6	16.0
<u>Vacation in the last two years</u>			
Yes	47.5	36.6	43.0
No	52.5	63.4	57.0
Total			
Count	118	82	200
%	59.0	41.0	100%

## EMPIRICAL RESULTS

In this section, the main findings of this study are discussed. Apart from descriptive statistics, we use Chi-Square Tests to examine whether the demographic characteristics of the respondents are significant differentiating factors for the preferences, personal values and the decisions concerning leisure trips and holidays of young people.

### Gender and vacation preferences

The 35.6% of males prefer to take vacations with “Friends” or with their “Companion”, while the majority of females (61%) prefer to take vacation with their “Family” (Table 2). This finding is also supported by the Chi-Square test<sup>1</sup>.

<sup>1</sup> Since the significance value of the Chi-square statistic is lower than 0.01, the hypothesis of independence is rejected at the 0.01 level. Thus, “holidays companion” and “gender” are related, meaning that the frequency of “the persons which the respondents prefer to take vacation with”, differ significantly between two genders.

**Table 2. Gender \* You prefer to take a vacation with. Crosstabulation**

		You prefer to take a vacation with:				Total	
		Friends	Family	Companion	Alone		
Gender	Male	Count	42	24	42	10	118
		%	35.6%	20.3%	35.6%	8.5%	100.0%
	Female	Count	14	50	16	2	82
		%	17.1%	61.0%	19.5%	2.4%	100.0%
Total		Count	56	74	58	12	200
		%	28.0%	37.0%	29.0%	6.0%	100.0%
		Chi-Square Test					
		Value	p-value				
Pearson Chi-Square		34.770	.000				
N of Valid Cases		200					

Answers of the respondents regarding the type of tourist destination don't differ significantly (around 30%) (Table 3). However, the gender appears as a significant differentiating factor (p-value < .01). More specifically, although the full sample consists of an almost equal percentage of males and females (35.6% and 31.7%) preferring "Non popular tourist destination", women seem to prefer places with only "Some tourism" (56.1%), while men prefer "Popular tourist destination" (42.4%).

**Table 3. Gender \* What type of tourist destination do you choose on your vacation? Crosstabulation**

		What type of tourist destination do you choose on your vacation?				Total
		Non popular tourist destination	Some tourism	Popular tourist destination		
Gender	Male	Count	42	26	50	118
		%	35.6%	22.0%	42.4%	100.0%
	Female	Count	26	46	10	82
		%	31.7%	56.1%	12.2%	100.0%
Total		Count	68	72	60	200
		%	34.0%	36.0%	30.0%	100.0%
		Chi-Square Test				
		Value	p-value			
Pearson Chi-Square		30.495	.000			
N of Valid Cases		200				

Similarly, more than fifty percent (54.2%) of men prefer tourist destination with "Bustling nightlife" (Table 4), with the respective percentage (29.3%) for women to be significantly lower (p-value < .05).



**Table 4. Gender \* Would you choose a tourist destination with bustling nightlife?**

		<b>Crosstabulation</b>			
		Would you choose a tourist destination with bustling nightlife?			
		Yes	No	Total	
Gender	Male	Count	64	54	118
		%	54.2%	45.8%	100.0%
	Female	Count	24	58	82
		%	29.3%	70.7%	100.0%
Total		Count	88	112	200
		%	44.0%	56.0%	100.0%
		Chi-Square Tests			
		Value	p-value		
Pearson Chi-Square		12.241	.000		
Fisher's Exact Test			.001		
N of Valid Cases		200			

During the recent crisis, more than nine out of ten (or 92%) of the respondents spend less than 300 euro on their holiday (Table 5), with men appearing to spend more comparatively to women ( $p$ -value < .01). More specifically, 59.3% of them spend "100-300" euro, while the respective percentage for women is significantly lower (39%).

**Table 5. Gender \* What amount do you spend on your holiday now?**

		<b>Crosstabulation</b>					
		What amount do you spend on your holiday now?					
		<100	100-300	301-500	>500	Total	
Gender	Male	Count	40	70	8	0	118
		%	33.9%	59.3%	6.8%	0.0%	100.0%
	Female	Count	42	32	2	6	82
		%	51.2%	39.0%	.4%	7.3%	100.0%
Total		Count	82	102	10	6	200
		%	41.0%	51.0%	5.0%	3.0%	100.0%
		Chi-Square Test					
		Value	p-value				
Pearson Chi-Square		17,906	.000				
N of Valid Cases		200					

Regarding the different types of accommodation, the preferences of the aggregate sample appear to be similar (around 25%). However, about three out of ten men prefer "Free camping" (30.5%) while women would choose "Organized camping" (29.3%) (Table 6). As it concerns the other types of accommodation, the preferences of the two genders present only marginal differences ( $p$ -value > .01).

**Table 6. Gender \* Where do you prefer to stay on vacation?  
Crosstabulation**

		Where do you prefer to stay on vacation?					
			Free camping	Organized camping	Cheap hotel	Expensive hotel	Total
Gender	Male	Count	36	24	30	28	118
		%	30.5%	20.3%	25.4%	23.7%	100.0%
	Female	Count	16	24	20	22	82
		%	19.5%	29.3%	24.4%	26.8%	100.0%
Total		Count	52	48	50	50	200
		%	26.0%	24.0%	25.0%	25.0%	100.0%
		Chi-Square Test					
			Value	p-value			
Pearson Chi-Square			4.064	.255			
N of Valid Cases			200				

Only 18% of the respondents prefer booking their holidays “On the spot”. Contrary, the majority (51.0%) of the aggregate sample and principally women (about 66%), prefer booking by “Internet” (Table 7). Once again, the gender seems to be a significant differentiating factor for the preferences concerning booking (p-value < .01).

**Table 7. Gender \* Which way do you prefer to book you holidays?  
Crosstabulation**

		Which way do you prefer to book you holidays?				
			Tourist agency	Internet	On the spot	Total
Gender	Male	Count	46	48	24	118
		%	39.0%	40.7%	20.3%	100.0%
	Female	Count	16	54	12	82
		%	19.5%	65.9%	14.6%	100.0%
Total		Count	62	102	36	200
		%	31.0%	51.0%	18.0%	100.0%
		Chi-Square Tests				
			Value	p-value		
Pearson Chi-Square			12.804	.002		
N of Valid Cases			200			

Finally, almost eight out of ten (or 78%) of the respondents plan their vacation at least “One month in advance”, and close to 20% plan their vacation at the “Last minute”. Answers differ between two genders (p-value = .000), with the 42.4% of males planning their vacation “Many months in advance” and the 61% of females “A month in advance” (Table 8).

**Table 8. Gender \* When do you plan your vacation?**  
Crosstabulation

			When do you plan your vacation?				
			Many months in advance	A month in advance	Some days in advance	Last minute	Total
Gender	Male	Count	50	30	6	32	118
		%	42.4%	25.4%	5.1%	27.1%	100.0%
	Female	Count	26	50	0	6	82
		%	31.7%	61.0%	0.0%	7.3%	100.0%
Total	Count	76	80	6	38	200	
	%	38.0%	40.0%	3.0%	19.0%	100.0%	
			Chi-Square Test				
			Value	p-value			
Pearson Chi-Square			30.889	.000			
N of Valid Cases			200				

### Marital status and vacation preferences

Marital status seems to play a significant role for the accommodation preferences ( $p < .01$ ). More than five out of ten (or 52.2%) married respondents prefer “Free camping” and only 8.7% of them prefer “Expensive hotels” (Table 9), while the respective percentages for the single respondents differ significantly (18.2% and 29.9%).

**Table 9. Marital status \* Where do you prefer to stay on vacation?**  
Crosstabulation

			Where do you prefer to stay on vacation?				
			Free camping	Organized camping	Cheap hotel	Expensive hotel	Total
Marital status	Married	Count	24	10	8	4	46
		%	52.2%	21.7%	17.4%	8.7%	100.0%
	Single	Count	28	38	42	46	154
		%	18.2%	24.7%	27.3%	29.9%	100.0%
Total	Count	52	48	50	50	200	
	%	26.0%	24.0%	25.0%	25.0%	100.0%	
			Chi-Square Test				
			Value	p-value			
Pearson Chi-Square			23.604	.000			
N of Valid Cases			200				

Almost 58% of single respondents prefer booking by “Internet” (59.7%), while married respondents prefer “Tourist agency” (56.5%) (see, Table 10). Once again, marital status seems to consist a crucial characteristic affecting preferences ( $p\text{-value}=.000$ ).

**Table 10. Marital status \* Which way do you prefer to book you holidays Crosstabulation**

		Which way do you prefer to book you holidays				Total
		Tourist agency	Internet	On the spot		
Marital status	Married	Count	26	10	10	46
		%	56.5%	21.7%	21.7%	100.0%
	Single	Count	36	92	26	154
		%	23.4%	59.7%	16.9%	100.0%
Total		Count	62	102	36	200
		%	31.0%	51.0%	18.0%	100.0%
		Chi-Square Test				
		Value	p-value			
Pearson Chi-Square		23.046	.000			
N of Valid Cases		200				

In contrast, marital status does not seem to affect significantly preferences concerning preferred season, travelling in “Greece” or “Abroad”, tourist destination, time of planning vacation and finally, money spent on holiday before crisis (p-value > .10).

**Working status and vacation preferences**

As it regards the effect of working status on vacation preferences, we found that it affects significantly (p-value < .10) tourist destination (more or less popular), accommodation, and preferences about nightlife. More specifically, almost five out of ten (or 46.9%) of working respondents prefer tourist destination with “Some tourism”, while non-working respondents prefer “Non-popular tourist destinations” (Table 11).

**Table 11. Working status \* What type of tourist destination do you choose on your vacation? Crosstabulation**

		What type of tourist destination do you choose on your vacation?				Total
		Non popular tourist destination	Some tourism	Popular tourist destination		
Working status	Yes	Count	18	30	16	64
		%	28.1%	46.9%	25.0%	100.0%
	No	Count	50	42	44	136
		%	36.8%	30.9%	32.4%	100.0%
Total		Count	68	72	60	200
		%	34.0%	36.0%	30.0%	100.0%
		Chi-Square Test				
		Value	p-value			
Pearson Chi-Square		4.832	.089			
N of Valid Cases		200				

Also, the 37.5% of working people would choose a “Free camping” to stay on vacation, while non-working respondents prefer “Cheap” or “Expensive” hotels.

**Table 12. Working status \* Where do you prefer to stay on vacation?**

			Where do you prefer to stay on vacation?				
			Free camping	Organized camping	Cheap hotel	Expensive hotel	Total
Working status	Yes	Count	24	18	12	10	64
		%	37.5%	28.1%	18.8%	15.6%	100.0%
	No	Count	28	38	42	40	136
		%	20.6%	22.1%	27.3%	29.4%	100.0%
Total	Count	52	48	50	50	200	
	%	26.0%	24.0%	25.0%	25.0%	100.0%	
			Chi-Square Test				
			Value	p-value			
Pearson Chi-Square			10.234	.017			
N of Valid Cases			200				

Finally, working status seems to affect significantly preferences about nightlife. The majority (or 62.5%) of working people prefer “A tourist destination with bustling nightlife”, while the respective percentage for the non-working respondents is only 35.3%.

**Table 13. Working status \* Would you choose a tourist destination with bustling nightlife?**

			Would you choose a tourist destination with bustling nightlife?		
			Yes	No	Total
Are you working	Yes	Count	40	24	64
		%	62.5%	37.5%	100.0%
	No	Count	48	88	136
		%	35.3%	64.7%	100.0%
Total	Count	88	112	200	
	%	44.0%	56.0%	100.0%	
			Chi-Square Tests		
			Value	p-value	
Pearson Chi-Square			13.073	.000	
Fisher's Exact Test				.000	
N of Valid Cases			200		

Working status appears as a factor affecting time and money spent on vacation ( $p$ -value  $< .10$ ). In contrast, working status does not appear as a differentiating factor for the preferred season or means of transport used on leisure trips, taking a vacation in “Greece” or “Abroad”, the companion with the respondents choose to take their vacation with, and the time in advance they plan their vacation.

### The effect of crisis on vacation preferences

Of great interest are the results appearing in Tables 11 and 12. Before financial crisis, 57.6% of the respondents used to spend “Two weeks” on holidays and only 23.2% “A week”. In the period of recent crisis more than five out of ten (or 50.5%) spend only “One week” on holidays. Furthermore, before the crisis 15.2% of the sample used to spend “Three weeks”, while the respective percentage during the crisis is significantly lower (5.1%) (Table14).

**Table 14. How long did you spend, on your holidays a year, before the financial crisis and during the crisis??**

		Before financial crisis		During financial crisis	
		Valid	Cumulative	Valid	Cumulative
		Percent	Percent	Percent	Percent
Valid	A week	23.2	23.2	50.5	50.5
	Two weeks	57.6	80.8	43.4	93.9
	Three weeks	15.2	96.0	5.1	99.0
	> Three weeks	4.0	100.0	1.0	100.0
Total		100		100	

Also, the current crisis seems to have affected significantly the money that people spend on their holidays. More specifically, before crisis, only 22% of the respondents used to spend “<100” euro, while 17% used to spend “More than 500” euro. Now the respective percentages are 41% and 3% (Table 15).

**Table 15. How much money did you spend, on your holidays, before the financial crisis and during the crisis?**

		Before the financial crisis		During the financial crisis	
		Percent	Cumulative	Percent	Cumulative
			Percent		Percent
Valid	<100	22.0	22.0	41.0	41.0
	100-300	56.0	78.0	51.0	92.0
	301-500	5.0	83.0	5.0	97.0
	>500	17.0	100.0	3.0	100.0
	Total	100.0			

### CONCLUSIONS

Tourism is one of the main drivers of growth of the Greek economy, over time. The Tourism industry presented an increase in 2015, and Greece welcomed almost 23.6 million tourists from abroad. However in times of economic crisis, tourism seems to be, almost exclusively, an export activity. More specifically, around ninety percent of tourism revenues come from abroad, while domestic tourism, presented a decrease of more than sixty percent in 2015 (Hellenic Statistical Authority-ELSTAT, 2016).

This research effort aimed at investigating in which way socio-demographic characteristics, as gender, marital and working status, as well as the recent economic crisis, affect leisure travel and vacation preferences of young people.

Our empirical results showed that 57% of the respondents have not been on vacation in the last two years. Gender appears as a significant differentiating factor for the preferences concerning the persons with which the respondents prefer to take vacation, type of tourist destination (more or less popular), nightlife, amount spent, way of booking and finally, time of planning holidays.

Respectively, marital status seems to play a significant role for the accommodation preferences and the way of booking holidays, while working status affects tourist destination, accommodation and preferences about nightlife.

Of great interest are the results concerning the time and money that the respondents spent on holidays. More specifically, in the period of recent crisis, five out of ten (or 50.5%) spend only

"One week" on holidays, while, the respective percentage before crisis was only 23.2%. Also, people spend much less money on their holiday. Before crisis 22% of the respondents used to spend "<100" euro, and 17% ">500". Now the respective percentages are 41% and 3%.

This study is only an exploratory attempt to describe the way that different characteristics of young people affect leisure travel and holiday preferences. Several limitations are worth noting. First, the sample was collected on a convenience basis and the sample size was small. Second, statistical analysis was limited to descriptive statistics and Chi-Square tests. Future research should attempt to describe young tourist behavior using a tourist typology, in order to classify the aggregate sample in to distinct segments.

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# Effect of Talent Management On The Success Of Organization Development

**Zaeema Asrar**

HOD & Assistant Professor,  
Department of Commerce, University of Karachi

**Tehseen Azhar**

Senior Lecturer, Department of Management Sciences,  
DHA Suffah University, Karachi

**Mudassir Hussain**

Lecturer, Department of Commerce,  
Benazir Bhutto Shaheed University, Karachi,

## ABSTRACT

This study is done to find the effect of talent management on organization success. The finding of the study is that the effective talent management does result in the success or development of organization. In this study, organization development is divided into two boarder categories, which are positive or negative growth of organization. Positive growth of Organization development was done by recruitment and selection, training and development whereas negative variables are considered employee retention, skill gap and skill shortage. Our study concluded that every employee has some unique talent which differentiates that employee with others which could be resulted in competitive advantage of organization and if that talent would be used for any other position it may cause for discomfort.

## INTRODUCTION

Nobody can argue that talent is most critical source of successful organization. Talent management is very crucial strategy for organization development. Many organizations realized that talent management is a key success of modern organizations. Getting right people at the right place with the right skills and are engaged on the right activities would result into achieving targeted goal of the organization.

The concept talent management is coined by McKinsey & Company, 1997 investigation. McKinney & company exposed the term "war of talent". Later the time book issued by Helen Handfield Jones, and Beth Axelrod. The relationship between human recourse development and organizational effectiveness has been established in the 1970's. During the period of 1970s and 1980s the business function was responsible for employee was called "The Personnel Department". The systems which developed to support of this function were batch payroll systems. The personnel department was a well understand business function. During the period of 1980s and 1990s organizations realized that the HR function was in fact more important and the term "Strategic HR" merged with personnel department. The new concept introduced getting the right people at the right job, training and development of employees, compensation package which includes benefits and serving as a central point of communication for employee health and happiness.

Talent management is fast becoming a critical strategic objective for growing organizations. It is very crucial factor which effect on organization success. The idea of this study is to exploring



which key factors of talent management could be effect on success of organization includes training and development, requirement and selection, skill gap and skill shortage performance evolution, motivation, ability, leadership quality, and area of interest of employee, competency management, training either on-the-job or off-the-job, educating, control retention of employee, workforce environment and culture of organizations.

Basically, the study is beneficial for those organizations that need to improve their workplace environment or maintain their competitive advantage. The productivity and organization culture directly related to their valuable human capital. The effective and talented employee add it the value additional to the productivity of organization and also reduce and save cost of productivity.

The data were collected from various private companies that were growing their performance with the induction of new and young talented employee to balance their competency management on organization environment. The objective of this study is to find out whether the success of organization depends on their human capital or not. Ultimately, the organization should considered talented employees more than other factors because there is no substitution of human capital or skillful employees.

Every employee have some unique talent which differentiate that employees to others and that talent suits for a particular job profile which could be result competitive advantage of organization and that talent would be used for any other position will be cause for discomfort. Transferring organization vision into it goal and fulfillment of required level of competencies should identification of right talent for suitable workplace that is primary aim of organization success.

Many studies showed that organization environment continuously changed so increasing demands on the workplace for better performance required to be multi-skilled employees. As technology continuously changed and breaking down the old rules of thumb methods ,new production technology methods introduced, shirking product life cycles so mostly organization changing their workplace environment according to the current environmental changes and recruiting young and talented and effective skillful employees to maintaining their competitive advantage. The successful organizations are those who adapt itself to environmental changes for long-term and create purposeful management strategy and develop their employee key competencies. Development countries depends their successful organization and organization success depends on employee's competency.

Talented employee is valuable for organization. Mostly organization encourages their employee to stay their organization with the help of employee retention agreement. The outline designed between the employee and organization that the employee will remain at the organization but set the time duration of employee agreement. When organization facing market fluctuation, changing management and merger with other organization so employee agreement to entice talented employee remain at the organization to run their business operation.

The human factor is the key success of organization should be more considered rather than other factors. It is very crucial for organization to maintain effectiveness and efficient of employee workplace performance that could be cause of organization success .once the human capital is acquired so management should be more considered educating and training them according to environment of workplace or organization culture either training for short term and development for long term. Training and educating employee are general factors which

maintain organization competency.

The study is beneficial for those organizations that need to improve their workplace environment or maintain their competitive advantage. The productivity and organization culture directly related to their valuable human capital. The effective and talented employee add it the value additional to the productivity of organization and also reduce and save cost of productivity.

### **LITERATURE REVIEW**

The term “talent management” has become popular in late 90s, but “high potential employees” or simply “high potentials” were considered in management literature much later (i.e. Burke, 1996). Earlier ideas didn’t become popular because of the wrong time they appeared at beginning of the twenty first century which was characterized by high industrialization of China, and the need of remarkably good workers became apparent at that time. Thus, the work of three practitioners (Michaels, Handfield-Jones & Axelrod, 2001) became the research trigger and started to attract more and more awareness. An assortment of aspect of talent management are recruitment, selection, replacement planning ,on-boarding, mentoring, performance management, career development, leadership , development, career planning, recognition and reward (Boudreau and Ramstad, 2005; Romans and Lardner, 2006; Heinen and O’Neill, 2004; Scheweyer, 2004).

Talent management is the achievement of integrated strategies or systems designed to Increase workplace efficiency by increasing improved processes for attracting, developing, retaining and utilizing people with the necessary skills and capacity to meet current and future business needs. Talent management is the further management processes and opportunities that are made available to people in the organization who are considered to be ‘talent’ (Aston & Morton, 2005; Likierman, 2007).

The effective and efficient employees could be result organization success. The right ability and skillful employees selected for the right job, then the chances of result could be favorable for organization success because employee add it the value additional to the productivity of organization and also reduce and save cost. The process of recruitment and selection should be carefully on the basis of merit and the area of interest of employee. The human capital should be more considered as they do care like other resources but the employees are best resources. There is no replacement of human recourse. (De mars, 2002).

The successful organization always depends their good recruitment and selection policy .in the stage of recruitment and selection, Its includes all issues related to employees talent with high-skill, what kind of talented employee does the organization need it to recruit. How human recourse manager should plan for recruitment and selection process for determined positions? What sort of talent does the organization need in future for organization development (Brinkerhoff, 2009).

Talent management separately processes of people management available within the organization separately focused to be a talent. Mostly the organization separately planed strategy of talent management. The additional process of implementation of systematic designed to improved workplace productivity (Mudoli, 2008, Blass, 2008, Ashridge consulting, 2007; Likierman, 2007)

The impact of training sessions on the performance of employees could be positively as well as negatively. Training is systematic development of attitude/knowledge/behavior pattern required by an individual in order to perform adequately a given task or job. It is official ongoing process of learning activity for short period of time within an organization which designed according to need assessment of desired talent which enhanced the fulfillment desired performance of employee. (bartel, 1994; kalleberg and moody, 1994; Russel et al., 1985).

Organization more considered their talent employees rather than other factors of recourse because it doesn't matter what strategy organization designed and what kind of challenges organization faced but the important is right talent which execute the strategy and deal with challenges (Gebelein, 2006).

Development countries depends their successful organizations and successful organization depends their core competency of employees which can said that economy development depends their talented people of the countries (Moaeri, 2002).

In modern and competitive environment the talented and skillful employee need always felt by many organizations and human resource manager not only solved employee problems but also designed succession planning of key positions of the organization. (Porkiani et al.2010). According to McGee (2007) and pool (Horvathova, 2009) effective task with skillful employee is basically on talent management strategy of organization that is screening organization strategy. Talent management strategy is managing, maintaining, training and developing existing human capital within availability at organization to contribute in achieving desired future needs of organization that is known as talent.

In practice, of course, employers can look for more lengthily through recruiting activities and more careful selection, and applicant can search actively by securing better information about vacancies. We also know that job requirements are not exogenous from the supply of applicants: A deficit of applicant that leads to higher wages in turn causes employers to substitute capital for labor in order to create new jobs with lower skill requirements. Empirical evidence indicates that employers also lower the skill requirements for given jobs when labor is relatively scarce and raise them when higher quality applicants are plentiful (Walsh 1977; Brencic 2010).

Talent management is used as a tool for organization success which help us organization in competitive marketplace to compete their competitors and get success. (Lockwood, 2006). Talent has become key factor which differentiator for HCM and for leveraging competency of organization within strategic HRM. (Gratton, 2000; Becker et al., 2001). The talent management of organization is one of the key factor that management of human resource playing strategically in organization (Bhatnagar, 2004).

Talent management know how to be a planning tool for human resource management, as a planning tool talent management looks extremely comparable to labor force planning, but where HR will practice a real opportunity for contribution to the organization is in the worth of implementation supporting the plan. Talent management is the systematic attraction, recognition, development, engagement/ retention and deployment of those individuals who are of particular value to an organization, either in view of their 'high potential' for the future or because they are fulfilling business/operation-critical roles. (McCartney, 2006; Cappell, 2008)

Employee should be considered to be the best asset of organization for efficient and productive advance. It is very difficult to retain talented employee for long term benefit of organization to maintain required level of performance and competitive advantage. (Mehta et. Al., 2014).

Skill gap is incredibly essential factor should be identify at the time of recruitment to filter the pool of candidate to matched required skill to desired skill (Recruiting Experts Worldwide Report, 2011). Internal skill development of employees identified through skill gap and developed them through skill training programs (Muduli, A., 2008).

The reasons for low down turnover which workers have mentioned are work experience, career development and independence. All these motives of human resources help organizations to bring into line HR practices for that reason and help them with employee retention (Brigitte Kroon and Charissa Freese, 2013). Also employees must be able to see a clear occupation path in the organization, only then they will stay for long (Gaurav Bagga, 2013). Retention practice provide more importance to factors moving to cause employee turnover (career opportunities and economic rewards) than on those supposed to affect employee retention (social impression, job content, work-life balance). Profession opportunities have the strongest impact on employee commitment while the impact of financial rewards is less. Ways recommended for plummeting member of staff attrition are career development, considered to be one of the most important factors. Providing great career development opportunities makes the employees to stay in the company for long and at the same time enhances their loyalty to the firm. Also creating positive social work surroundings and adding content to the jobs and tasks to be done by the human resources enhances employee fulfillment and commitment (Meganck, 2007).

Skill shortage similar kinds of skill mismatch and skill gap could be a general from of mismatch, all kinds are collectively representing skill problems (peter cappeli, 2014). One of the most important topic of study in worldwide talent management has been roughly the notion of talent shortages (*Manpower Group Talent Shortage Survey 2011*) and the implication of talent shortages on the practice of human resource management in worldwide organizations (Collings & Mellahi, 2009; Farndale, Scullion, & Sparrow, 2010; Scullion, et al., 2010; Stahl, et al., 2012; Vaiman, et al., 2012).

The development of talent is one of the most significant importances over the past one and half decades which has been more focuses on effectively managing the individual employee which are more important to the fulfillment of strategic success of organization. (Ibraiz and Schuler, 2012)

Employee appointment and retention guide to higher client satisfaction and loyalty especially in the services sector. Reason that lead to employee engagement which not only include of pay/compensation and benefits but also factors like good working conditions, flexible work timings, cooperative teams, good bosses, culture and values of the organization (Devi, 2009). Organizations with excellent given name, way of life, values, good salary and benefits put together for their employees can also help employee retention (David, 2007).

According to Faculty of Management Sciences, Lagos State University, Ojo, Nigeria, West Africa .HR's accountability linked to talent management is toward identify investments, plan development necessary to fully delivered on its role in Talent management, and compute the return on investment to the organization. HR should charge the ability of the organization's decentralized leadership to implement local or unit-based actions required to close notorious

talent gaps. Assume that one initiative will be to retain high performers in strategic and core roles. A decision model may assist together central HR and local leadership to identify actions appropriate to different routine segments. Talent management is a typical set of HRM/HRD function which includes recruitment and selection, learning and development. Management of human recourse should develop strategy about talent engagement, motivation and maintenance according to talent external and internal factors (Heinen and O'neill, 2004)

One of the biggest challenges in front of software companies all over the globe is building and behind a strong talent pipeline. The range of talent management issues facing multinational software organizations now is extremely broad. These originations must recruit and select talented people, train them, manage their performance, compensate and reward them and try to retain the strongest performers. The talent management software marketplaces at the moment more than ten years old, so far it is still a off-putting task to select the right solution. This market is both consolidating and expanding at the similar point. (N. Venkateswaran, 2012).

The new tendency of high employee turnover is due to a variety of reasons such as employees not being happy with the kind of job they do, lack of funds in training and development, lack of career enlargement and development opportunity, unfair and false performance appraisals, etc. Strategic ways for retaining top talent in the organization is by serving high possible employees have cross purposeful job for job and work related satisfaction, involvement in decision making, encouraging their ideas and helping them implement them, help in career development moves, skill building through effective and relevant training (Hay 2001).

On-the-job training opportunities and better training and development practices improve employee retention and assurance (Deery 2008).HR practices motivate and empower employees which guide the workers devotion to the organization.HR practices for recruiting and training do not essentially increase employee's faithfulness to the organization. Such HR practices which attempt to bring skills in address or develop current employees actually increase turnover (Patrick M. Wright, Timothy M. Gardner and Lisa M. Moynihan, 2011).Admittance to training, adjusting training practices as for each older workers requirements and an age consciousness training program is required for better older employee retention (Marjorie Armstrong-Stassen and Andrew Templer 2004).

Employee retention is important to have a competitive advantage in today's engagement. Providing exciting support and work life balance to employees helps organizations in low turnover (Osman, 2013). The role of work life balance has a straight relation in employee's decision to stay or leave the organization. Job attitudes such as job satisfaction and commitment, personal reasons such as positive and depressing feelings, the role of WLB in employee attrition and, lastly, the strategies provide to cut high turnover rates. The recommendations mention include the require for norms on working hours, role models at the workplace, flexi work hours and arrangements, effective talent attainment and training practices. It has been experiential that stress and its different components like emotional exhaustion and job suffer exhaustion are the major causes of high employee turnover. Ways and methods suggested to improve employee retention and commitment in the hospitality sector include better recruitment and training & development practices to improve employee satisfaction with work and also have WLB (Deery 2008).

Prahalad and Hamel (1990) were the primary to take competency modeling away from individuals and into the kingdom of organizational performance. They introduced the concept of "core competencies", to indicate the real meaning of what makes an organization

competitive in its atmosphere and what enables it to adapt and innovate in answer to change. Core competencies or organizational competencies have been described as things that organizations are best at. They are design components of an organization's competitive strategy that are usually a result of mutual competencies (Haase, 2007: 43).

The quantity of organizational support employees recognize has been proved to influence employees' job attitudes. In adding up, Wayne et al. (2002) indicated that perceived organizational support reflect to a large extent the excellence of the relationship between the organization and the employee (Konijnenburg, 2010).

Talent management practices settlement both the individual and organization. So the argument doesn't categorize the individual and organizational settlement since they are interconnected in nature. Talent management arrangement to organizational strategy has a clear contact on the success of projects meeting their original goals and business intent.

Organizations in which talent management is united to organizational strategy include an average development success rate of 72 percent, even as organizations in which talent management is not successfully aligned to organizational strategy have an average project success rate of 58 percent. The difference of 14% project accomplishment rates equates to risking 50 % more programs dollars when talent management is not successfully aligned with strategy (Project Management Institute, 2013).

#### **Performance evaluation:**

Effective talent management will have an indirect optimistic relationship with organizational performance; mediated by work motivation, organizational commitment, and additional role behavior substitute separately or in combination with one another (Collings & Mellahi, 2009). Talent management systems are deployed to elicit desired role behaviors among the Organization's talent pool and help out in realizing the organizations (Lepak & Shaw, 2008). Talent management if given the proper development of skills and increased responsibility seeks to focal point on an worker's potential, meaning an employee's future performance (Hamid, Z. A., n.d.). Talent Management strategies develop innovation capability and achieve a high level of performance. Talent management exercise adds rigor and structure for a more meaningful discussion with superiors.

#### **Developmental veivs:**

Imitation and gaming will be used for workforce development, and performance management will come to a close to be based on yearly review. Instead, users will take delivery of continuous feedback based on business systems that monitor work. Development systems will use this information to make recommendation for advancement and/or corrective actions. With tools like Microsoft's ESP, companies will take advantage of simulation and gaming to help with skills development.

## **METHODOLOGY**

#### **Research design:**

The practice of this study of talent management is to explore impact on the growth of the organization success. The study is based on primary data which collected data with the help of pervious available published data about talent management as well as survey conducted for data collection and practiced of talent management in organization. The research is deductive in approach where thinking proceeds from general to specific assumption. Also designing strategy to test the hypothesis .The research design is quantitative analysis and theoretical

testing for quantitative factors. The study has to be structured in such a way so that it can produce best statistics for analysis and hard facts between both dependent and independent variable and also co-related variable of talent management. Often with quantitative study a sample of different private organization employees would be carried out with the help of questionnaires papers to testing the sample, this is matching the targeted talented employees of the organization.

### **Sampling:**

This study considered talent management because success of organization depend their human capital so that the organization should be more considered talented employees rather than other factors because there is no substitution of human capital or skillful employees. The study specifically focuses on organization positive growth with the important factor which is talent employees. The data is collected different private companies that were growing their performance with the induction of new and young talented employee to balance their competency management on organization environment. The population of the research is not limited by organizations because the study is more focused on talent management but limited by private organizations and specified by banking sector, health and care sector and educational sector. The sample size not exactly designs but at least 400 questionnaires paper was prepared for the survey of the study. The technique used for data collection simple is sample random sampling.

Organization Development was used as dependent variable, and Talent management was used as Independent Variable, which divided further was divided in two board categories positively and negatively. Positive variable factors are "Requirement and selection" right talent recruitment for right position, "Training and development" maintenance of talent through training session and Development programs of talent. The negatively variables factors which effect the success of organization includes "Employee retention" how to retain talent within an organization, "Skill gap" managed skill gap of desired talent and "Skill shortage" how to managed when organization faced skill shortage in market.

The control other factors, control variables such as performance evolution, Motivation, Ability, leadership quality, and area of interest of employee, competency management, training either on-the-job or off-the-job, education, control retention of employee, Workforce environment and culture of organizations.

## **RESULTS AND ANALYSIS**

Table 1 shows the Age of our respondent of our survey. Most of our participants were in early stage of their career which may show that they want to be part of organization success for the sake of their own career progress.

<b>Table 1: Age of Respondent</b>				
Age Group	Frequency	Percent	Valid Percent	Cumulative Percent
18-22	34	12.0	12.0	12.0
22-25	79	27.9	27.9	39.9
26-30	64	22.6	22.6	62.5
31-35	52	18.4	18.4	80.9
36-40	35	12.4	12.4	93.3
41-45	8	2.8	2.8	96.1
46-50	10	3.5	3.5	99.6
50+	1	.4	.4	100.0
Total	283	100.0	100.0	

Table 2 shows the Education of our respondent around 40% of our respondent have done bachelors, and 20 % have done masters. So We can classify that around two third of our sample is educated enough to support the organization success.

<b>Table 2: EDUCATION</b>				
Education	Frequency	Percent	Valid Percent	Cumulative Percent
Non Metric	3	1.1	1.1	1.1
Matric	20	7.1	7.1	8.1
Bachelors	117	41.3	41.3	49.5
Masters	56	19.8	19.8	69.3
Professional	14	4.9	4.9	74.2
PhD	3	1.1	1.1	75.3
Intermediate	69	24.4	24.4	99.6
Executive	1	.4	.4	100.0
Total	283	100.0	100.0	

Table 3 shows the Experience level of our respondent of survey. Most of our respondent (60% or more) are at early stage of their career i.e. for 3 to 8 years. And only 25% of respondents are having experience more than 8 years.



<b>Table 3: EXPERIENCE</b>				
Level of Experience	Frequency	Percent	Valid Percent	Cumulative Percent
less than one-one year	34	12.0	12.0	12.0
1-3 year	63	22.3	22.3	34.3
3-5 year	55	19.4	19.4	53.7
5-8 year	51	18.0	18.0	71.7
8-11 year	37	13.1	13.1	84.8
11-14 year	11	3.9	3.9	88.7
14 to more than	31	11.0	11.0	99.6
EXP	1	.4	.4	100.0
Total	283	100.0	100.0	

<b>Table 4: CURRENT ORGANIZATION TIME PERIOD</b>				
	Frequency	Percent	Valid Percent	Cumulative Percent
One year	88	31.1	31.1	31.1
Two year	53	18.7	18.7	49.8
Three year	48	17.0	17.0	66.8
Four year	27	9.5	9.5	76.3
Five year	26	9.2	9.2	85.5
Six year	16	5.7	5.7	91.2
Seven year	3	1.1	1.1	92.2
More than seven year	21	7.4	7.4	99.6
Total	283	100.0	100.0	

Table 4 explains the association of our respondent with their current organization. Most of 75% of our respondent just joined their current organization for 4 or less years.

<b>Table 5: EMPLOYEES WORKING ON ORGANIZATION</b>				
	Frequency	Percent	Valid Percent	Cumulative Percent
	4	1.4	1.4	1.4
10 to 20	9	3.2	3.2	4.6
21 to 30	18	6.4	6.4	11.0
31 to 40	8	2.8	2.8	13.8
51 to 60	18	6.4	6.4	20.1
61 to 70	77	27.2	27.2	47.3
70 to more than	148	52.3	52.3	99.6
Total	283	100.0	100.0	

Table 5 shows the size of organization, almost 80% are having more than 60 employees. Our correlations between Talent management practices and organization success was 56.3% based on our survey results which was also significant at 99% Confidence Interval Level.

Table 6 shows the Regression analysis between Talent management practices and organization development. Our model summary shows the R Square of 55.8% and Adjusted R Square of 54.5%.

**Table 6 : Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.747(a)	.558	.545	.53757

**Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
		B	Std. Error	Beta			
1	(Constant)	1.844	.300			6.140	.000
2	RS	.310	.084	.202		3.682	.000
3	TD	.066	.068	.053		.966	.335
4	SS	.386	.072	.329		5.385	.000
5	SG	.018	.071	.015		.247	.305
6	ER	.141	.061	.111		2.295	.023
7	CM	.673	.069	.517		9.686	.000

a. Dependent Variable: Organization Development

b. Independent Variables: recruitment and selection(RS) ,training and development(TD) ,employee retention(ER),competency management(CM), skill gap(SG) and skill shortage(SS).

Above Table 6 shows that Training and Development and Skill Gap is not contributing towards Organization Development however, Significant Constant too shows that any important variable contributing to OD is still missing in our model. Our this table may conclude that Recruitment and Selection, Skill Shortage, Employee Retention and Competency Management do contribute in OD Success.

## DISCUSSION

Talent management is fast becoming a critical strategic objective for growing organizations. It is very crucial factor which effect on organization success. Through this study, we have identified the importance of talented or skillful employee for the success of organization. Various numbers of variables are tested in this study these are requirements and selection, training and development, skill gap and skill shortage and employee retention. This study considered talent management since success of organization depends on their human capital so that the organization should put more well thought on talented employees rather than other factors because there is no substitution of human capital or skillful employees. The study specifically focuses on organization positive growth with the important factor which is talented employees. Many organizations realized that talent management is a key success of modern organizations. Getting right people at the right place with the right skills and are engaged on the right activities would be resulted in achieving targeted goal of the organization. The investigation of results showed that most organization nowadays focuses on the growth of their talented employee through many other styles but usually organizations prefer training and development programs. The study also find out initial stage of talent management began at the time of requirement and selection. It might be possible some organization least considered

at the time of hiring employee but it may be cause of negative growth of organization or failure. In some multinational companies and private sectors organization, requirement and selection stage is very effective which identify during the tested of variables but in public sector there is unionization impact also influence on the hiring process of right talent. The other thing which employee retention is more focused on this study because usually the factor which faced by every organization because of employee are not entertained by organization. Mostly employee of the organization showed that other companies provide more facilities rather than current job position of existing organization. To control employee retention some organization contract with employee at the time of joining which showed that it is the best technique to control employee retention. At the time of research questioner's conduction we observe the some organization hire least skillful staff which doesn't match their qualification with desired skill. They only work to do those task which they usually doing on their daily routines task and nothing to do else. Organization success usually depend the employees effective and efficient workforce behavior. The right ability and skillful employees selected for the right job, then the chances of result could be favorable for organization success because employee add to the value additional to the productivity of organization and also reduce or save cost.

### CONCLUSION

Every employee have some unique talent which differentiate that employees to others and that talent suits for a particular job profile which could be result competitive advantage of organization and that talent would be used for any other position will be cause for discomfort. Transferring organization vision into it goal and fulfillment of required level of competencies should identification of right talent for suitable workplace that is primary aim of organization success. The successful organization always depends their good recruitment and selection policy .in the stage of recruitment and selection, it includes all issues related to employees talent with high-skill. Mostly organization in private sector includes health and care, education and banking sector have it cost effective requirement of their staff. It is initial stage of talent and then mostly organization preferred to develop their key talented employee through training program with use of different methods. . The productivity and organization culture directly related to their valuable human capital. The effective and talented employee add it the value additional to the productivity of organization and also reduce and save cost of productivity.

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# Determinants Of Capital Structure Of Leasing Companies In Pakistan

**Shazila Andaleeb**

Department of Management Sciences, MAJU, Karachi

**Muneer Ahmed Abbasi**

Department of Business Administration, BBSUL, Karachi

**Syed Iqbal Hussain Naqvi**

Department of Commerce, FUUAST, A.H. Campus, Karachi

**Shahan Ali**

Department of Commerce, BBSUL, Karachi

## ABSTRACT

The purpose of the research is to study the determinants of capital structure of leasing companies in Pakistan listed on Karachi Stock Exchange during the period of 2006-2015. In this study data was collected from at Karachi Stock Exchange .In this study experts and professional can break down whether the practices in the exact corporate world are identified with the hypothetical perspectives of capital structure. This part of research provide us a review of the theoretical framework literature on capital structure whether the significance of leverage benefits and its cost will run the managers to make decisions based on leverage of capital structure and its market opportunities for guiding them to various debts and equity issues? Do managers have leverage targets change over the time or they adjust equity debt ratio continuously or they don't have targeted leverage to maintain? The unit of investigation is the recorded firms in PSX record with the negligible specialists' impedance. Study defines adjusted panel information which was gathered from secondary sources. The study applies econometrics displaying utilizing both single condition and diminishes condition models for panel information. Panel econometric procedures specifically pooled common minimum squares, settled impacts, and irregular impacts were utilized to research the effect of capital structure on execution of finance related firms recorded on the Karachi Stock Exchange from 2006-2015.

**Keywords:** Capital Structure, Leasing, Leverage

## INTRODUCTION

### Background of Study

This examination gives the significant data about the capital structure choice effects and firms qualities inspected to expand the determinants of capital structure rehearses. This is a pioneer research work towards the finding of capital structure determinants of leasing organizations in Pakistan by Titman and Wessels (1988). The creators give the significant proofs about the company's size, benefit, hazard, charges, development, substantial quality, capital ampleness, speculation, money streams and profit association with capital structure basic leadership criteria which can come about into unfavorable or positive connection between firm size and capital structure.

Year by year determination elements of capital structure choice stay tricky regardless of being included in endless hypothetical matters like pecking request hypothesis, exchange off hypothesis, flagging hypothesis (Frank and Goyal, 2003; Fama and French, 2005; Byoun, 2008;

Roshan, 2009) looking at the different parts of capital structure basic leadership. There are scientists who takes after Modigliani and Miller (1958) and they utilizes diverse kind of hypotheses like clarifying the contentions for deciding the capital structure assortment in setting distinctive areas yet then again analysts (Hirshleifer, 1966; Stiglitz, 1969) are contending that the capital structure is unessential generally due to its effects available estimation of the firm. Different analysts available is of the supposition (Myers and Majluf, 1984; Graham, 2003) that contending the money related basic leadership is an endeavor towards the directors for offsetting their duty shields of higher obligations against the cost increase budgetary trouble.

Still, there is scarcely ever plain privilege on the determinants of capital structure and analysts are appeased in testing of getting a superior master on possessions cluster choices to add to the important writing.

### **Overview of Leasing Companies of Pakistan**

At present there are 50 (monetary) leasing organizations in Pakistan. Leasing organizations are giving multi leasing administrations in Pakistan for various classifications of business. Property and cars (vehicles) are primary business classifications in Pakistan for renting. Auto leasing and house leasing organizations are giving their consultancy administrations in Pakistan for the sake of settled add up to general society or individual and organizations. A lease or occupancy is an agreement that exchanges the privilege to have particular property. In law, there are two sorts of property: verifiably, land is the more essential in light of the fact that, under ordinary circumstances, it holds the most elevated quality in monetarily created social orders.

Advancement of Leasing in Pakistan: The development of leasing in Pakistan especially in the formal segment goes back to June 1980 while, as indicated by a Report of the Council of Islamic Ideology, the idea of leasing was perceived as one of the money related administrations under the Islamic budgetary framework, which was later presented in the nation in 1985.

### **Problem Statement and Objectives**

Problem Statement: Capital structure blend is a critical choice for any firm. Firms endeavor to pick suitable blend of obligation and value to bring their expense of capital at the least level. Budgetary directors dependably try endeavors to raise the abundance of shareholders since it is their center obligation. Significance of capital structure choice can't be overlooked. Suitable basic leadership with respect to financing blend can help firms to bring down their expense of capital which at last expands the estimation of firm. Capital structure choice is affected by numerous elements. It is essential to take watchful thought of those variables decently well be detailed. This study centers to porch out the particular elements of capital structure and their impact on financing blend particularly on renting and leasing industry.

### **Objectives**

This concentrate for the most part centers to porch out firms' particular elements of capital structure choices for the recorded firms of renting industry. Aside from that, this concentrate additionally endeavors to discover:

- Effect of Profitability on capital structure choices,
- Effect of substantial quality of benefit after choosing capital structure,
- Influence of size on capital structure choices,
- Impact of development on capital structure choices,
- Influence of business and monetary danger on capital structure choices,
- Effect of on capital structure choices, and

- Impact of assessment shield on capital structure decisions.

### **Justifications and Implications**

This study is done to clarify the effect of capital structure in the money related execution of the recorded firms on Karachi Stock Exchange trade. In this study experts and professional can break down whether the practices in the exact corporate world are identified with the hypothetical perspectives of capital structure or not. This study is likewise a commitment of information in the field of corporate account which would give new thoughts to specialists and researchers.

### **Assumptions and Limitations**

We intend to test a basically entrenched hypothesis of capital structure determinants on the generally untested Swedish business sector, while including two extra segments: The expense of capital and the administration division, as opposed to the regularly examined fabricating/delivering segment, which is additionally incorporated into the study.

This study:

- Examines capital structure drivers proposed by the exchange off hypothesis and pecking request hypothesis to decide the pertinence of these speculations for Pakistani firms.
- Differentiates between industry sort and between eras, to figure out if the hypotheses can be reasonably reached out to various sorts of firms and how the significance of drivers changes in various eras.
- Analyzes the informative force of capital structure, considered in the main segment of the paper, over the expense of capital.

The exact exploration covers bookkeeping and business sector information just from organizations recorded on the Karachi Stock Exchange and is constrained to the period 2006-2015. Organizations included are limited to a more extensive meaning of assembling/creating industry and administration industry. Money related organizations are prohibited from the specimen, since they are described by high influence proportions and a double part as both moneylenders and borrowers. Further, organizations that depend on bond-advance financing were expelled from the example, since the structure of those advances and the installment streams are obscure, or if nothing else amazingly hard to assemble in a complete and solid way. The postulation is additionally obliged to organizations that stay dynamic all through the whole study time frame, suggesting that organizations that went bankrupt or were inert amid this period were excluded.

## **LITERATURE REVIEW**

### **Theories of Capital Structure**

Capital structure is being determined through the maximization of the firm's value, this is introduced by Modigliani and Millers (1958). This part of research provides us a review of theoretical framework literature on capital structure whether the significance of leverage benefits, its cost will run the managers to make decisions based on leverage of capital structure and its market opportunities for guiding them to various debts and equity issues? Do managers have leverage targets change over the time or they adjust equity debt ratio continuously or they don't have targeted leverage to maintain? The answer to above query is that there are three basic theories of capital structure model available to support the solution towards these questions that are trade-off theory, pecking order theory and signaling theory because there is no other than that formula for capital structure exact maximization of firm's value. Researcher



conducted a lot of empirical evidence from all over the world for testing the hypothesis on these given theories (Ross, et al 2008).

Principle underlying the theoretical capital structure discusses the lending and financing choices of the firms in terms of its static trade-off choice and pecking order framework choice that cover the several aspects like trade-off theory encompasses the exposure of firm's bankruptcy and its agency cost that effects directly towards the valuation in terms of taxes associated with debts uses. One of the cost is representing the bankruptcy cost in terms of liquidation cost that is valued in the liquidation of net assets of the firm. The higher cost will be incurred by the firm in terms of its financial cost due to potential liquidation costs (Cassar and Holmes, 2003).

### **Trade-off Theory**

For capital structure trade-off theory is being very crucial in explaining the motive of the way towards the firms typical financing partly with debts and its equity. Trade-off theory states that financing benefits in terms of its debts that is tax shield advantage, agency benefit and also the cost of funding in terms of debts for example financial distress and its agency cost that is focusing on the maximization of valuation of the firm in terms of its offsetting cost benefits of debts and equity for making decision of financing the business.

### **Pecking Order Theory**

The attention considerably goes towards the finance research scholars who practices the pecking order theory because it is being considered as a one of the most important and convincing theory of capital structure practice. According to Myers (1984) the pecking order theory was firstly introduced as an empirical test of pecking order followed by many scholars like Shyam, Sunder and Myers (1999), Myers and Majluf (1984). Argue that empirical test of pecking order is used by modified regression model based on empirical developed analysis methodology reporting about the firm follow up of a set pattern preferences using the internal generated and external options of funding by Shyam-Sunder.

### **Signaling Theory**

Those indicating principle (ST) approach, initially created Toward ross. (1977), demonstrates that debt may be viewed as an approach with highlight investors' trust for. Those company; that is, In an organization issues the debt it gives a indicator of the. Businesses that the firm will be expecting sure trade streams in the future, Likewise the. Vital What's more investment installments once debt need aid an altered contractual commitment. Which a firm need on pay out about its money streams. Accordingly the larger amount from claiming obligation. Indicates the manager's certainty done future money streams.

### **Profitability**

The important determinant of capital structure is profitability of the firm that affects the decision making related to the capital structure of the firm. According to the pecking order theory the firms gives preference to use retained earnings firstly as an investment of funds that are necessary. The higher the profitability of the firm the lesser is the leverage. Two major alternatives are being measured for the profitability of the firm that is Return On Asset(ROA) and Return On Equity(ROE) from which both of the basic earnings after taxes is calculated. Leverage and profitability of the firm is negatively related with each other because finance managers use to prefer more profits instead of leverage to financial investment (Al-Fayoumi and Abuzayed, 2009; Gropp and Heider, 2009).

## **Risk**

Business risk is considered to be the one of the key important factor for capital structure practices of the firm. Bhaduri (2002) states that commitment of debts involves periodic payment commitment therefore high leverage of the firm prone to the distress cost of finance and volatile income of the firm are more likely to have less leverage (Bhaduri, 2002, p. 202). Bankruptcy theory defines that there is a negative relationship in between the capital structure and business risk. The institutional investment trend of the firm towards the low business risk because the firm with its high volume of volatility of their returns tend to be highly profitable to default and to become bankrupt. Therefore it tends to be negative in relation with the business risk as compare to the institutional ownership of the firm. The recent research study defines that the use of standard deviation of Return On Assets is the main indicator for the business risk of the firm.

## **Taxes**

It is being considered that taxes are the foremost important factor to be believe for the determining of capital structure and its decision. Firms with high payment of taxes have more leverage to obtain its tax shield gain. (Auerbach, 1985). Tax is measured as a payment of tax usage decision and computed as by tax rate multiply by its earnings before taxes for avoiding the potential problems of taxation deferred. There is a positive relationship in between the tax and leverage of the leasing companies of Pakistan.

## **Growth**

In different type of non financial studies it is defined that (Barclay et al., 1995; Shah and Khan, 2007), argues about the growth opportunities are negatively related with the leverage of the firm because it tend to hold the more real options for future investment as in comparison with its low growth opportunities (Myers, 1977). For instance the firms such as leasing firm have higher number of deposits, whereas leasing companies do have higher number of policies from which we expect the positive relationship in between growth opportunities and firms leverage because leasing companies borrows huge amount of money from different banks for increasing their lease agreements. The percentage is calculated through the change in total assets from prior year (see, e.g. Ramlall, 2009). Hovakimian et al. (2004) argues that the high growth opportunities of the firm that bringing more capital gains towards the institutional investor will lower down the ones growth. Therefore growth opportunity is being considered as a positive signal for institutional investors and study uses the market-to-book approach as an indicator towards the growth opportunity of the firm.

## **Size**

Size of the firm is one of is one of the important determinant of capital structure of the firm and its different sizes that have different types of characteristics. For example small firms tend to have more problems as compared to large firms because they have less asymmetric information problems to share and they specifically share more information in the case of outside investors (Rajan and Zingales, 1995). Expected relationship in between the size and leverage is positive because it argues the leverage increases the value of the firm as the firm increases (Noe, 1988; Harris and Raviv, 1990). Firm size play an important role as large firms are less prone to bankruptcy and are more diversified, therefore a positive relationship is expected (Titman and Wessels, 1988; Bhaduri, 2002). Resources are required by large firms and the ability to the maximization of the risk is also required for their stock investment that is why it is less financial distressed and bankruptcy risk is also low risk (O'Brien and Bhushan, 1990; Tong and Ning, 2004). Logarithm natural to total assets is used as a proxy for the size of the firm.

### **Asset Structure**

Asset structure is one of the crucial determinants for the new firm capital structure up to the extent that the tangible assets and generics resulted into the firms that are having more liquidation value (Harris and Raviv, 1991; Titman and Wessels, 1988). Many research studies revealed that the leverage is positively related with the firm's assets. According to Myers (1977) the consistent argument over the tangibility of the asset such as fixed assets strengthen the higher debts level with comparison to intangible assets likewise as a growth opportunities. Assets could be redeployed in near future. Their inalienable values in view they are less specific particular (Williamson, 1988; Harris, 1994). Thus potentially reduces the cost of agency associated with debt usage connected with obligation use (Smith Also Warner, 1979; Stulz What's more Johnson, 1985). Feri and Jones (1979), Bog (1982), in length and Matlitz (1985) Furthermore Allen (1995) provide experimental. Proof of a certain relationship between debt Furthermore settled possessions. The experimental. Confirmation recommends a certain connection reliable with the hypothetical contentions. The middle of benefit structure Also power to vast organizations (Van der Wijst Furthermore Thurik, 1993; Chittenden et al., 1996; Michaelas et al., 1999).

### **Investment**

In the event that of financial institutions, those speculations would really significant over deciding the capital structure. Choices resulted that speculations hold numerous noteworthy. Part of the financial institution's possessions. Renting. Organizations dependably bring a huge sum for Venture. Previously, terms of the lease particular fund and for some situations venture. For lease account gets more than half of aggregate advantages. Moreover, investment to terms of the lease fund will catch. How those leasing organizations account their lease agreements.

### **Cash Flows**

cash flow appears to contrast crosswise over firms in the greatness of its effect on venture. Specifically, it seems to assume a more critical part for extensive firms than for little firms. While this might astonish at first sight, there are a few reasons why this impact may be watched. For instance, it might mirror the way that substantial firms have a tendency to have a lower relative income. Also, it might mirror the likelihood that extensive firms have a more different proprietorship structure, which tends to expand organization costs. Given size, the impact of income has a tendency to be bigger for firms in developing areas, in opposition to what one would expect subsequent to collateralizable total assets is liable to be bigger for this situation and the danger of lower. In any case, firms in developing segments need to back a higher rate of speculation. At last, when firms are ordered by, it gives the idea that income matters to some degree more for more current firms, as would be normal since data asymmetries are liable to be bigger for such firms and they have to back a higher speculation rate. Our outcomes propose that capital business sector defects ought to be an important element of any expansion to or reformulation of the change cost model of venture. In any case, the blended execution of Q recommends that such expansions ought to be sought after in future work.

## **RESEARCH METHODOLOGY**

### **Research Design**

The unit of investigation is the recorded firms in PSX record with the negligible specialists' impedance. Study defines adjusted panel information which was gathered from secondary sources.

The study applies econometrics displaying utilizing both single condition and diminishes condition models for panel information. Panel econometric procedures specifically pooled

common minimum squares, settled impacts, and irregular impacts were utilized to research the effect of capital structure on execution of finance related firms recorded on the Karachi Stock Exchange from 2006-2015.

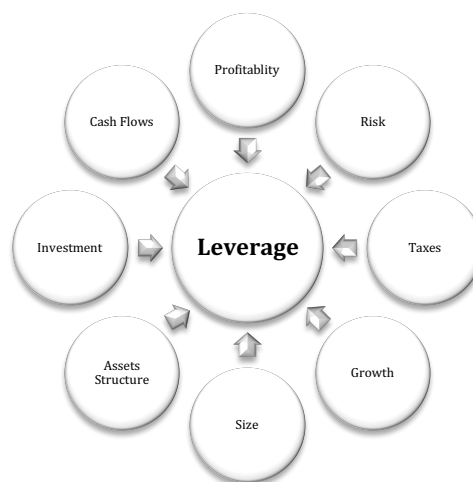
Diverse restrictive hypotheses of capital structure are surveyed (the exchange off hypothesis, pecking request hypothesis, organization hypothesis, and hypothesis of free income) keeping in mind the end goal to define testable recommendations concerning the determinants of capital structure of the assembling firms. The examination is performed utilizing board information strategies for an example of 10 firms recorded on the Karachi Stock Exchange from 2006-2015.

Theoretically the study looks at firm level components that decide the capital structure of leasing companies in Pakistan. Right now, ten leasing companies are working in Pakistan; and the specialist trust that, for important examination, there is no compelling reason to test from the ten leasing companies as they are as of now few in number to gather data over the time of 2006-2015.

### Theoretical Framework and Hypotheses

As showed by Miller, the estimation of the firm depends on upon the relative stature of each obligation rate, differentiated and the other two. As pros continued forward examining further the considered capital structure, a couple theories emerged, all of which completion up on the nearness of a perfect capital structure checking conforming the favorable circumstances and costs of commitment financing. The standard preferred standpoint of commitment financing is the way that interest portions are deducted in figuring assessable pay, allowing an "evaluation shield" for the associations. This "cost shield" licenses firms to pay lower charges than they should, while using commitment capital rather than using only their own capital. The costs of commitment can be seen generally from two unmistakable points of view. To begin with, there is an extended probability that a firm will be not capable successfully dealing with its commitment responsibilities (i.e. interest portions); thusly, there is an extended probability of indebtedness. Second, there are office costs of the credit pro's watching and controlling the affiliation's exercises. There are additional costs concerning the possibility of capital structure of the firm that rise up out of the way that directors have more information about the affiliation's future prospects than do examiners.

**Figure 1**  
**Theoretical Model**



This study researches the determinants of capital structure of leasing firms in Pakistan for the period 2006 to 2015. Utilizing an adjusted board test, we find that size has a positive relationship, while benefit, liquidity and duty have a negative association with influence of the example firms. We likewise incorporate expansion and unmistakable resources for examine their association with the influence alongside alternate determinants of capital structure. If there should be an occurrence of higher swelling, for occasion, firms want to get more cash as opposed to issuing value. As a outcome, we expect a positive relationship amongst swelling and influence. By and large, substantial resources constitute a moderately little extent of aggregate resources if there should arise an occurrence of leasing organizations in Pakistan. In the lion's share of the cases, substantial resources are under 5% of the aggregate resources of any lease organization in Pakistan.

**Table 2: Independent Variables & Expected Signs**

	Variable Name	Expected Sign	Reference from Literature	Theory Support
i.	Profitability	-	Myers and Majluf (1984); Titman and Wessels (1988); Abor (2005)	Packing Order
ii.	Risk	-	Ooi (1999); Amidu (2007)	Packing Order Trade-off
iii.	Taxes	+	Ooi (1999); DeAngelo and Masulis (1980)	Trade-off
iv.	Growth	-	Ooi (1999)	Trade-off
v.	Size	+	Titman and Wessels (1988); Ooi (1999)	Packing Order Trade-off
vi.	Assets Structure	+	Rajan and Zingales (1995); Rahman and Kakakhel (2016)	Trade-off
vii.	Cash Flows	+	Shoney and Koch (1996)	Signaling Packing Order

The following hypotheses derived from the literatures will be ultimately defined as under:

**H1:** Profitability significantly impacts capital structure

**H2:** Risk significantly impacts capital structure

**H3:** Taxes significantly impacts capital structure

**H4:** Growth significantly impacts capital structure

**H5:** Size of the company significantly impacts capital structure

**H6:** Asset structure significantly impacts capital structure

**H7:** Cash flows significantly impacts capital structure

### Data and Description

Information accumulation is the way toward social occasion and measuring data on variables of enthusiasm, in a set up methodical design that empowers one of the major one to answer examination questions that is expressed, test theories, and assess results. The information accumulation segment of examination is regular to all fields of study including physical and sociologies, humanities, business, and so forth. While strategies shift by order, the accentuation on guaranteeing precise and fair gathering continues as before.

### Empirical Model

Along these lines, we additionally apply the Hausman (1978) test keeping in mind the end goal to choose between the settled and arbitrary impact estimators (see, e.g. Bevan also, Danbolt, 2004; Voutsinas and Werner, 2011). The invalid speculation is that there is critical connection between's the surreptitiously firm-particular arbitrary impacts and the regressors. On the off chance that there is no such relationship, then the irregular impacts model may be all the more effective and tightfisted. On the other hand, the arbitrary impacts model would be conflictingly assessed and the settled impacts model would be the model of decision. In all cases, the p-values for the Hausman test demonstrate that the irregular impacts model is the favored determination.

**Table 3: Variables and Details**

S. No.	Variable Name	Proxy	Symbol
1.	<b>Leverage</b>	<b>Total Debt to Total Assets</b>	<b>TD/TA</b>
2.	<b>Leverage</b>	<b>Total Debt to Total Equity</b>	<b>TD/TE</b>
3.	<b>Profitability</b>	<b>Return on Assets</b>	<b>ROA</b>
4.	<b>Risk</b>	<b>Standard Deviation of Daily Returns</b>	<b>SD.R</b>
5.	<b>Taxes</b>	<b>Pre-tax Profit to After-tax Profit</b>	<b>PTP/ATP</b>
6.	<b>Growth</b>	<b>Percentage Change in Turnover</b>	<b>PCT</b>
7.	<b>Size</b>	<b>Log of Total Assets</b>	<b>LTA</b>
8.	<b>Assets Structure</b>	<b>Fixed Assets to Total Assets</b>	<b>FA/TA</b>
9.	<b>Investments</b>	<b>Investments to Total Assets</b>	<b>INV/TA</b>
10.	<b>Cash Flows</b>	<b>Operating Cash Flows to Total Assets</b>	<b>OCF/TA</b>

An assortment of meanings of influence have been utilized as a part of the writing, mostly either concentrating on book or market esteem estimations. In any case, the decision of the definition is to a great extent driven by the exploration inquiries being raised and in addition the accessibility of proper information. The reliant variable, influence in the present study is measured in three ways:

- (1) complete obligation to aggregate resources (see, e.g. Bevan and Danbolt, 2000; Antoniou et al., 2008; Huang and Song, 2002; Chen, 2004);
- (2) long haul obligation to aggregate resources (see, e.g. Bevan and Danbolt, 2000; Huang and Song, 2002; Buferna et al., 2005); and
- (3) transient obligation to all out resources (see, e.g. Kakani and Reddy, 1998; Ramlall, 2009).

The equation (1) is regressed through fixed effect panel least square method.

$$TD/TA_{i,t} = \beta_0 + \beta_1 ROA_{i,t} + \beta_2 SD.R_{i,t} + \beta_3 PTP/ATP_{i,t} + \beta_4 PCT_{i,t} + \beta_5 LTA_{i,t} + \beta_6 FA/TA_{i,t} + \beta_7 INV/TA_{i,t} + \beta_8 OCF/TA_{i,t} + \epsilon_{i,t} \tag{1}$$

Then, the parameter  $\beta_0$  is an intercept dummy variable that captures the effect of total assets over total debts on starting salary, all else held constant. We now turn to estimation of a asset equation using data from the Panel Study for the years 2006-2015.

The equation (2) is regressed through Random Effect Generalized least square method.

$$TD/TE_{i,t} = \beta_0 + \beta_1 ROA_{i,t} + \beta_2 SD.R_{i,t} + \beta_3 PTP/ATP_{i,t} + \beta_4 PCT_{i,t} + \beta_5 LTA_{i,t} + \beta_6 FA/TA_{i,t} + \beta_7 INV/TA_{i,t} + \beta_8 OCF/TA_{i,t} + \mu_{i,t} \quad (2)$$

## RESULTS AND FINDINGS

### Descriptive Statistics

Table 3 concluding the descriptive measurements for the ward and the different variables. This appears the normal markers of variables registered from the money related report. This generally low extent of the altered resources could be clarified by the very way of protection business. The necessity of specialized dissolvability stresses liquidity, security and accessibility of venture so that leasing companies can meet their liabilities when they do happen. Additionally, as an administration industry, they may not depends such a great amount on altered resources.

**Table 4: Descriptive Analysis**

	TD/TA	TD/TE	ROA	SD.R	PTP/ATP	PCT	LTA	FA/TA	INV/TA	OCF/TA
Mean	0.781908	4.004231	-0.01960	0.025939	0.690001	-0.05862	14.36719	0.077538	0.343628	0.013807
Median	0.792627	2.96076	0.007500	0.023467	1.109346	-0.23072	14.25742	0.038857	0.357300	0.014452
Maximum	2.819667	44.89457	0.375100	0.058925	2.137392	18.47215	17.14109	0.681492	0.972600	0.372681
Minimum	0.111200	-36.9327	-0.70640	0.010036	-34.73121	-11.5392	11.48911	0.000311	0.000000	-0.66976
Std. Dev.	0.335242	8.319845	0.127429	0.011233	4.053548	3.517093	1.362093	0.129845	0.251507	0.152816
Skewness	2.849041	0.180177	-2.95325	0.843782	-8.605059	1.420189	0.312796	3.387407	0.383051	-0.79167
Kurtosis	18.86668	16.39938	17.39322	3.072208	75.71047	14.64844	2.804006	14.62570	2.686674	7.047043
Observations	90	90	90	90	90	79	90	90	90	90

### Empirical Findings

The pooled regression depends on the presumption that the captures are the same for every one of the banks and for all the periods from 2006 to 2015. Return on value as intermediary for measuring gainfulness of the banks has been utilized as dependant variable. At the second stage business sector to book estimation of the banks is considered as the dependant variable. Accepting equal of influence (ECAP), profit hazard (SDROE), size of bank, Herfindahl File (HERF), leasing interest in securities as extent of aggregate resources of the bank (SEC) and shopper situated credits as extent of benefits (Loans) make our decision of variables and the outcomes are accounted for in the Table 1. Keeping in mind the end goal to control the issue of Heteroskedasticity over the banks furthermore over the day and age, the estimation of pooled information was done in two phases.

**Table 5: Correlation Matrix**

	TD/TA	TD/TE	ROA	SD.R	PTP/ATP	PCT	LTA	FA/TA	INV/TA	OCF/TA
TD/TA	1.000000									
TD/TE	0.027452	1.000000								
ROA	-0.58943	-0.062203	1.000000							
SD.R	-0.191328	-0.211616	0.068162	1.000000						
PTP/ATP	-0.044262	-0.046505	-0.011157	0.074948	1.000000					
PCT	0.018834	-0.122363	0.111578	0.049063	0.033328	1.000000				
LTA	0.182334	0.323394	0.091942	-0.108811	-0.059285	-0.060265	1.000000			
FA/TA	-0.146874	-0.104560	0.061125	-0.003638	0.072834	0.046544	-0.478780	1.000000		
INV/TA	-0.189916	0.003417	0.095613	0.246228	-0.071308	-0.104648	-0.001901	-0.405775	1.000000	
OCF/TA	0.002109	-0.019229	-0.000130	0.033450	-0.084103	-0.136620	0.109733	-0.033818	-0.214410	1.000000

Pearson Correlation was utilized to check the connection among the variables. Table 4 demonstrates that how variables are connected with each other. Relationship between's DPS what's more, DY is exceptionally positive, while that between influence DR and DPS is negative, demonstrating that there is an reverse relationship amongst obligation and profit, i.e. increment in the red is not valuable for profit). It too demonstrates that exceptionally utilized firms are paying less profits. Then again, the expansion in DY will expand DPS which is a

recognizable proof of the reshaping.

What would it be advisable for us to do to lessen multicollinearity in the relapse model? We need to consider the accompanying strides:

- For lessening multicollinearity we can incorporate more variables in the model. Because of which change of unsettling influences diminishes.
- We can decrease it by expanding the quantity of perceptions.
- Combined those variables which have high collinearity.
- Drop some related autonomous variables.

**Table 6: Results of Debt to Assets Proxy with the help of Fixed Effect Panel Least Square Model**

Dependent Variable: TD/TA

Total panel (unbalanced) observations: 79

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.359859	0.728948	3.237352	0.0020
ROA	-0.696980	0.265777	-2.622423	0.0111
SD.R	-5.843359	3.200392	-1.825826	0.0729
PTP/ATP	6.24E-05	0.006503	0.009598	0.9924
PCT	0.004222	0.007289	0.579243	0.5646
LTA	-0.114382	0.048791	-2.344320	0.0224
FA/TA	2.302652	0.924674	2.490230	0.0156
INV/TA	0.074461	0.136587	0.545155	0.5877
OCF/TA	-0.044982	0.201850	-0.222848	0.8244

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.696034	Mean dependent var	0.781908
Adjusted R-squared	0.604844	S.D. dependent var	0.335242
S.E. of regression	0.210738	Akaike info criterion	-0.070494
Sum squared resid	2.664626	Schwarz criterion	0.499373
Log likelihood	21.78452	Hannan-Quinn criter.	0.157812
F-statistic	7.632799	Durbin-Watson stat	0.907554
Prob(F-statistic)	0.000000		

The after effects of the Prais-Winsten regression between influence (subordinate variable) and the autonomous variables are introduced in Table 4. The outcomes demonstrate a factually huge positive relationship between size and influence. This means, leasing companies with bigger size have low rate of likelihood of default and consequently their capacity to utilize more obligation assets. This backing the exchange off hypothesis recommending that bigger firm's display lower likelihood of default. Obligation capital suppliers are more agreeable in loaning to extensive protection firms than the little ones, this is on the grounds that the bigger ones can enhance their operations what's more, consequently diminish their danger profile. The leasing companies utilized less obligation in their capital structure on account of the issue of data asymmetries.



**Table 7: Results of Debt to Equity Proxy with the help of Random Effect Generalized Least Square Model**

Dependent Variable: TD/TE

Method: Panel EGLS (Cross-section random effects)

White diagonal standard errors &amp; covariance (no d.f. correction)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-32.80036	12.17211	-2.694714	0.0088
ROA	-10.08644	4.587404	-2.198726	0.0312
SD.R	-145.5353	43.76935	-3.325051	0.0014
PTP/ATP	0.011111	0.055776	0.199212	0.8427
PCT	-0.134525	0.140447	-0.957837	0.3414
LTA	2.701030	0.903192	2.990538	0.0038
FA/TA	8.979317	4.213645	2.131009	0.0366
INV/TA	1.904237	2.225774	0.855539	0.3952
OCF/TA	-3.133278	6.220956	-0.503665	0.6161
Effects Specification			S.D.	Rho
Cross-section random			5.589404	0.3399
Idiosyncratic random			7.789765	0.6601
Weighted Statistics				
R-squared	0.127260	Mean dependent var	1.727279	
Adjusted R-squared	0.027519	S.D. dependent var	7.491175	
S.E. of regression	7.405404	Sum squared resid	3838.800	
F-statistic	1.275900	Durbin-Watson stat	2.170981	
Prob(F-statistic)	0.270164			
Unweighted Statistics				
R-squared	0.149894	Mean dependent var	4.004231	
Sum squared resid	4589.847	Durbin-Watson stat	1.815738	

The after effects of the OLS relapse between influence (subordinate variables) and the logical variables are accounted for in Table 6. The outcomes demonstrate a negative relationship amongst productivity and influence. The outcomes, which are additionally predictable with past studies (Titman and Wessels, 1988; Barton et al., 1989) demonstrate that, higher benefits expand the level of inner financing. Gainful banks aggregate internal stores and this empowers them to depend less on outside assets. Despite the fact that beneficial banks may have better access to outer financing, the requirement for obligation account may conceivably be lower, if new speculations can be financed from gathered stores.

This finding is steady with the pecking request hypothesis that proposes that beneficial firms favor inside financing to outside financing. There is no backing of danger impacting the level of influence of banks in Ghana. The coefficient for danger on influence is sure and factually immaterial. This discovering brings up an issue as whether danger is critical in the capital structure of banks in Pakistan

## CONCLUSION

### Discussion

In the analysis of breaking down information with help of Pearson's relationship and customary slightest square relapse it is concentrated on that there is a critical relationship exist between turnover proportions and liquidity proportions in leasing companies of Karachi

Stock Exchange. In this study created five log-direct models and tried the hypothesis for partial regression coefficients. With the assistance of the relationship the study was considered between turnover proportions and liquidity proportions. Study found that the expansion in records receivable turnover and stock turnover will increment in net working capital however increment in records receivable turnover in days, stock turnover in days what's more, money transformation cycle will diminish in net working capital.

The positive effect of records receivable turnover was found on net working capital. The concentrate likewise found that the expansion in records receivable turnover, accounts turnover in days, stock turnover and stock turnover in days would build the current proportion. Basic analysis proportion can be expanded by expanding records of sales turnover, debt claims turnover in days, stock turnover and stock turnover in days however it can be diminished because of expansion in money transformation cycle. Money proportion was not influenced by turnover proportions in light of the fact that there was no critical relationship contemplated between money proportion and turnover proportions. At long last the deals to working capital proportion might be influenced by stock turnover in days and money transformation cycle. Increment in stock turnover in days would build the deals to working capital proportion however increment in real money transformation cycle would diminish deals to working capital proportion.

### **Conclusion**

The after effects of this study give some helpful data about the capital structure of Pakistan leasing industry. Results got from the exact examination demonstrate that development benefit age of the firm and liquidity have huge impact on Pakistan leasing companies. In addition, it can likewise be expressed that the discoveries show prove that static exchange off hypothesis; pecking request hypothesis and organization hypothesis are halfway acknowledged in protection part of Pakistan however the exchange off hypothesis seems to rule the Pakistan protection division capital structure.

### **Future Researches**

There is still parcel of work required in Pakistan to investigate more issues identified with respect to capital structure. Model particular and variables choice can be enhanced in future examines in light of the fact that in this work the high variety considered in budgetary information. The impact of Skewness and Kurtosis can be incorporated as a variable in the model to concentrate more steady results since information instability assume measure part in testing hypotheses.

At the point when returns fall outside of an ordinary circulation, the conveyance displays skewness or kurtosis. Skewness is known as the third "minute" of an arrival dispersion and kurtosis is known as the fourth snapshot of the arrival dissemination, with the mean and the fluctuation being the first and second minutes, individually. (Difference is a measurement that is firmly identified with standard deviation; both measure the scattering of a speculation's chronicled returns.) Ideally, speculators ought to consider every one of the four minutes or qualities of a venture's arrival conveyance.

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## Digital Platforms to Support Feeding, Physical Activity and Training by Cerebral Palsy

**Ileana Hamburg**

Institut Arbeit und Technik, WH Gelsenkirchen,  
Munscheidstr. 14, D-45886 Gelsenkirchen, Germany

**Gabriela Lütgen**

Institut Arbeit und Technik, WH Gelsenkirchen,  
Munscheidstr. 14, D-45886 Gelsenkirchen, Germany

### ABSTRACT

**Cerebral palsy (CP) is one of the most common motor disability in rehabilitation, has antenatal antecedents and is often multi-factorial. Many people with CP are physically inactive, have difficulties with eating and drinking. The authors work together with organisations of people with disabilities, particularly people with CP to find solutions for improving Quality of Life (QoL) of these people. Within the Erasmus+ project CP-WELLBEING the problems are connected with inclusive nutrition, physical activities and training by using interactive ICT platforms. The methods used in the project and the description of the developed training materials are presented in part 5 of this paper.**

**Keywords:** Cerebral palsy, Inclusive Nutrition, Physical activity (PA), Training, ICT Platforms

### INTRODUCTION

Cerebral palsy (CP) is a group of permanent disorders of the development of movement and posture, causing activity limitation, that are attributed to no progressive disturbances that occurred in the developing fetal or infant brain" (Rosenbaum, Paneth & Leviton et al., 2007). CP is one of the most common motor disability in rehabilitation. The cause has been discussed since as chronic encephalopathy in children (Johnston, Moore, Quinn & Smith, 2004).

In 1862, condition and abnormal delivery had been connected with obstetric misadventure. Epidemiological studies and brain imaging underline that CP frequently has antenatal antecedents and is often multi-factorial (Stanley, Blair & Alberman, 2000).

It is estimated that 2 to 2,5 per thousand births in Europe has CP (1 per 500 persons = 1.000.000). CP cannot be cured, but persons can live a full life with proper care and supports, improving movements, intellectual development, level of communication and social relationships, improving their Quality of Life (QoL) according to the Convention on the Rights of Persons with Disabilities.

Nutrition and physical activity (PA) are closely linked with the QoL of persons with CP, especially with their physical and emotional wellbeing.

Many people with CP are physically inactive, some exercises are not possible, depending on the severity of cerebral palsy. But many health benefits may be achieved also by doing less than the recommendations. It is better to stick with a program than to do nothing ([https://s3.amazonaws.com/academia.edu.documents/34183537/physical\\_activity\\_and\\_cerebral\\_palsy.pdf?](https://s3.amazonaws.com/academia.edu.documents/34183537/physical_activity_and_cerebral_palsy.pdf?)).

Eating and drinking are difficult for people with cerebral palsy. This is apparent soon after birth, with babies experiencing problems feeding either from the breast or bottle or may start later in life (<https://www.cerebralpalsyguidance.com>).

The authors work together with organisations of people with disabilities, particularly people with CP to find solutions for improving QoL of these people. Within the project Erasmus+ project CP-WELLBEING these problems are relate to nutrition, physical activities and training by using interactive ICT platforms. The methods used in the project and the description of the developed training materials are presented in part 5 of this paper.

### **INCLUSIVE NUTRITON SUPPORT**

Many people with CP have less energy requirements in comparison with people without CP and these differences increase with increasing severity motor disabilities. Differences are also due to decreased basal metabolic rate (related to reduced lean body mass and adaptation to chronic poor nutrition) and of reductions in physical activity (PA) levels. Energy requirements of children and adolescents with severe CP who utilise a wheelchair for mobility have been are between 60 and 70% of those of healthy typically developing children (Bjornson, Belza, Kartin & McLaughlin, 2006), (Bjornson, Belza & Kartin et al., 2007). Participation in PA including intense rehabilitation, increases the energy requirements of children with CP.

The mode of administration of nutritional support will depend upon the nutritional status of the person with CP and ability to consume adequate quantities of food and fluids orally, and the risk of pulmonary aspiration.

Cerebral palsy can affect the muscles that open and close the mouth and move the lips and the tongue. Some people with cerebral palsy have difficulties in chewing and swallowing food and drink – a condition known as dysphagia. Cerebral palsy often impacts fine motor skills, what can affect the ability of people to easily use cutlery, hold a cup, or transfer food from a plate to their mouth using their hands.

Others suffer from gastroesophageal reflux – where acid from the stomach rises into the oesophagus – and this makes eating uncomfortable or painful but can sometimes be controlled by medication.

It is recommended that first-line treatment involve oral nutritional support including adequate positioning and physical support during meal times. Some children with CP have their eating position but additional body and head support are required to keep them stable and comfortable, and to ensure they swallow safely.

Adaptive feeding equipment could be used to support encourage independence by assisting children to self feed. Thickness of fluids can be modified, if the therapist recommends it to ensure airway safety, maximise eating efficiency and reduce fatigue during mealtimes. Smaller more frequent meals can also useful.

If no specific recommendations for use in individuals with CP, standard recommendations for dietary of vitamins, minerals and trace elements should be utilised. Inadequate dietary may be addressed through the inclusion of foods rich in the micronutrient at risk or through supplementation (Johnston, Moore, Quinn & Smith, 2004).

### **PHYSICAL ACTIVITIES**

One problem is that children and adolescents with CP experience participation restrictions and

limitations in physical activity. PA have been defined as all body movements resulting in an increased energy output from the resting position. Children and adolescents with CP show lower levels of PA compared to healthy people. Lower levels of PA contribute to reduced physical fitness, which may increase the risk of developing secondary health problems such as pain and fatigue, cardiovascular disease and diabetes mellitus later in life. PA is assumed to have a positive relation with health related quality of life and psychosocial functioning (Claassen, Gorter, Stewart, Verschuren, Galuppi & Shimmell, 2011).

Physical activity is very important for persons with CP and they can participate in physical activity even though they have less endurance and execute reduced physical exercises compared to children without CP. The benefits of physical activity and exercises to overall health are well known, especially to people with disabilities who are less likely to engage in physically healthy lifestyles compared to people without disabilities. Inactivity of adults with CP could increase severity of disease and reduced overall health and well-being (Rimmer, 2005). Weakness make it difficult for children with CP to participate in sport and play activities at necessary level of intensity sufficient to develop and maintain normal physical fitness levels. So it is needed to identify effective methods to improve physical fitness for this group and encourage it.

The Centre for Disease Control and Prevention (CDC) have concluded that daily participation in developmentally appropriate, moderate to vigorous physical activity lasting 60 minutes or longer can reduce body fat, encourage weight loss, and improve aerobic fitness in youth aged 6 to 18 years without disabilities (Strong, Malina & Blimkie et al., 2005). Some studies suggest that association exist between physical activity and various indexes of mental health, including anxiety, depressive symptoms and physical self-concept.

### **TRAINING AND INCLUSIVE EDUCATION ISSUES**

Training and education are important issues also in CP people future lives. There are the keys that open the door to all future opportunities. Things which CP people are able to do later are also a result of what they have learned as children. The objectives of the training and education the child receives the skills that he learns, the kind of focus of own education is quite important, both in the short and long term. If the child's training and education is aimed at giving him or her the ability to live independently, the skills that help him to follow a career may be cut short (<http://cerebralpalsy-educationandsociety.com/?>).

The early years of training usually bring changes also for children with CP. In between the ages seven and twelve, a child's rate of physical improvement has levelled off in areas such as balance and coordination, and it is generally considered as a good point in the child's life to refocus their efforts from physical improvement and toward intellectual learning and growth. Children without disabilities are encouraged to concentrate more on academics and less on play, but for the child with CP these years usually involve learning to be independent with an adapted level of physical function.

It is important to consider many factors when choosing a training/ education environment for the child. The child needs to be in an environment where can leave and learn without being overly frustrated. For children with CP is important to interact with children without disabilities, and it is necessary to be in an appropriate training environment.

Many children with CP have also learning disabilities i.e. have a less average level of intelligence or have difficulty processing certain types of information. Or it is possible that



having a learning disability, children with CP are limited in their ability to communicate. In this case teachers may not be able to tell whether or not the child understands the lesson if they are unable to speak. So many children with CP are sent to special education programs, focussed on different therapies, not to academic progress. Digital technologies can sometimes help to include such children in inclusive educational environments (<http://cerebralpalsy-educationandsociety.com/?>).

„Inclusive education is a process of strengthening the capacity of the education system to reach out to all learners. As an overall principle, it should guide all education policies and practices, starting from the fact that education is a basic human right and the foundation for European countries at the beginning; qualified teachers and social workers, methodology are missing (European Commission, 2014).

The use of digital technologies in inclusive education requires many sectors of expertise and activities (European Agency, 2014) like stakeholders input and views, training of education professionals and of ICT developers. Some principles to be taken into consideration in digital technology for inclusive education are (Hamburg & Bucksch, 2016):

- An active involvement of learners with disabilities, their families/representatives in the development and use of ICT.
- Implementation and evaluation with users of services which facilitates learners access to digital technologies.
- The provision of ICT in education of people with disabilities to be aligned with the goals of inclusive education and should be available for formal, informal, blended, social and other forms of learning.
- The implementation of ICT in inclusive education should take a systemic approach.

Inclusive education is not always applied particularly for children with CP. Due to a common misconception of intelligence levels and cognitive ability among children with cerebral palsy, it is important that professionals help to assess child's specific deficiencies, educational strengths and needs.

Learning difficulties can be sometimes detected in the pre-school or early school years and are in connection with other problems of children with CP like visual-perception disorders or language disorders. Sometimes, a child with light CP develop learning disabilities later. Sending the child in an inclusive class room could help to minimize learning disabilities, or even avoid them completely and support learning progress.

It is important that chosen form of education fits the child and that the parents support the child and listen to the problems. It is important to help the child understand that it is not the child fault. Keeping the child's positive image of themselves alive and well will help them to succeed in every facet of life.

### EXAMPLE

Inclusive nutrition and physical activity particularly for people with CP are not fully implemented in Europe due to a lack of:

- awareness and knowledge of parents and professionals about the effectiveness of inclusive feeding techniques from the earliest ages of life
- Feeding ability of many adults with CP who have not been adequately supported in its childhood. They are not sufficiently aware
- and trained on the possibilities for accessing to a healthy and satisfying feeding and accessible tools at their disposal

- awareness and understanding of the impact on the emotional well-being of feeding aggressive techniques usually employed and the importance of food as an element of pleasure and exercise of rights
- initiative and knowledge of PCP and families regarding their participation in inclusive physical activities, alternatives and opportunities missing adequate training supported by ICT Platforms.

The Erasmus+ project CP-WELLBEING ([www.cp-well.eu](http://www.cp-well.eu)) is launched with the main objective of increasing the competences (attitudes, skills, knowledge) of persons with CP, families and professionals about how to implement inclusive feeding and physical activity with a global Wellbeing and QoL approach, through an innovative training program. The project partners come from 5 European countries: Spain, Portugal, Italy, Croatia and Germany and are organisations which work with CP people and research/education institutions.

**The project has some specific objectives:**

- To raise awareness and motivate the full collective about the importance of inclusive feeding and Physical activity as a tool for improving QoL of PCP.
- Transfer knowledge, tools and guidelines to parents of children with CP and professionals to enable inclusive feeding and integrative physical activity from the earliest stages of life
- To transfer knowledge, tools and guidelines for adults with CP, families and professionals,
- regarding inclusive feeding and physical activity

**The following results have been obtained until now:**

- Co-Created Methodological Guide will be developed, with the direct participation of End Users, with the main objective of
- Determining the key contents, methodologies and tools
- Training Materials addressed to persons with CP, families and professionals for facilitating the implementation of inclusive feeding and integrative and adapted physical activity.
- Designed Experiential Training Activities addressed to persons with Cerebral Palsy, families and professionals for facilitating the implementation of inclusive feeding and integrative and adapted physical activity.
- Development of an ICT Platform to support training.

In the following we will describe the Training Platform, for supporting the implementation of Training Materials and Designed Experiential Training Activities. The responsibility for the development of the platform have the authors.

The platform gives information about the project and experiences of project partners within their workshop activities with people with CP, trainers, professionals and parents. The topics of the workshops were Inclusive Nutrition and Physical activities (Figure 1).



Figure 1: Main page of the platform (([www.cp-well.eu](http://www.cp-well.eu)))

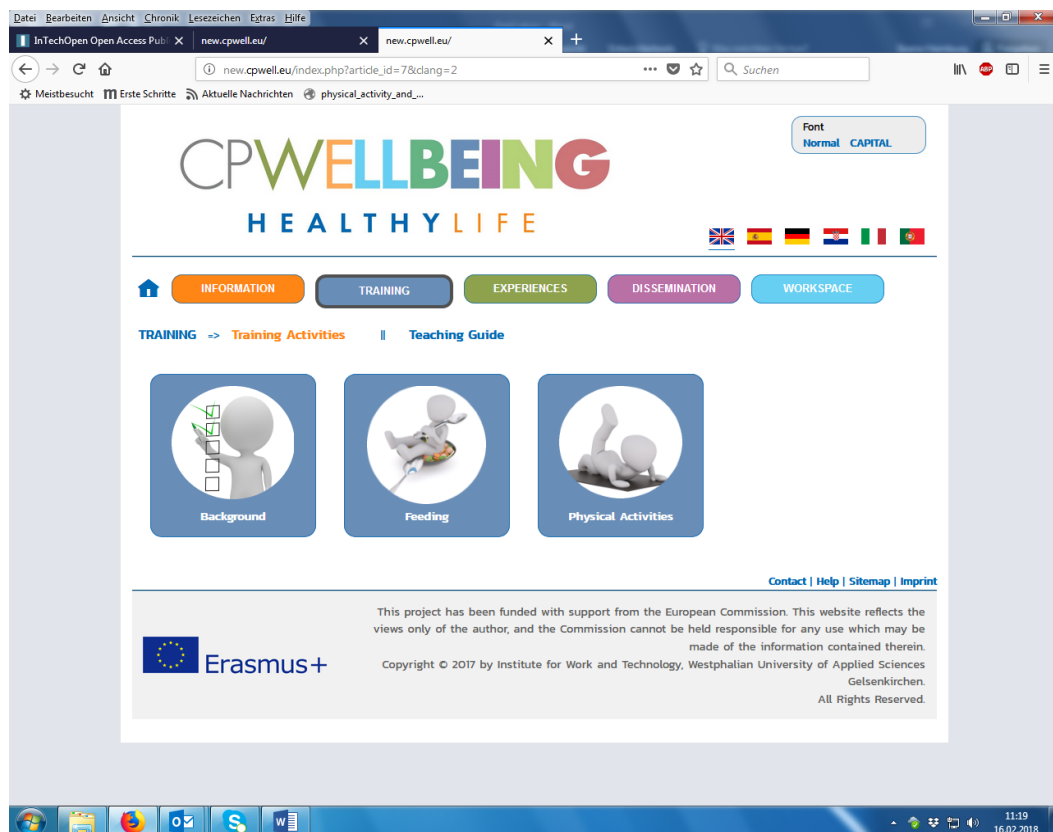
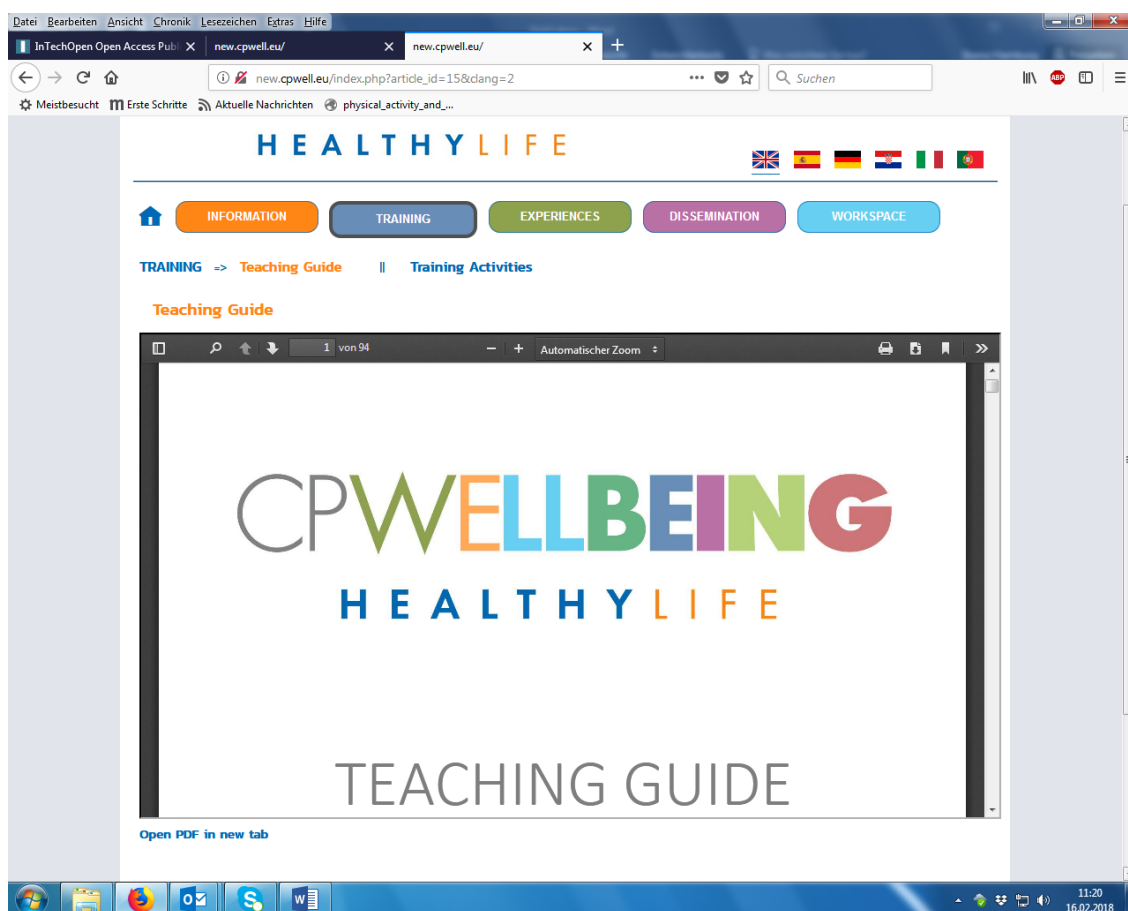


Figure 1: Training activities ([www.cp-well.eu](http://www.cp-well.eu))

Three groups of Training activities have been held and documented on the platform with the topics of General knowledge about CP - Background, Inclusive Nutrition - Eating and Physical Activity. Training material including the steps of workshops and an execution guide are

available in all partner languages on the platform (Figure 2).

A detailed manual for trainers – Teaching Guide is also available in partner languages (Figure 3).



**Figure 3: Teaching Guide (www.cp-well.eu)**

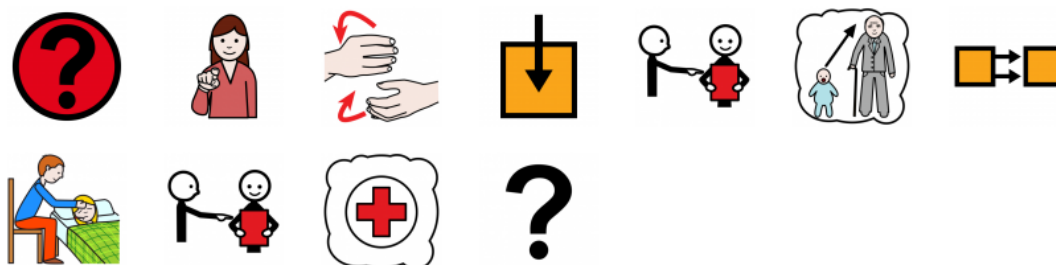
The interaction trainer, trainee, parents takes place within an area which is protected by corresponding password. The trainer can organize the work with trainees: use the existing saved documents, upload new ones, as well as exercises for the trainees. The trainees can use the uploaded documents and upload their homework. The platform shows the results of their homework (Figure 4).

**Homework Training Activity 1**

**Quality of Life interview**

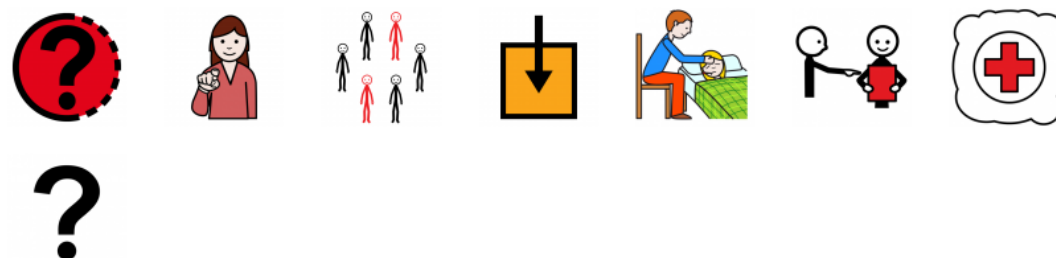
1. What are the habits of your daily life that you follow to take care of your health?

Annex of healthy habits in eating and physical activity. [1]



Please enter your answer

2. How do you participate in carrying out those habits? [2]



Please enter your answer

**Figure 4: Homework (www.cp-well.eu)**

**CONCLUSIONS**

Some children and adults i.e. with CP experience difficulties and require access to and utilization of considerable health care resources and ICT support over time. Many children with this development disorder have nutrition and physical problems and also intellectual impairments. The primary objective of the described project was to help them, the trainers and parents to minimize the difficulties by corresponding training and exercises.

**ACKNOWLEDGE**

The paper describes objectives and outputs of the European Erasmus+ project CP-WELLBEING.

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# On the Economic Health of Vietnam's Construction Industry

**Tristan Nguyen**

Fresenius University, Munich, Germany

**Trung Dung Doan**

Berlin School of Economics and Law, Berlin, Germany

## ABSTRACT

This paper analyzes the economic health of Vietnam's construction industry. The sample data have been collected from 32 construction companies listed on Ho Chi Minh Stock Exchange during 2013 to 2014. Their financial reports have been taken into account to examine the business condition by using the Altman Z-score Model and the Emerging Market Model. In these two models, the impact of Growth, Tangibility, Debt Ratio, Size and Cash Conversion Cycle are proved to be negative in relation with the firm's performance in the original Z-score. We find out in our analysis that the Emerging Market Model is the more appropriate model for assessing the health of Vietnam's construction firms. In addition, further hypothesis tests are conducted to provide a regression analysis of the correlation between the Z-score and the five factors mentioned above. The regression has revealed that none of these factors has positive or negative impacts on Vietnam's construction enterprises.

**Keywords:** firm's performance, Z-Score, emerging market, Vietnam's construction industry, firm's bankruptcy.

## INTRODUCTION

Since the integration of the World Trade Organization (WTO) in 2007, there have been significant changes in many business aspects in Vietnam. Vietnamese enterprises are taking advantage of new opportunities to expand their business across borders to exchange skilled workers and knowledge. Within the process of integration, Vietnam's construction industry has accomplished many targets and effectively contributes to Vietnam's economic growth. Many transportation projects have been built rapidly such as the Railway/Metro system, highways, hydropower, hotels and apartments. Many international standards of material, design and construction techniques have been progressively implemented into the construction projects with advanced equipment for survey and design. Labor skills and knowledge have been improved as required by advanced technologies and construction techniques.

Although Vietnam's construction industry has witnessed great progress in advanced technology, technical development, and the quality of skills and knowledge, the integration of the WTO has also brought with it numerous obstacles and challenges. The traditional business environment prior to the WTO had been protected by Vietnamese Law and through regulations in taxation, transactions, imports and exports. Since 2008, multinational enterprises have considered the WTO as a good opportunity to expand their business into Vietnam, as the result, local enterprises have been facing multiple difficulties to deal with the new competition. This has increased the probability of bankruptcy of Vietnam's construction firms which fail to cope with the new market situation. The problem of bankruptcy can be the result of poor management, inappropriate sales prediction, failure of management in identifying customers' preferences and failure to adapt advanced technologies. At present market, managements are

seeking methods to predict financial distress in order to avoid mistakes in financing, investing and also to ensure the sustainable development of their businesses.

One of the most important tools to assess the economic health of a firm is the Altman Z-Score. The formula analyzes the probability that a firm could go bankrupt within two years. It uses multiple values from the corporate income and balance sheet to measure the economic health of a company. However, the economic health of the firm is also presented in detail by other financial information in the financial report. In this paper, we focus our research on the relationship between financial information and business' performance measured by Altman's Z-Score in order to provide practical insights in assessing business failure in Vietnam's construction industry.

## **RESEARCH OBJECTIVE AND METHODOLOGY**

### **Research Objective**

The construction industry is a distinctive business sector with its unique characteristics. In fact, the construction industry plays an important role in the Vietnamese economy as it attracts many foreign investments (Dang and Pheng, 2015). There has been a positive growth in recent years in laws and regulations due to the change in Vietnamese government, low interest rates and the falling price of building material. However, the construction industry has failed to provide financial transparency to all investors. This paper will explore Vietnam's construction industry as the main objective of information research to measure financial health based on the correlation between internal financial information and the Altman Z-score. Additionally, the information collected will be analyzed to find out whether the Altman Z-score is applicable to predict business failure in Vietnam.

The findings of this research will contribute to assisting the Vietnamese government to be aware of potential risk in targeting globalization and the effect of investment attraction into Vietnam. The result will signify the level of risk in construction businesses as well as the construction industry as a whole. Our research also provides Vietnamese construction enterprises an overview of the construction industry in the process of globalization. This will enhance business development strategy to prepare to compete with multinational enterprises. Foreign investment and other enterprises can adapt our findings as references to implement business strategy that fit into the Vietnamese market and regulations.

### **Research Methodology**

Information from Vietnam's stock market will be collected for the data analysis, including all information about the construction industry, 32 publicly listed construction companies and their financial report from 2013 to 2014. This includes working Capital, Total Assets, Retained Earnings, Earnings before Interest and Taxes, Market Value of Equity, Total Liabilities, Sales, Current Assets, Fix Assets, Equity, Preferred Shares and some other important factors.

The structure of this paper will be based on a regression analysis to examine the factors that can have an impact on the financial health of businesses. For the purpose of this research, some assumptions will be pointed out to test the correlations of the following indicators:

1. Company Financial Growth;
2. Tangibility and its correlation to the company wellbeing;
3. Cash Converted Circle and its relation to company wellbeing;
4. Size of the organization;
5. Debt ratio, the negative effect to the organization.



## LITERATURE REVIEWS AND HYPOTHESIS

### Define the concept of “Failure”

The bankruptcy of Lehman Brothers in 2008 has led to the largest business failure in United State history (Chieng 2013), which affects the whole financial system worldwide. Many academic researchers have emphasized the need of failure definition in order to recognize a firm’s economic health. However, the topic remains unclear when it comes to the common definition of “Failure.” In the absence of such a common definition, it is difficult to develop the appropriate model to assess a business’ wealth and condition in accordance with a specific system and industry.

Altman and Narayanan (1977) asserted that the definition of firms’ failure can be diverse in different forms, but mostly depends on the business environment. Thus, firms which are unable to adapt to changes in business environment can be “weeded out” in the form of bankruptcy, bond default, government intervention and liquidation. Pretorious (2009) gave an in-depth definition of “decline and failure” to guide academic researchers to approach the applicable prediction model. According to Siddiqui (2012), bankruptcy prediction can be conducted by various models such as Logit & Probit Analysis, Recursive Partitioning Algorithm and Neural Network. Combining all the historical development of business failure analysis, Wong and Ng (2010) have concluded that the concept of business failure in the construction field can be defined and subdivided into two different categories:

- *Technical & Financial Capability* which indicates the capability of a business to cope with the natural environment of the business market using internal core competencies.
- *Environment Determinant* which indicates the external factors that affect the well-being of an organization such as government law and regulation, economic conditions and excessive competition within the market.

Focusing on a financial perspective, Enshassi (2006) and McKay (2016) both emphasized the financial soundness of a business as a result of losses to creditors after foreclosure or attachment, unpaid debts or involvement in court action. This is the case when there is a high rate of uncollectable debt; the company voluntarily files for bankruptcy while at the same time they cannot earn adequate returns. Ucbasaran et al. (2013) believe that business failure can be defined even before the establishment of a business. In their opinion, the indication of a failing business is the failure to provide reasonable income for owners and an unfair rate of return to investors. The study of business failure has also exposed the cause of the degradation process of an entity, in which potential failure can be tackled before actual failure (Torres-Coronas et al., 2015). This has led to many studies designing the corrective measurement to escape business failure which can be called a predictive stage (Beaver 1966 and Altman 1968).

### The original formula of the Z-score (Model 1)

In all aspects of business, the term “bankruptcy” has been a natural concept regarding business failure to endure current operation with its own debt obligation. In many studies, bankruptcy is a significant factor that influences the benefit of investors and the economy’s well-being. The forecast of financial insolvency is highly appreciated as evidence in many developed countries. In classical theories, finance difficulty is a form of failure in a creditor’s meeting process (Altman, 1968), the maturity of liability payment (Ohlson, 1980), corporate ongoing concern (Zmijewski, 1984) or at the state of liquidation (Taffler, 1984 and Mckee, 2000) and the increasing of debt ratio (Beaver, 1966). Bankruptcy prediction before business failure can help a company by securing its financial distress and taking necessary actions to reduce risk and even avoid bankruptcy. This is also an important tool for investors to measure the risk of their investment in firms that are vulnerable to bankruptcy.

The Altman’s formula was used to forecast the likelihood of bankruptcy of a firm within two years, signal corporate default and measure a firm’s financial distress. According to Altman (2013), the ratio analysis can be misleading as the method was fundamentally univariate, which emphasizes one individual signal of forthcoming problems. Altman indicated that the more appropriate analysis technique to predict bankruptcy is the multiple discriminant analysis (MDA) by Fisher (1936). Altman customized Fisher’s technique and applied it to financial areas by using statistical information to observe, classify, and predict problems. Thus, he formulated the following formula of the Z-score:

$$(1) \quad Z = 0.012*X1 + 0.014*X2 + 0.033*X3 + 0.006*X4 + 0.999*X5$$

Where:

- X1 = Working capital / Total assets;
- X2 = Retained earnings / Total Assets;
- X3 = Earnings before interest and taxes / Total Assets;
- X4 = Market value equity / Book value of total equities;
- X5 = Sales / Total assets;
- Z = Overall index.

The interpretation of the Z-score Model:

Z score > 2.99	“Safe” zone
1.81 < Z score < 2.99	“Grey” zone
Z score < 1.81	“Distress” zone

**X1: Working capital / Total Assets (WC/TA)**

The ratio is regularly found in the study of business corporate performance. In most cases, the ratio is considered as a tool to test the liquidity of all working capital. It is the measure of a firm’s capability to convert its short-term assets to cash in order to meet short-term obligations. Since the ratio reveals the percentage of outstanding liquid assets compared with the company’s total assets. In normal terms, the current assets tend to decrease compared with total assets when businesses have difficulty in liquidation or operating loss. In other aspects, the company’s liquidity improvement over time will increase the ratio of Working Capital/Total Assets. There are two other tests of liquidity such as the Acid test (quick ratio) and Current Ratio. However, they are less helpful to test the failing condition of firms.

**X2: Retained earnings / Total Assets (RE/TA)**

As a part of the Z-score Model, the ratio RE/TA represents a cumulative account which is an indicator for reinvestment by using the earnings during the financial period. At the end of the fiscal year, the company will use these net earnings to reinvest or to pay off their debt. This ratio shows investors how much a company relies on debt (the smaller the ratio, the higher is the debt ratio of the company). It can be argued that this perception can be biased when it comes to new firms and the chance to be classified as a critical position is high. But it is indeed a real-world situation as more than 50% of new companies that went bankrupt in their first 5 years (Robinson, 2014).

**X3: Earnings before interest and taxes / Total Assets (EBIT/TA)**

This ratio is also called return on total assets (ROTA) which is calculated as a fraction of a company's earnings before interest and taxes (EBIT) against its total net assets. The ratio is an indicator of how effectively a company can use its existing assets to generate earnings before

contractual obligations must be paid. The higher this ratio, the more effectively a company can use its assets.

#### **X4: Market value equity / Book value of total equities (MVE/BVTE)**

Market value of Equity or market capitalization is the combination of both preferred and common stock while liabilities include long and short terms. Investors can explore the firm's assets by assessing the stock market which is the measurement of a firm's value and tackle any potential pending problems through price changes when a firm's liabilities exceed its assets. According to Altman (2013), this ratio delivers a more effective forecast of financial distresses than net worth/ total debt (Book value).

#### **X5: Sales / Total assets (S/TA)**

As an indicator of sales performance, this ratio is an important instrument to indicate sales turnover measurement in any market. It designates the efficiency and effectiveness of assets used to conduct sales. According to Altman (2013), this ratio became one of the most important variables as it has a "unique relationship to other variables in the model" which has a significant impact on the overall discriminating ability of results.

#### **The Emerging Market Score Model (EM Z-score) (Model 2)**

For the Emerging Market Score Model, we use the following formula:

$$(2) \quad Z = 3.25 + 6.56 * X1 + 3.26 * X2 + 6.72 * X3 + 1.05 * X4$$

Where:

X1 = Current Assets – Current Liabilities / Total Assets

X2 = Retained earnings / Total Assets

X3 = Earnings before interest and taxes / Total Assets

X4 = Book Value of Equity / Total Liabilities

The interpretation of Emerging Market Score Model:

EM Z – score >2.60	"Safe" zone
1.1 < EM Z – score < 2.60	"Grey" zone
EM Z – score < 1.1	"Distress" zone

#### **The empirical results and analysis**

The study includes three categories. First, the report will use 32 construction companies listed in the Vietnam Stock Market from 2013 to 2014. Second, the organized data from 32 construction companies will be calculated in the Z-score Model and the EM Z-score Model and be applied to the main methodology. Lastly, the CICB Credit database (The State Bank of Vietnam) which provided integrated information on credit activities, information about credit relations and assets securing loans.

In order to find the better model that statistically applies to the Vietnam Construction Industry, the CICB will be used as a significant guideline to measure the percentage of matching variables that are close to publicly listed firm's conditions. Applying the Z-score Model and EM Z-score Model for the sample of 32 construction companies from 2013 to 2014, the results are represented in Table 1:

Firms		Z-score (Model 1)				EM Z-score (Model 2)			
		2013		2014		2013		2014	
		Z-score Model	Classification	Z-score Model	Classification	EM Z-score Model	Classification	EM Z-score Model	Classification
1	ACC	1,50	Distress	1,05	Distress	12,78	Safe	9,07	Safe
2	BCE	1,01	Distress	0,65	Distress	7,66	Safe	5,76	Safe
3	BT6	0,68	Distress	1,51	Distress	0,68	Distress	212,60	Safe
4	C47	0,76	Distress	0,47	Distress	5,50	Safe	5,17	Safe
5	CDC	0,25	Distress	0,32	Distress	5,91	Safe	6,55	Safe
6	CIG	0,30	Distress	0,42	Distress	7,19	Safe	4,19	Safe
7	CII	0,09	Distress	0,29	Distress	3,28	Safe	4,82	Safe
8	CLG	0,33	Distress	0,15	Distress	4,56	Safe	2,91	Grey
9	CTD	1,37	Distress	1,58	Distress	8,20	Safe	7,52	Safe
10	CTI	0,21	Distress	0,16	Distress	2,86	Safe	3,02	Safe
11	FCN	0,77	Distress	0,62	Distress	6,14	Safe	5,71	Safe
12	HAS	0,44	Distress	0,67	Distress	6,92	Safe	6,05	Safe
13	HBC	0,73	Distress	0,61	Distress	4,10	Safe	4,25	Safe
14	HDG	0,43	Distress	0,69	Distress	5,51	Safe	6,21	Safe
15	HTI	0,19	Distress	0,15	Distress	3,89	Safe	4,17	Safe
16	HU1	0,66	Distress	0,98	Distress	4,60	Safe	5,04	Safe
17	HU3	0,54	Distress	0,55	Distress	5,81	Safe	5,21	Safe
18	LCG	0,15	Distress	0,69	Distress	3,31	Safe	5,19	Safe
19	LGC	0,49	Distress	0,16	Distress	5,82	Safe	6,25	Safe
20	LGL	0,09	Distress	0,27	Distress	3,78	Safe	5,96	Safe
21	MDG	0,47	Distress	0,43	Distress	4,10	Safe	2,42	Grey
22	PPI	0,14	Distress	0,41	Distress	6,42	Safe	7,10	Safe
23	PTC	0,31	Distress	0,37	Distress	6,31	Safe	7,51	Safe
24	PXI	0,61	Distress	0,62	Distress	3,90	Safe	4,15	Safe
25	PXS	0,66	Distress	1,01	Distress	4,24	Safe	5,06	Safe
26	PXT	0,54	Distress	0,62	Distress	4,40	Safe	0,45	Distress
27	REE	0,37	Distress	0,34	Distress	9,12	Safe	9,12	Safe
28	CS5	0,59	Distress	0,64	Distress	4,13	Safe	4,72	Safe
29	SRF	0,79	Distress	0,91	Distress	7,49	Safe	6,28	Safe
30	UDC	0,18	Distress	0,18	Distress	4,35	Safe	4,77	Safe
31	VNE	0,44	Distress	0,65	Distress	3,68	Safe	6,37	Safe
32	VSI	0,35	Distress	0,46	Distress	3,65	Safe	4,24	Safe

**Table 8: Results for 32 construction companies in Vietnam**

<b>Classification</b>	<b>Year 2013</b>	<b>Year 2014</b>
Distress Zone (<1.81)	32 (100%)	32 (100%)
Grey Zone (1.81 - 2.99)	0 (0%)	0 (0%)
Safe Zone (> 2.99)	0 (0%)	0 (0%)
<b>Total</b>	<b>32 (100%)</b>	<b>32 (100%)</b>

**Table 9: Result summary of Z-Score Model (Model 1)**

<b>Classification</b>	<b>Year 2013</b>	<b>Year 2014</b>
Distress Zone (<1.81)	1 (4%)	1 (4%)
Grey Zone (1.81 - 2.99)	0 (0%)	2 (6%)
Safe Zone (> 2.99)	31 (96%)	29 (90%)
<b>Total</b>	<b>32 (100%)</b>	<b>32 (100%)</b>

**Table 10: Result summary of EM Z-Score Model (Model 2)**

The summary of interpretation for Model 1 and Model 2 show the final results of the Z-Score and EM from 32 construction enterprises for the entire study period. Obviously, the results are different between the two models. With the sample of 32 construction enterprises, the Z-Score Model shows the high probability of insolvency of 100% adding to a Z-score <1.81 with high probability of bankruptcy. In contrast, the EM Z-score Model shows the high probability of business being sustainable with 31 companies in "Safe zone" in 2013, and started to decrease to 29 companies in 2014.

Statistically, the information taken from the CICB Credit database (The State Bank of Vietnam) has shown that the EM Z-Score Model describes the accurate financial distress information of construction firms in 2013 at 4% and 10% in 2014. This suggests that the EM Z-score Model can predict the probability of financial distress better in 2014 at around 6%. Additionally, other construction enterprises in the safe zone in 2013 started to decline in the following year reflect the potential of financial difficulty. In other words, the EM Z-score Model measures the firms' financial performance more accurately and is well predicted over a short period of time. Furthermore, in consideration of each variable in the EM Z-score Model such as the Value of Equity/Total Liabilities, it is proved that the ratio should be positive in order to have better EM results. This indicates that in the construction industry, the more attractive market price the firms have, the better financial position they have. In other words, the stock market of a construction firm can affect its future sustainability. Consequently, by conducting analysis of the EM Z-Score model, companies can avoid potential distress by managing and using long-term assets more efficiently and effectively.

With Model 1, it seems to have no change in the companies' performance during the study period. The percentage of firms in distress still remains (at the point <1.81), which also means that none of these firms can escape from financial distress, while the information provided in Model 2 shows a high percentage of construction companies can actually survive at least in two years. Based on the Credit Information Center of Vietnam (State Bank of Vietnam), there are only two enterprises that are dealing with potential financial difficulty (BT6 and PXT). This reveals that the Vietnam Stock Market is completely different from Model 1.

Other than that, when it comes to the consideration of previous literature, the Value of Equity in Model 1 and Model 2 are based on totally different numbers. While Model 2 is based on the Book Value equity, Model 1 focuses more on the Market Value of Equity. In fact, Market Value of Equity cannot reflect the real condition of the company's performance. Recent years have

witnessed a substantial down turn in the Vietnam stock market which resulted in the depreciation of \$1.78 Billion of market share. This indicates that the Vietnam stock market is not stable and in most cases, investment may be influenced by herding behavior in bullish and bearish markets (Vo and Phan, 2016).

Overall, the EM Z-score model is more compatible to investigate a company's financial performance in the Vietnam stock market than the Z-score as it enhances management's ability to predict potential financial distress. In addition, the EM Z-Score Model has a higher percentage of matching with the Vietnam Stock Exchange conditions. Since 2008, the Vietnam Stock Exchange has been unstably recovered from the massive drop down which has motivated investor's herding behaviors to purchase stocks. Moreover, the stock market in Vietnam is considered as an Emerging Market with low performance of financial management, lack of information transparency which is also affected by economy and the market system weakness (Dao and Tu 2014). Therefore, the EM Z-Score Model is an appropriate estimating instrument to predict the company's performance as it concentrates on the market credit risk in order to arrive at the final modified rating (Altman, 2005).

### FURTHER ANALYSIS

#### Impact of other Financial Factors

After studying the correlation of Altman's two models to the financial performance of construction enterprises in Vietnam, we have shown that the EM Z-Score Model is a better model for answering the question whether a business is undergoing concern. However, other financial factors can also have an impact on the success of a firm. Is there any correlation between these financial factors and the financial ratio of the EM Z-score? To answer this question, the following five important factors will be examined to measure their significance to companies' performance and their correlation with Altman's EM Z-Score Model.

- *Company Financial Growth* can be defined as the mean of achieving higher value added and a goal of long-term survival of an organization. In other words, growth is the increase of sales revenue and value creation of assets. Growth can also affect business reputation in terms of market credibility. By increasing the revenue of products and services, firms can create a better reputation within the market that allows the process of expansion and acquisition. Furthermore, sustainable growth can create a strong financial condition which enhances the ability to compete with other opponents. On the other hand, the higher revenue implies that the investing strategies of an organization is on the right path, which can create more opportunities for success and long-term development.

$$ROA = \frac{\text{Net Income} + \text{Paid Interests}}{\text{Total Assets}}$$

$$ROE = \frac{\text{Net Income}}{\text{Total Shareholders' Equity}}$$

- *Tangibility* refers to the volume of a company's assets. In the construction industry, tangibility of an organization is also an important factor that ensures that businesses perform their project at high levels of efficiency and effectiveness. It is a combination of buildings, machines, and human resources. In the procurement process, it is by far most important to underline the existing assets available in stock that perfectly handle the construction package. In other words, a higher volume of tangibility the better corporate performance a company has. This is the case of the Vietnam construction industry when a larger firm may find it easier to win the package in procurement.

$$FATA = \frac{\text{Net Fixed Assets}}{\text{Total Assets}}$$

- *Cash Conversion Cycle* – the critical component which can define the success or failure of the construction industry. It measures the ability of a company's management to generate cash through the financing and investing process, in which, the efficiency and effectiveness of the enterprise will be calculated and expressed in the length of time to receive cash back. This calculation explains how fast management generates cash for a company. In the construction industry, more cash inflows in a short period of time means success in corporate performance. As the cash conversion cycle is an inclusive measure of management in accounts receivable, inventory and accounts payable, it is important that management should not ignore the significance of short term liabilities and current assets. Thus, management must take it seriously as a way to measure the risk and return of cash to overcome the failure of paying off current obligations of maturity assets.

$$DSO = \frac{\text{Accounts Receivable}}{\text{Total Credit Sales}} \times 365$$

$$DSI = \frac{\text{Inventory}}{\text{Cost of Sales}} \times 365$$

$$DPO = \frac{\text{Accounts Payable}}{\text{Cost of Sales}} \times 365$$

$$CCC = DSO + DSI - DPO$$

- *Size of the organization* is the term of market capitalization volume. Statistically, it measures the quantity of sales and assets of a firm during its operation. In fact, a larger operation means the increase in market power and revenue creation. The size of an organization indicates not only the number of employees, the large volume of assets but also the control of market share. The larger size of an organization tends to affect other competitors in the same industry and even allowed them to acquire small firms that are not in competitive advantage. According to a previous study, the larger size of an organization is proven to be a positive sign to reduce the potential of bankruptcy, and higher growth rate indicates better performance of an organization (Nguyen and Nguyen 2015). However, the other side of market dominance is the reluctance to change in the corporate system when there is a change in customers' behavior and purchasing pattern. The story of Nokia corporation is an example of business failure in recognizing competition in a real market. Big companies have a tendency to ignore potential competitors as they are dominating the market.
- *Debt ratio* – The sum of Short-Term Debt and Long-Term Debt over Total Assets. They are the reflection of business obligation in the financing process in the short term such as a loan or accounts payable. A high level of Debt ratio means the negative effect on the organization when management failed to pay back mature liability to increase their return on investment. This is the financial risk when debt maturity cannot be paid off because of a company's poor investing and operating performance that cannot raise enough cash to pay regular interest and a lump-sum principle payment. A poor Debt ratio may indicate low performance of management to raise money or return on their investment.

$$DR = \frac{Total\ Debt}{Total\ Assets}$$

### Empirical Results

Table 4 shows the sample statistics of 32 construction companies. Overall, the mix of samples in 32 construction enterprises illustrate the significantly large number of Tangibility of 0.37 (37%) which is acceptable as the average market value of the construction industry is rising constantly around 10% in 2015 with the volume of import material in 2016 of 32% (Vietnam report, 2016). In addition, the average Growth rate is also another result of significant increase in growth of all study samples. The mean of growth is 3.81 which indicates that in two years the average sample firms have a growth of 381% in overall. The standard deviations are 28.46 and 1.15 for Growth and Tangibility respectively. Lastly, the average ROA in study sample is acceptable, however, this rate of return is still lower than the average market value which may not satisfy investor expectation. Standard deviation of ROA is 0.41.

	Mean	Std. Deviation	N
<b>Z-Score</b>	2.869568	12.771	64
<b>Growth</b>	3.816258	28.46548	64
<b>TANG</b>	0.373105	1.158528	64
<b>Debt</b>	0.642419	0.164601	64
<b>CCC</b>	338.4723	384.7222	64
<b>Size</b>	12.08023	0.392447	64
<b>ROA</b>	0.1219	0.41906	64

**Table 11: Sample’s descriptive statistic and EM Z-Score**

The mean of Debt ratio (Debt) at the average of 0.64 (64%) demonstrates that there are a high number of construction companies using debt as a source of finance. In 32 samples of construction companies, there are 26 enterprises using debt orientation to finance their business. In the case such as Construction 47 Ltd. (C47), the proportion of debt used for financing its business was 90.48% and still remained the same pattern from 2013 to 2014. There are only 6 out of 32 construction enterprises using equity as the main source of finance such as REE, ACC, PTC, HAS, CTD and LGC. They tend to keep the low debt in two consecutive years at the range from 20.08% to 47.09% in percentage of debts over assets.

The sample has an average size of 12.080 reflects the volume of Vietnam construction enterprises. This sample is acceptable as the range of Size is from 100 billion to 6.189 billion in terms of Net Credit Sales. However, the credit sales may cause financial risk as the Cash Converting Cycle (CCC) is deemed to be high at the mean of 338.47. The CCC sample restates that construction companies are struggling to pay off their debts and current interest because they have to wait 338.4 days to receive cash from financing. Finally, the standard deviation of Size and CCC are 0.392 and 384.72 respectively.



<b>Growth</b>	0.006
<b>TANG</b>	0.183
<b>Debt</b>	-1.332
<b>CCC</b>	1.53E-05
<b>Size</b>	1.604

**Table 12: The regression from EM Z-Score**

The regression coefficient of Growth, Tang, Debt, CCC and Size for Z-Score are 0.006, 0.183, -1.332, 0.0, 1.604 respectively (see Table 5). This means that if Growth increased by 1% the Z-score will increase by 0.006, 0.183, 1.604 and decrease by 1.332. Although the final result shows the increase of most of the betas, however, this equation is not showing the significance of all the financing factors that can affect the result of the Z-score. Adjusting the R-Square has been taken to account which shows the insignificance of correlation between all financing factors within the equation and Z-score.

### Interpretations

The regression shows that there is no correlation between **Growth**, ROA and business's performance, especially in the Vietnam construction industry. This finding may lead to the point that the increase in a firm's ROA and Growth is not necessary to have the increase in a firm's performance. As the result, this finding outlines the fact that a company's growth may be the result of external factors such as economic conditions, the tendency of urbanization, and changes in law, regulation in real estate and the construction industry (BMI Report, 2015). Firstly, the Vietnam economy in recent years has been stabilizing which enhances the growth of the construction industry. Vietnam's economy in 2015 and 2016 remained stable with a low inflation rate and interest rate, while consumer's consumption has been increasing over the period. This has positively boosted construction industry and the whole economy. Secondly, the tendency of urbanization is one of the foundations for the advance of a civilized construction sector. According to the World Bank (2012), Vietnam is urbanizing at the rate of 3.4% per year in two large economic centers, Hanoi and Ho Chi Minh City. That takes an important role in economic growth and reduction of poverty.

According to our analysis, **Tangibility** was insignificant in all cases of the regressions, while it takes a very high proportion of total assets in the study samples. In previous assumptions, tangibility is expected to be the most important factor of construction enterprise as it represents the capital investment that can generate revenue and income. However, the result from the regression analysis does not show any correlation between the size of a firm's assets and the company's performance. This has leads to the conclusion that tangibility may not affect the performance of construction enterprises at all.

The regression results in Table 2 show that **Cash Conversion Cycle** has a positive but insignificant impact on the Z-Score. Our analysis has also revealed an average of receivable collection period of 338 days. This result may signify the problem of a going concern in the construction industry where management has failed to deliver a short period of cash conversion. However, the regressions have concluded that cash conversion cycle is not an affecting factor to the change of Z-Score model and ROA. As the result, Vietnam construction enterprises are not stimulated by the factor of cash conversion cycle.

In a previous study, **Size** of a firm defines how much success management can be in the market. The larger the size of a firm means the higher the rate of return in investment. In our analysis,

we found a positive relationship between size and EM Z-Score (see Table 5).

Based on sample statistics, there are over 43% of construction companies that have a Debt ratio of more than 70%, the proportion of 35% of construction firms have a **Debt Ratio** range between 50% to 70% and the remaining companies stay below 50%. In normal business practice, the high rate of Debt ratio can raise problems for a profitable business if they cannot pay off the mature debt. However, it seems that this financial risk is not a considerable problem for 32 construction companies.

### CONCLUSION

This paper analyzes the impact of Altman's Z-score and other financial factors on Vietnam's construction enterprises. Previous Altman's studies and others recognized the importance of the Z-Score formula to the failure or success of a firm. However, it is relevant to have a study of the construction industry in Vietnam in application of the Altman Z-score and other financial factors. As the Vietnamese market is considered as an emerging market, the study of Emerging Market Z-score has been used to compare and contrast with the original model. The results have approved the Emerging Market Z-score to be the more appropriate model for construction companies listed in the Vietnam stock exchange. Furthermore, some other important factors that can determine the well-being of corporate performance such as Tangibility, Growth, Size, Cash Conversion Cycle and Debt Ratio are also examined in the hypothesis regression. The hypothesis regression results have revealed that Tangibility, Growth, Size, Cash Conversion Cycle and Debt Ratio have no significant correlation with the Z-score equation. This also means that none of these factors can have either a positive or a negative impact on Vietnam Construction enterprises.

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## Curaçao: Smart Nation From Smart city to Sage society

Dr. Miguel Goede

### ABSTRACT

**Purpose** – The purpose of this article is to describe the case of Curaçao striving to become a smart nation. Many in Curaçao talk about Smart Nation, Smart Island and the blue economy. In practice not much is noted, till now. Why? **Methodology** – For this study, a literature review was conducted and interviews were held with key figures. Several webinars were conducted and a conference was attended. The draft version of this article was discussed with key persons. **Findings** – In general Curaçao is not good at implementing policies. Some of the causes include the fragmentation of the society as well as its leadership; as a consequence of patronage and nepotism, incompetent managers and professionals are appointed in key positions. For Curaçao to become a smart island the mindset of the people must shift. **Originality** – The paper contributes to the understanding of obstacles in the development of small island states. **Conclusions** – The small scale of Caribbean SIDS is a disadvantage. There are not enough resources and smart people around. Small scale leads to an island mindset characterized by nepotism and patronage, among other issues, and this is an underutilization of the bright minds needed to create the smart city. The possibility of moving from developing country to developed country in one generation is theoretically possible (Lee, 2000). One condition sine qua non is education and the proper mindset. The other is zero tolerance for corruption.

**Key words:** Caribbean, Small Island Developing States, Curaçao, National Development Plan, Smart city, Smart Island, Blue economy

### INTRODUCTION

During the last two elections in Curaçao (5 October 2016 and 28 April 2017), several political parties campaigned on the issue of developing the island into a Smart Island (SI) (PAR, 2017). Just prior to the elections the island government organized a conference on the topic of a Smart Nation. It was probably inspired by the case of Singapore's intelligent island (Curaçao Chronicle, 2017). The agreement the new government coalition signed states:

*The government will develop and promote economic activities and investments in the downtown area based on the vision for Willemstad in the 21st century ("Smart City"); a city on the world heritage list of UNESCO but with a modern, futuristic, inclusive ecosystem for a vibrant entrepreneurial sector, access to state-of-the-art ICT technology and connectivity, hospitality and modern housing for tourist and locals (especially the younger generation), and a center for education, culture and recreation accessible to the whole population. This development must be the model of how to improve the quality of living in all the other neighborhoods of the island (Samenwerkende partijen, 2017).*

In other policy domains presented in the agreement there are also other statements referring to the smart city (SC) and smart island (SI). These will be discussed later in this paper. This is not totally new. The National Development Program of Curaçao (Government of Curaçao, 2015), the long-term vision for the island of Curaçao, already mentions the concept of a smart city.

The purpose of this article is to assess the efforts of the government of Curaçao to develop the SC. The questions are: What are the specific actions the government and other stakeholders have undertaken to move toward a smarter city? What is the level of ambition of the government? What is the current situation of the city? What is the gap between the level of ambition and the current state and what is being done to diminish this gap?

The challenge is that Curaçao is famous for making plans and not implementing them (van der Maas, 2008; Goede, 2011 a). It is quite possible that there will be many documents and statements on SI or SC but not enough action. On the other hand, this would not be unique to the island. For example, research in the Netherlands has shown that this is also the case there (Wijs de et al., 2017).

### **METHODOLOGY**

For this study, a literature review was conducted. After that a model was adopted. Interviews were held with key figures. A mini-webinar was held on 31 October 2017 to discuss the research. A second one was held 20 November 2017, and a third on 24 November 2017. A CINEX conference was held from 29 November 2017 till 1 December 2017. The draft version of the article was sent to key persons for their comments.

The primary data consisted of interviews of key figures like public representatives, managers of organizations and institutions, co-working spaces and specialists on innovation. Secondary data were obtained from the Bureau of Statistics, compilations of press articles and the online content of web pages. Altogether, the author has followed a data triangulation strategy to seek data validation based on the cross-verification of the analyzed data sources.

### **LITERATURE REVIEW**

The term smart city was first coined in 1998 by Van Bastelaer (Anthopoulos, 2015), but the term smart city remains not clearly defined (VINCI Energies, 2015). In this article a smart city is defined as: “a well-defined geographical area, in which high technologies such as ICT, logistics, energy production, and so on, cooperate to create benefits for citizens in terms of wellbeing, inclusion and participation, environmental quality, intelligent development; it is governed by a well-defined pool of subjects, able to state the rules and policy for the city government and development” (Dameri, 2013, p. 2549).

Smart Island Initiative, a European organization of small islands, defines a “Smart Island as an insular territory that embarks on a climate resilient pathway, combining climate change mitigation and adaptation efforts, in order to create sustainable local economic development and a high quality of life for the local population by implementing smart and integrated solutions to the management of infrastructures, natural resources and the environment as a whole, supported by the use of ICT, all while promoting the use of innovative and socially inclusive governance and financing schemes” (Smart Island Initiative, 2017).

The emphases differ between SI and SC. SI puts more emphasis on climate change, while SC accentuates technology more. In this case of this article the words city and island are interchangeable; however, SI emphasizes the issue of climate change.

Other terms that have been used include cyberville, digital city, electronic communities, flexicity, information city, intelligent city, knowledge-based city, MESH city, telecity, teletopia, Ubiquitous city, wired city.<sup>1</sup>

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<sup>1</sup> Smart city. (2017). *En.wikipedia.org*. Retrieved 4 December 2017, from [https://en.wikipedia.org/wiki/Smart\\_city](https://en.wikipedia.org/wiki/Smart_city)

Mahizhnan (1999) published an article titled “Smart cities: the Singapore case”. Singapore wanted to be known as an Intelligent Island. He describes several stages that Singapore went through, beginning in the 1960s by focusing on industrialization and attracting multi-national corporations (MNC). The 1980s saw the rise of the service sector and the development of the vision of the Intelligent Island, focusing on IT and its advantages. The island invested huge sums in IT infrastructure. The educational system was always synchronized with the vision. Another key factor was the clean government policy—no corruption. Mahizhnan concludes that bandwidth was key, but also what he called bandwidth of the mind. ICT can be used for good and evil. The smart community should make smart choices; it is about attitude or mindset.

Clancey (2012) describes Singapore’s move from Intelligent Island to biomedicine in the 1990s. “This essay tells a cultural and political history of biomedicine in Singapore. It takes as its starting point the ‘Intelligent Island’ discourse of the 1990s. It argues not for continuity but dissonance between the two projects, while embedding them in local as well as global cultural politics. Singapore’s adaptation of biomedicine was more than an economic decision, and has had more than economic consequences” (Clancey, 2012).

### **Internet of Things**

Wantmure and Dhanawad state in their article based on India that the Internet of Things is essential to the concept and the realization of the smart city (2016). The Internet of Things is a network of internet-connected objects able to collect and exchange data using embedded sensors (Meola, 2017).

Some authors state that Barcelona is the number one smart city. They also highlight the role of the Internet of Things (Wi-Fi, Smart Mobility, Smart Water Management System, Smart Lighting System, Smart Parking System), but there is much more to it. Cities are very attractive to life. The other side of the coin is that cities occupy 2% of the surface of the earth and produce about 70% of the pollution. These challenges also stimulate the development of the smart city to seek solutions (Madakam & Ramachandran, 2015; Capdevila & Zarlenga, 2015). The World Economic Forum (WEF) is also increasingly referring to the SC. WEF is a Swiss foundation with a mission statement of “commit[ment] to improving the state of the world by engaging business, political, academic, and other leaders of society to shape global, regional, and industry agendas.” WEF states that SCs will eventually be more important than nation states (Tavares, 2017). In an infographic (Figure 1), they illustrate why.

# The increasing relevance of cities.

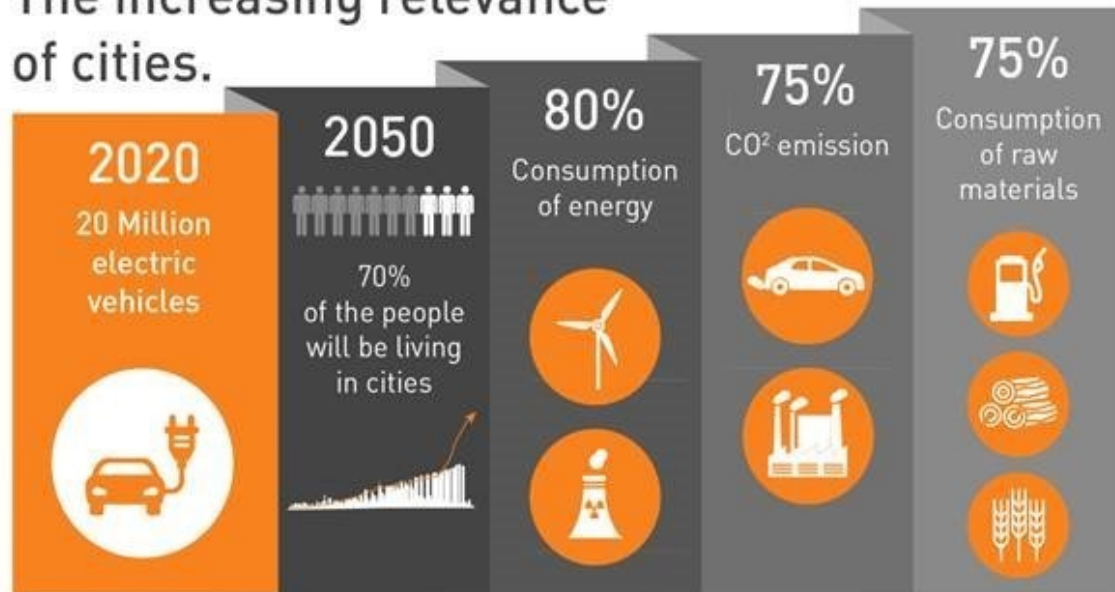


Figure 1: Visual Capitalist (Desjardins, 2017)

Technology might solve the problems created by cities. Visual Capitalist presents the following model to picture the SC (Figure 2).

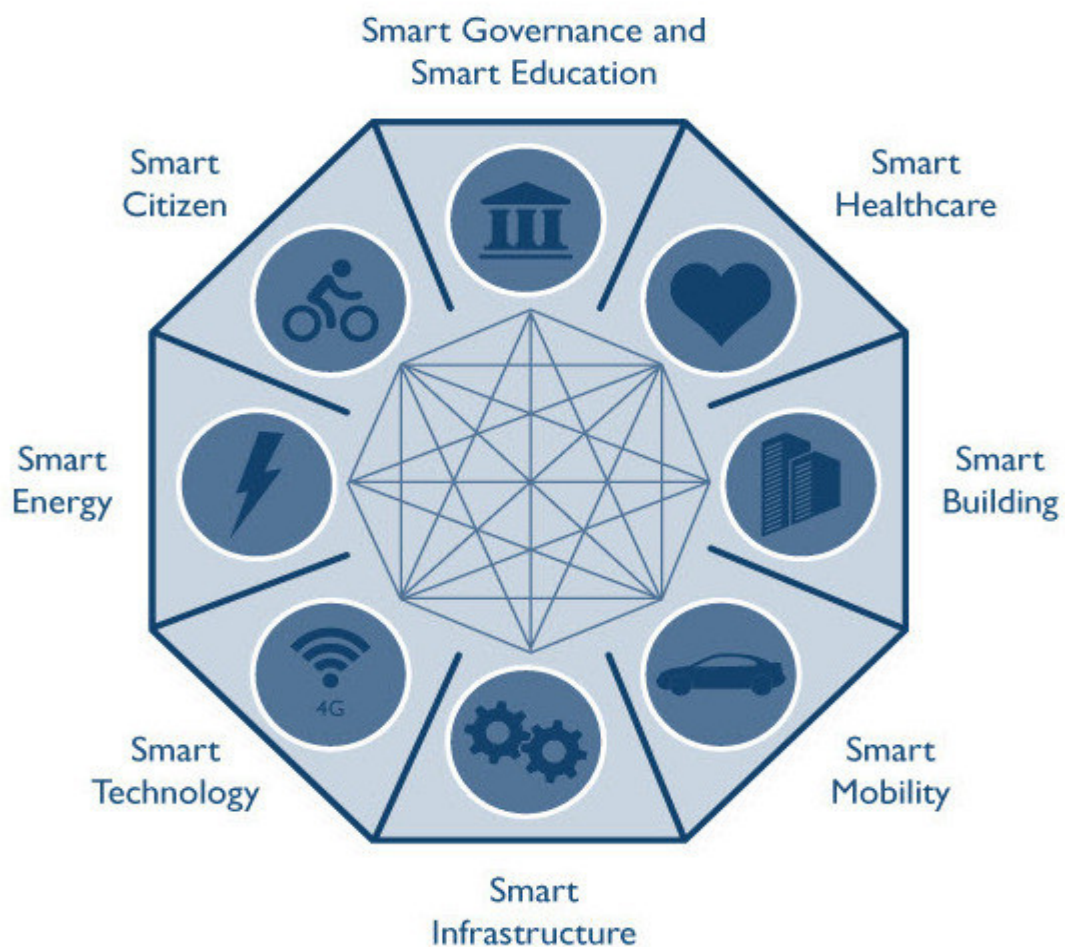


Figure 3: Visual Capitalist (Desjardins, 2017)

Zhou (2014) presents an interesting evolution line of the city in his article based on his experience at the 2010 Expo in Shanghai China with the theme ‘better city, better life’.

Smart city	Economic crisis in 2008	The smart technological revolution
Information city	Economic crisis in 1987	The information technological revolution
Digital city	Economic crisis in 1929	The third technological revolution
Industrial city	Economic crisis in 1857	The second technological revolution

**Figure 4: Evolution line (Zhou, 2014)**

Zhou states that the smart city is not only about technology; it is the synergy between the physical city and the digital city. It is also about all-around innovation of urban space, economics, society, system and management (Zhou, 2014). Maggie Aderin Pocock’s vision of the SC of 2116 includes people transporting themselves by drone and printing their food (Montaqim, 2016).

Li et al. (2017) also studied the development of SCs in China. They mention the role of IMB, which introduced the concept “Smart Planet” in 2009. In 2013 there were 193 approved pilot projects of SCs. They identified three actors and four layers, as illustrated in the next matrix (Figure 5).

<b>Application layer</b> Smart transportation, Smart Energy, E-Hospital			
<b>Platform layer</b> Internet of Things platform			
<b>Network layer</b> 4G			
<b>Sensor layer</b> Smartphone, Sensor			
	<b>Government</b>	<b>Society</b>	<b>Market</b>

**Figure 5: Li et al. (2015).**

**Big data**

The SC is also associated with

*how cities are being instrumented with digital devices and infrastructure that produce ‘big data’. Such data, smart city advocates argue, enables real-time analysis of city life, new modes of urban governance, and provides the raw material for envisioning and enacting more efficient, sustainable, competitive, productive, open and transparent cities. (Kitchin, 2014)*



In his inaugural speech as professor in the Netherlands, Meijer (2015) presented interesting concepts. He perceives smart cities as a datapolis. There are three variations of the datapolis: cockpit, hybrid or flock of birds (Figure 6). The two extremes are top-down and bottom-up approach (Capdevila & Zarlenga, 2015).

Cockpit	Hybrid datapolis	Flock of birds
Paternalistic	Coproduction	Participative society

Figure 6: Three variations of data polis (Meijer, 2015)

The datapolis has a nature, has promises and holds premises (Figure 7).

		Criticism
nature	A community that uses data for individual as well as collective objectives. Politics is influenced by data.	
promises	Effectiveness Innovation Legitimacy	
premises	The usage of data can be controlled. Everybody benefits from the datapolis. We can better the world thanks to the datapolis. We can solve problems by using data.	It is unpredictable.  There are special interests.  Technology frames the problems we identify. Not all problems are data related and data systems create problems of their own.

Figure 7: The datapolis has a nature, has promises and holds premises; criticisms of the premises (Meijer, 2015).

Meijer (2015) formulates the conditions for shaping the datapolis (Figure 8).

Not a city for people but a city of people	Citizens are directly involved in and co-owners of the datapolis.
A city for all people	There are no outcasts.
A city for all aspects of humanity	All citizens interact and grow personally.
A city for people of today and tomorrow	The datapolis is sustainable for the next generation.

Figure 8: Meijer (2015) formulates the conditions for shaping the datapolis.

**Corporations, telecom companies and consultancy firms**

IBM is one of the drivers of SCs (Scotto, Ferraris, & Bresciani, 2016). Also, the major consultancy firms have started units focusing on helping cities to become smart (Deloitte Nederland, 2016). Multinational corporations are important drivers. They partner with cities and try out their technology. One example is the developments in Toronto by Google (Garfield, 2017).

Telecommunication service providers still benefit from their advantage in networks and

expand into other areas. The local government plays a key role in developing SCs, because they buy SC solutions from companies. In the future the construction of SCs will become market-oriented and the government will focus on standardization, law making, planning and comprehensive arrangements, and there will be more Public Private Partnerships (PPP) in developing SCs (Li et al., 2015).

Neirotti, De Marco, Cagliano, Mangano, and Scorrano (2014,) in their extensive literature review, refer to Mahizhnan's (1999) article on Singapore.

*The results of this study have revealed that there is no unique global definition of SC, and that the current trends and evolution patterns of any individual SC depend to a great extent on the local context factors. City policy makers are therefore urged to try to understand these factors in order to shape appropriate strategies for their SCs. This study is in particular based on a framework that could also be applied to make a better selection of investment opportunities in periods of limited financial resources and to prioritize SC initiatives in the various domains and sub-domains of potential implementation, considering their ability to maximize the benefits associated with the specific competitive characteristics of an SC.*

Another such study by Lombardi, Giordano, Farouh and Yousef, (2012) reached the same conclusion. There is no consensus on the definition of smart city.

### **Models**

The Centre of Regional Science (SRF) of Vienna University of Technology, in its research "Smart cities – Ranking of European medium sized cities", discovered that there are many fields of activity in relation to the term smart city. This led the group to develop this list of six characteristics:

1. Smart People
2. Smart Economy
3. Smart Governance
4. Smart Mobility
5. Smart Environment
6. Smart Living

Even within these key characteristics there is still a lack of uniformity within smart cities (Figure 9).

(Pilloni, 2017; Giffinger, Fertner, Kramar, Kalasek, Pichler-Milanovic, & Meijers, 2007).

<p><b>SMART ECONOMY (Competitiveness)</b></p> <ul style="list-style-type: none"> <li>• Innovative spirit</li> <li>• Entrepreneurship</li> <li>• Economic image &amp; trademarks</li> <li>• Productivity</li> <li>• Flexibility of labor market</li> <li>• International embeddedness</li> <li>• Ability to transform</li> </ul>	<p><b>SMART PEOPLE (Social and Human Capital)</b></p> <ul style="list-style-type: none"> <li>• Level of qualifications</li> <li>• Affinity to lifelong learning</li> <li>• Social and ethnic plurality</li> <li>• Flexibility</li> <li>• Creativity</li> <li>• Cosmopolitanism / Open-mindedness</li> <li>• Participation in public life</li> </ul>
<p><b>SMART GOVERNANCE (Participation)</b></p> <ul style="list-style-type: none"> <li>• Participation in decision-making</li> <li>• Public and social services</li> <li>• Transparent governance</li> <li>• Political strategies &amp; perspectives</li> </ul>	<p><b>SMART MOBILITY (Transport and ICT)</b></p> <ul style="list-style-type: none"> <li>• Local accessibility</li> <li>• (Inter-)national accessibility</li> <li>• Availability of ICT-infrastructure</li> <li>• Sustainable, innovative and safe transport system</li> </ul>
<p><b>SMART ENVIRONMENT (Natural resources)</b></p> <ul style="list-style-type: none"> <li>• Attractivity of natural conditions</li> <li>• Pollution</li> <li>• Environmental protection</li> <li>• Sustainable resources</li> </ul>	<p><b>SMART LIVING (Quality of life)</b></p> <ul style="list-style-type: none"> <li>• Cultural facilities</li> <li>• Health conditions</li> <li>• Individual safety</li> <li>• Education facilities</li> <li>• Tourism-attractive</li> <li>• Social cohesion</li> </ul>

**Figure 9: Characteristics and factors of a smart city (Pilloni, 2017; Giffinger, Fertner, Kramar, Kalasek, Pichler-Milanovic, & Meijers, 2007).**

Neirotti et al. (2014) developed a matrix of smart city domains and sub-domains. The domains coincide with those presented by Anthopoulos (2015).

Domain	Sub-domain	Description
Natural resources and energy	Smart grid	Electricity networks able to take into account the behaviors of all the connected users in order to efficiently deliver sustainable, economic, and secure electricity supplies. Smart grids should be self-healing and resilient to system anomalies.
	Public lighting	Illumination of public spaces with street lamps that offer different functions, such as air pollution control and Wi-Fi connectivity. Centralized management systems that directly communicate with the lampposts can allow reducing maintenance and operating costs, analyzing real-time information about weather conditions, and consequently regulating the intensity of light by means of LED technology.
	Green/ Renewable energies	Exploiting natural resources that are regenerative or inexhaustible, such as heat, water, and wind power.
	Waste management	Collecting, recycling, and disposing waste in ways that prevent the negative effects of an incorrect waste management on both people and the environment.
	Water management	Analyzing and managing the quantity and quality of water throughout the phases of the hydrological cycle and in particular when water is used for agricultural, municipal, and industrial purposes.
	Food and agriculture	Wireless sensor networks to manage crop cultivation and know the conditions in which plants are growing. By combining humidity, temperature, and light sensors the risk of frost can be reduced and possible plant diseases or watering requirements based on soil humidity can be detected.
Transport and mobility	City logistics	Improving logistics flows in cities by effectively integrating business needs with traffic conditions and geographical and environmental issues.
	Info-mobility	Distributing and using selected dynamic and multi-modal information, both pre-trip and, more importantly, on-trip, with the aim of improving traffic and transport efficiency as well as assuring a high quality travel experience.
	People mobility	Innovative and sustainable ways to provide the transport of people in cities, such as the development of public transport modes and vehicles based on environmental-friendly fuels and propulsion systems, supported by advanced technologies and proactive citizens' behaviors.
Building	Facility management	Cleaning, maintenance, property, leasing, technology, and operating modes associated with facilities in urban areas.
	Building services	Various systems existing in a building such as electric networks, elevators, fire safety, telecommunication, data processing, and water supply systems. Computer-based systems to control the electrical and mechanical equipment of a building.
	Housing quality	Aspects related to the quality of life in a residential building such as comfort, lighting, and Heating, Ventilation and Air Conditioning (HVAC). It includes all that concerns the level of satisfaction of people living in a house.
Living	Entertainment	Ways of stimulating tourism and providing information about entertainment events and proposals for free time and night life.
	Hospitality	Ability of a city to accommodate foreign students, tourists, and other non-resident people by offering appropriate solutions to their needs.
	Pollution control	Controlling emissions and effluents by using different kinds of devices.
	Public safety	Stimulating decisions to improve the quality of air, water, and the environment in general.
	Healthcare	Protecting citizens and their possessions through the active involvement of local public organizations, the police force, and the citizens themselves.
	Welfare and social inclusion	Collecting and monitoring information for crime prevention. Prevention, diagnosis, and treatment of disease supported by ICT. Assuring efficient facilities and services in the healthcare system.
	Culture	Improving the quality of life by stimulating social learning and participation, with particular reference to specific categories of citizens such as the elderly and disabled.
	Public spaces management	Facilitating the diffusion of information about cultural activities and motivating people to be involved in them. Care, maintenance, and active management of public spaces to improve the attractiveness of a city. Solutions to provide information about the main places to visit in a city.
Government	E-government	Digitizing the public administration by managing documents and procedures through ICT tools in order to optimize work and offer fast and new services to citizens.
	E-democracy Procurement	Using innovative ICT systems to support ballots. Allowing the public sector to improve procurement procedures and the associated contract management, with the purpose of assuring best value for money without decreasing quality.
	Transparency	Enabling every citizen to access official documents in a simple way and to take part in the decision processes of a municipality. Decreasing the possibility of authorities abusing the system for their own interests or

		hiding relevant information.
Economy and people	Innovation and entrepreneurship Culture and heritage management Digital education Human capital management	Measures to foster the innovation systems and entrepreneurship in the urban ecosystem (e.g., presence of local incubators). The use of ICT systems (e.g., augmented reality technologies) for delivering new customer experience in enjoying the city's cultural heritage. Use of asset management information systems to handle the maintenance of historical buildings. Extensive use of modern ICT tools (e.g., interactive whiteboards, e-learning systems) in public schools. Policies to improve human capital investments and attract and retain new talents, avoiding human capital flight (brain drain).

### Size matters

Some research highlights the triple-helix model in the pursuit of becoming a SC. It is about synergy between the intellectual capital of universities, the wealth creation of industries, and the democratic government of civil society (Leydesdorff & Deakin, 2011).

Cocchia (2014) also published a systemic literature review, concluding that there was still no consensus regarding the definitions of digital city and smart city and that the concepts emerged around 2000 and are related to the diffusion of the Internet. A third conclusion was that the larger city, the stronger the drive toward the smart city because there are bigger challenges but also more knowledge available. These findings concur with the theory and research findings on the creative class and creative city by Florida (Florida, 2002).

Wijs de, Witte, and Klerk de (2017) did an empirical study in the Netherlands. They referred to the Neuroti et al.'s (2014) article and concluded that especially smaller cities had not heard of the concept of SC. They concluded that the size of the city matters: The bigger the city, the more people with information are around. The bigger cities have ambitions regarding SC but lag behind in realizing the concept.

All the studies indicated that there is a need for more empirical studies regarding cities implementing the SC concept.

### Critique

There are also critiques of the concept of SC (Colding & Barthel, 2017). The question is for whom is the SC? There should be more attention on the health of the city dweller. There should be more attention on resilience and cyber security. Other issues are the autonomy of urban governance, personal integrity, and the effect on the resilience of the infrastructure of basic needs, food, energy and water. Another critique is that the SC changes the relationship between humans and nature. How should children be taught their relationship with nature and how will the SC affect pro-environmental behavior as a whole? Kitchin in particular offered

*a critical reflection on the implications of big data and smart urbanism, examining five emerging concerns: the politics of big urban data, technocratic governance and city development, corporatization of city governance and technological lock-ins, buggy, brittle and hackable cities, and the panoptic city. (Kitchin, 2014)*

### Case of Smart Island Curaçao

In this section the island is briefly described and the ambitions and efforts regarding becoming a SC are presented. Curaçao is a Dutch Caribbean island of 444 km<sup>2</sup>, with a population of approximately 160,000. It is approximately 70 miles of the coast Venezuela. The island from 10 October 2010 is an autonomous country within the Kingdom of the Netherlands, consisting of the Netherlands, Curaçao, Aruba and Sint Maarten. The three islands, Bonaire, Sint Eustatius and Saba, together form a special municipality of the Netherlands.

Curaçao has an OCT status related to the European Union. The overseas countries and territories (OCT) are dependent territories that have a special relationship with one of the member states of the EU and have been explicitly invited by the EU treaty to join the EU-OCT Association (OCTA).

In the context of the United Nations Curaçao has a SIDS status.

*Small Island Developing States (SIDS) are maritime countries that tend to share similar sustainable development challenges, including small but growing populations, limited resources, remoteness, susceptibility to natural disasters, vulnerability to external shocks, excessive dependence on international trade, and fragile environments. Their growth and development is also held back by high communication, energy and transportation costs, irregular international transport volumes, disproportionately expensive public administration and infrastructure due to their small size, and little to no opportunity to create economies of scale<sup>2</sup>*

Curaçao does not embrace either of these two statuses. It is barely aware of them. Both these statuses are relevant to forward the SC agenda. OCT status gives the island the possibility of three axes of cooperation:

- the competitiveness of OCTs in key areas such as education and training, innovation, the small and medium-sized enterprises sector, and good political and economic governance;
- reducing their vulnerability to economic shocks, environmental issues, energy dependency and natural disasters;
- regional integration through increasing intra-regional economic exchanges, carrying out cooperation projects (specifically for cross-border environmental protection) and increasing cultural exchanges.<sup>3,4</sup>

Maybe the terrible experience of the Caribbean with hurricanes Harvey, Irma and Maria in 2017, will make all islands in the Caribbean realize that they are indeed SIDS.<sup>5</sup> Late September 2017 via social media and the influencers in the media it was demanded that the climate change issue to be put on the political and policy agenda. This has not been realized.

Curaçao is coping with a period of over ten years of almost no economic growth. At the end of October 2017 the Central Bank reported via the media that the economy has contracted almost one percent in the first quarter of the year ("Ekonomia di Kòrsou a kontraé durante promé kuartal di 2017," 2017). In 2019 the contract with Venezuelan state-owned company (SOE) PDVSA will expire, the grandfather clauses of the tax treaty with the United States will end and the island will have to start carrying its national debts again. After 2010 the Netherlands carried the debt as part of the new constitutional arrangement. To mitigate the consequences

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<sup>2</sup> Small Island Developing States. (2017). En.wikipedia.org. Retrieved 19 September 2017, from [https://en.wikipedia.org/wiki/Small\\_Island\\_Developing\\_States](https://en.wikipedia.org/wiki/Small_Island_Developing_States)

<sup>3</sup> *EUR-Lex - dv0010 - EN - EUR-Lex*. (2017).*Eur-lex.europa.eu*. Retrieved 20 September 2017, from <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM:dv0010>

<sup>4</sup> (2017). *Eur-lex.europa.eu*. Retrieved 21 September 2017, from <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX%3A32013D0755&from=EN>

<sup>5</sup> (2017). *Economist.com*. Retrieved 21 September 2017, from <https://www.economist.com/news/americas/21729007-region-must-adapt-climate-change-not-simply-rebuild-how-hurricane-irma-will-change>

the government is negotiating with the Chinese state-owned company Guangdong Zhenrong Energy (GZE) and alternative corporations to step in after the Venezuelans leave. From the end of 2017 this deal still looked uncertain. Venezuela, the third biggest trade partner of Curaçao, headed by president Maduro, is coping with a crisis of its own. In January 2018 Venezuela closed the border with the ABC islands for an indefinite period of time.

In October 2017 many companies, including state-owned companies, started to lay off employees. These took place in airlines, telecom companies, banks and small and medium enterprises. It was like suddenly the technological changes and disruptive technology impacted all sectors.

In September 2017 unemployment rose to 14.1%, an increase of 2% compared to 2014. "The youth unemployment rate (15-24 year old) has decreased 4 points, from 36.8 in 2016 to 32.8 in 2017. The biggest increase is in the category of 25-34 year olds. The unemployment in this group has increased 4.1 percentage points, from 14.7 (2016) to 18.8 in 2017."<sup>6</sup>

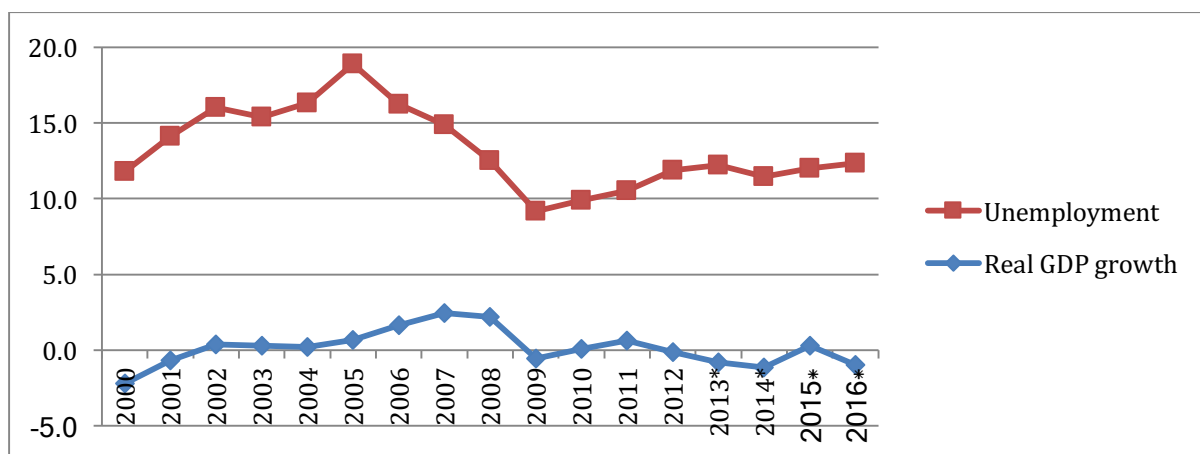


Figure 11: Data provided by CBS. Unemployment rate of 2010 and 2012 are estimates. CBS had no data for these two years on this variable.

In the next paragraph the case of Smart Island Curaçao will be described applying the matrix developed by Neirotti et al. (2014) as a framework.

### The ambition level of the government of Curaçao

In this section the ambition level of Curaçao is assessed by analyzing the government agreement that is the foundation of the program of the government formed for the period of 2017 – 2021 (PAR, MAN, & PIN, 2017).

<sup>6</sup> Results of the Labour Force Survey for 2017 - Press Releases 2017 - Media - Website - CBS. (2017). Cbs.cw. Retrieved 8 December 2017, from [http://www.cbs.cw/website/press-releases-2017\\_3241/item/results-of-the-labour-force-survey-for-2017\\_1888.html](http://www.cbs.cw/website/press-releases-2017_3241/item/results-of-the-labour-force-survey-for-2017_1888.html)

Domain	Sub-domain	Curaçao government agreement / ambition
Natural resources and energy	Smart grid Public lighting Green/ Renewable energies Waste management Water management Food and agriculture	To adjust the energy policy to include recommendations with emphasis on sustainability, including the possible use of liquid natural gas when possible and waste to energy technology.  To continue to develop and implement a water management policy and maintain the already existing infrastructure to capture the rainwater and use it for agriculture, fishery and husbandry.  The state-owned waste management company should start a process to categorize the waste and so encourage recycling in accordance to the principles of blue economy. Also study and implement waste to energy projects.  To materialize a vision entailing an ecologically balanced community endeavoring to produce as much as possible its own food, within a mixed economy, consisting of industry, service and hospitality. A technologically advanced community, in which the neighborhoods and corporatism fulfill an important role.
Transport and mobility	City logistics Info-mobility People mobility	To reform the public transport system to increase the level of mobility of the population. To this aim a study must be conducted to determine the best option. The state owned bus company and the whole of individual privately owned buses must be integrated in a system that connects all neighborhoods on the island. To that aim the government will encourage the creation of a corporate group of buses with the purpose of lowering their cost of doing business. The government will seek the assistance of experts to renew the public transportation law.
Building	Facility management Building services Housing quality	Housing is a problem. Many citizens do not have a house. Another issue is the illegal construction of houses. The government will evaluate the functioning of the foundation for public housing and change the system of priority setting on the waiting list. The government will instruct the foundation to develop several alternative model houses biased on the principles of sustainability, with a focus on energy, water and use of recycled material. This should be evidence based. To that end the university will be involved and to that end the government departments involved will be fortified.
Living	Entertainment Hospitality Pollution control Public safety Healthcare Welfare and social inclusion Culture Public spaces management	The objective is to create a more inclusive society. To that end all platforms will engage in a dialogue.
Government	E-government E-democracy Procurement Transparency	The processes supporting the most solicited public services and products will be transformed to e-government services and products. All government processes will be revised to be made more customer-friendly. To that end and for the sake of transparency quality management and certification will be implemented.  The objective of the government is to restore the trust of the public in politics and government by operating transparently, with integrity and good governance. We must join forces to restore stability and tranquility to transform Curaçao in a nation run according to the principles of good governance, trust, progress, innovation and progress.
Economy and people	Innovation and entrepreneurship Culture and heritage management Digital education Human capital management	The government strives to fortify commercial ties with countries in the Caribbean and Latin American region via economic diplomacy to amplify the opportunities for cooperation between governments, economic sectors, institutions of education and enterprises and so stimulate entrepreneurship, innovation, exports and the earning of foreign exchange.

The ambitions of Curaçao are further detailed in the government program for the period 2017 – 2021 (Gobièrnu di Kòrsou, 2017a). The program follows the Results-Based Management or Policy (RBM) methodology and totally embraces the Sustainable Development Goals 2030 as formulated by the United Nations. RBM uses the concepts of theme, impact, outcome, and activities.



One of the priorities of the government is the reduction of poverty. According to the program 25.1% of the households have an income below the poverty line.<sup>7</sup> The strategic goals are inclusive society, active citizenship, well-developed population, and sustainable development. The central themes are education and development, economy and employment, healthcare and environment, family, community and safety and good governance. After this the program is detailed for all the nine ministries. It appears the government is letting the UN dictate local policy. On the other hand the government totally ignores its Small Island Development State (SIDS) status and the related climate change issues.

This is ironic because this SIDS status is also created by the UN and specifically addresses the issue of the impact of climate change. This has become painfully and extremely relevant after hurricanes Harvey, Irma and Maria hit the Caribbean islands in 2017, especially Sint Maarten, who is a partner within the Kingdom of the Netherlands. The ideas of smart city and blue economy have been reduced to an “outcome” of the “impact”, “sustainable economic growth” of the “theme” “Economy and employment”.

A few days after the presentation of the program, on 12 September 2017, the governor addressed the parliament at the opening of the opening of the new parliamentary year. During that address the government addressed the issue of smart city, e-government, blue economy, creative economy, small business, housing and inclusiveness (Gouverneur van Curaçao, 2017). This was probably a reaction to the recent feedback given by the citizens on the government program via social media.

The island was always ambitious when putting ideas onto paper. For example, in 2001 the Mirant Company published “Curaçao – Island of Education and Sophistication”. This plan was never executed because it was distrusted as a plan of an energy company wanting to sell more energy.

In 2010 the concept of a knowledge zone in Curaçao was presented by the president of the university (Goede, Neuwirth, & Louisa, 2012; Somers, 2012). This was a vision to create a smart city around the university. This project was abolished after the change of government.

### **Current state of Curaçao**

What is the current situation in Curaçao concerning the process of becoming a smart island? The matrix of smart city domains and sub-domains developed by Neirotti et al. (2014) is applied.

### **Natural resources and energy**

In the area of natural resources and energy, for years Curaçao has been talking about a smart grid and meters<sup>8</sup> but there was no bold move to implement this. The public lighting is good although some neighborhoods are still in the dark. In general maintenance is an issue. A few years a pilot project of streetlights powered by the sun was undertaken. Within a limited amount of time, all the lights were vandalized and never replaced.<sup>9</sup>

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<sup>7</sup> The Bureau of Statistics established the poverty line in 2017. For a family composed of one adult and two children it is 1,966 gulden (\$1,109). According to this line 51,402 persons live in poverty. This is 25.1 percent of the population.

<sup>8</sup> *Caribbean's Aquallectra seeks electricity and water AMI system.* (2017). *Metering.com*. Retrieved 19 December 2017, from <https://www.metering.com/caribbeans-aquallectra-seeks-electricity-and-water-ami-system/>

<sup>9</sup> *More streetlights in Curaçao.* (2014). *Curaçao Chronicle*. Retrieved 19 December 2017, from <http://curacaochronicle.com/politics/more-streetlights-in-curacao/>

In the area of renewable energies Curaçao has made significant progress. With 30 % renewable energy it is one of the greenest islands in the Caribbean (Lillian, 2017). There are investors ready to invest in waste to energy projects but the government is reacting slowly.<sup>10</sup> Waste management was last innovated twenty-five years ago when the government agency Selikor<sup>11</sup> was transformed to a state-owned company.

Water management has deteriorated over the years. Too much rainwater goes directly to sea and is a burden to the coral reef. This problem has worsened due to the periods of massive rainfall after periods of extreme drought due to climate change.<sup>12</sup> Food and agriculture have always been a small economic sector, less than 1% of GDP. Almost all food is imported. Campaigns and programs to produce food locally till now had no lasting effect.<sup>13</sup>

### **Transport and mobility**

The downtown area has been a UNESCO site for twenty years in 2017.<sup>14</sup> The city is not in good shape, despite the comeback of some areas like Scharloo and Pietermaai (Goede & Louisa, 2012). Many premises are empty due to the competition of other locations like the mall Sambil,<sup>15</sup> e-commerce and high rent. There are a lot of plans and some investments to turn this development around.

Info-mobility is non-existent. During rush hours traffic is congested. A project to install cameras in strategic places to fight crime is in phase one of implementation.<sup>16</sup> The first results are very promising. At the end of October 2017 the Minister of Finance announced that the new car license plate would carry a chip for GPS tracking. This is to reduce car theft. It is unclear if the two systems are integrated, and the continuation of the last project is uncertain. Traffic and public transportation are bottlenecks in Curaçao. Several plans were developed but never implemented due to the political leverage of the privately held buses.<sup>17</sup> The state-owned bus company is struggling. Late in 2017 the bus company started to implement changes to become smart and become an alternative to cars. As a consequence public transportation services are poor and expensive, and so is owning a car. Over the last couple of years people started importing right-hand drive (RHD) vehicles that are considerably less expensive, although the island traffic is right-hand driving. In 2017 almost ten percent of the cars are RHD

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<sup>10</sup> *Aqualectra and Selikor sign agreement for waste treatment - Aqualectra*. (2017). *Aqualectra.com*. Retrieved 19 December 2017, from <http://www.aqualectra.com/en/news/aqualectra-corporate-news/aqualectra-and-selikor-sign-agreement-for-waste-treatment/>

<sup>11</sup> <http://www.selikor.com/>

<sup>12</sup> *Caribbean Island Curacao is changing into desert - BetterWorldSolutions - The Netherlands*. (2015). *BetterWorldSolutions - The Netherlands*. Retrieved 20 December 2017, from <https://www.betterworldsolutions.eu/caribbean-island-curacao-is-changing-into-desert/>

<sup>13</sup> *Minister of Economic Development to promote agricultural sector*. (2016). *Curaçao Chronicle*. Retrieved 20 December 2017, from <http://curacaochronicle.com/economy/minister-of-economic-development-to-promote-agricultural-sector/>

<sup>14</sup> *20 years of world heritage*. (2017). *Curaçao Chronicle*. Retrieved 20 December 2017, from <http://curacaochronicle.com/local/20-years-of-world-heritage/>

<sup>15</sup> [www.sambil.cw](http://www.sambil.cw)

<sup>16</sup> *Installation CCTV cameras by Inspur*. (2016). *Curaçao Chronicle*. Retrieved 20 December 2017, from <http://curacaochronicle.com/judicial/installation-cctv-cameras-by-inspur/>

<sup>17</sup> *Public transport routes are still the same since 1970*. (2017). *Curaçao Chronicle*. Retrieved 20 December 2017, from <http://curacaochronicle.com/local/public-transport-routes-are-still-the-same-since-1970/>

and are brought in at a rate of two hundred a month. Because of the significant number of these cars it has become a difficult political issue to handle.<sup>18</sup>

### **Building**

Facility management for years was done by the involvement of the Curaçao Downtown Management Organization (DMO)<sup>19</sup> and the *Sosiedat Komeriantenan Otrobanda* (SKO). The result is poor but would have been worse without their involvement. Many premises are empty and in decay and some parts of the area are poorly lighted and grubby.<sup>20</sup> There are some good elements, like free Wi-Fi in the downtown area, but the quality should be improved. The involvement of artists, with their creativity, is also positive.<sup>21</sup> There are no smart buildings, although many buildings have Wi-Fi and some have solar panels.

For years the government foundation responsible for public housing was not able to build more than a few houses per year. There are approximately 6,200 citizens waiting for a house. There are big plans to build 4,000 houses but till now nothing significant has happened. It is unclear if these plans are based on the concept of smart housing.<sup>22</sup>

At the end of 2017 the Bureau of Statistics reports that one third of the houses have no fixed connection to the Internet and 64.5% have access to the Internet. In 2011 53.1% had access. The relatively high price seems to be an obstacle to higher penetration rate (“Een derde nog zonder internet thuis,” 2017).

### **Living**

Tourism is slowly increasing, although Curaçao was not able to hold on the world-renowned Curaçao North Sea Jazz Festival.<sup>23</sup> Luckily the festival will continue in 2018. At the end of 2017 Curaçao opened a new mega pier and was breaking records in the area of cruise tourism, with 650,000 arrivals.<sup>24</sup>

Hospitality: In Pietermaai, a downtown area consisting of several blocks of old houses is being reconstructed and now provides housing for mainly Dutch internship students. This brought new life to the town, especially at night. For years the Curaçao Tourist Board (CTB)<sup>25</sup> has tried to implement the strategy of getting tourists involved in local cultural activities. Progress is slow. Curaçao lost its national theater. The new government announced plans to build a new national theater downtown. In October 2017 Curaçao started the project to become the first Caribbean island to be present on the Google Street View platform (“Curaçao verkennen met Google Street View,” 2017).

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<sup>18</sup> *Minister deliberating import ban RHD cars.* (2017). *Curaçao Chronicle*. Retrieved 20 December 2017, from <http://curacaochronicle.com/politics/minister-deliberating-import-ban-rhd-cars/>

<sup>19</sup> <http://www.downtownwillemstad.com/about-dmo.php>

<sup>20</sup> *Find solution for empty buildings in downtown Punda.* (2017). *Curaçao Chronicle*. Retrieved 20 December 2017, from <http://curacaochronicle.com/economy/find-solution-for-empty-buildings-in-downtown-punda/>

<sup>21</sup> *Art Walk Otrobanda.* (2017). *Curaçao*. Retrieved 20 December 2017, from <https://www.curaçao.com/en/dont-miss/2017/6/25/art-walk-otrobanda-170625/>

<sup>22</sup> *Government ready to construct 62 houses at Wechi.* (2016). *Curaçao Chronicle*. Retrieved 20 December 2017, from <http://curacaochronicle.com/main/government-ready-to-construct-62-houses-at-wechi/>

<sup>23</sup> <http://www.Curaçao.northseajazz.com/en/>

<sup>24</sup> *Recordjaar cruisetoeerisme.* (2017). *Antilliaans Dagblad*. Retrieved 20 December 2017, from <http://antilliaansdagblad.com/nieuws-menu/16663-recordjaar-cruisetoeerisme?platform=hootsuite>

<sup>25</sup> <https://www.Curaçao.com/en/>

The construction of several new hotels was announced by the government and the investors.<sup>26</sup>

Pollution control has always been an issue.<sup>27</sup> It briefly appeared that the new minister for public health would enforce the law regarding the pollution of the refinery. Awareness on the issue of pollution has risen. The closing down of the refinery is publicly debated and a Green Town to replace it is an alternative.<sup>28</sup>

A project installing Chinese-produced police cameras is being implemented to improve public safety.

Healthcare: The building of a new national hospital has become a difficult project but is expected to be finished with some delay in 2018, surpassing the original budget considerably.<sup>29</sup> The cost of healthcare is one of the highest on the budget, but there are many concerns about the quality.

Starting in 2017 the government began inspecting and enforcing the law in the food industry. This brought to light many cases where business puts the health of the consumer at risk.

Welfare and social inclusion: Although Curaçao might score better than the region, 60% of the population has an income below the income needed to live a decent life. In 2011 25% of the households lived below the poverty level of \$ 14,000 per year (de Bruijn, year?). In August 2017 45% percent of the population lived under the poverty line, according to another definition ("Segun sifra ofisial espantoso: 45% di kurasoleño ta biba bou di liña di probresa," 2017). In August 2017 the government published its urgency plan to alleviate poverty and exclusion in five pilot neighborhoods (Gobièrnu di Kòrsou, 2017). The plan did not mention the words digital, smart or blue. In an interview one of the authors acknowledged this, but pointed out a pilot project connecting community centers was integrated in the plan.

Although there is a general basic pension, elderly are not taken care of well enough. This problem is likely to increase as the population ages. There is no up-to-date government policy on this matter. In December 2017 the government announced new legislation to adjust the system so that everybody will save for their pension.

Public spaces management: Starting in 2010, and maybe even earlier, Curaçao started implementing a policy dedicating more attention and resources to public spaces. Most of these projects, like Caracasbaai and Marie Pampoen, have been very successful. However, responsible use and maintenance remains a challenge. Curaçao is less successful with landscaping, especially landscaping of the roundabouts.

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<sup>26</sup> *Cornerstone ceremony for two new hotels in the first week of September.* (2017). *Curaçao Chronicle*. Retrieved 20 December 2017, from <http://curacaochronicle.com/economy/cornerstone-ceremony-for-two-new-hotels-in-the-first-week-of-september/>

<sup>27</sup> *Environmental pollution in Dutch Kingdom ranks top 10 worldwide (on Curaçao).* (2016). *Curaçao Chronicle*. Retrieved 20 December 2017, from <http://curacaochronicle.com/local/environmental-pollution-in-dutch-kingdom-ranks-top-10-worldwide-on-curacao/>

<sup>28</sup> *Green Town presents its plan B for the future of the oil refinery area.* (2017). *Curaçao Chronicle*. Retrieved 20 December 2017, from <http://curacaochronicle.com/local/green-town-presents-its-plan-b-for-the-future-of-the-oil-refinery-area/>

<sup>29</sup> *HNO fors duurder.* (2016). *Antilliaans Dagblad*. Retrieved 20 December 2017, from <http://antilliaansdagblad.com/nieuws-menu/12791-hno-fors-duurder>

## Government

For years, starting in the 1990s, there has been talk about improving government and implementing e-government but little progress has been made. From 2003 till 2010 Curaçao was one of the first islands to vote electronically in elections. The island was a front runner in e-democracy. In 2010 this was reversed because two political parties were paranoid about hacking and hijacking of elections. After 2010 a group of young citizens developed a web-based tool to assist voters to determine their vote for the next elections in Curaçao. By answering many questions on election issues, the tool advised the voters on which party to cast their vote. Political parties have web presence and use social media. In August 2016 the Minister of Internal Affairs announced an ICT master plan after visiting Jamaica. This was not the first ICT master plan. In 2015 the Knowledge Platform of Curaçao published an update of such a master plan. Not surprisingly, not much was implemented and the plan was not evaluated (“BPD werkt aan een masterplan,” 2017). In October 2017 the government re-launched the government website. It became interactive and the organization behind the website was restructured. Instead of one webmaster there are now nine, one for each ministry (“Gobiernu.cw nu interactief,” 2017)

Procurement: Curaçao has a good legal framework regulating procurement. In practice this system is misused to favor suppliers with the right political ties. This is the case in all economic sectors.

Curaçao is very transparent. Curaçao has a law making it possible for citizens to demand information from the government. Also, Curaçao has a broad spectrum of media: about 30 radio stations, 9 newspapers, and 4 television stations. On top of that Curaçao is very active in social media. Many media are struggling financially and lately some have ceased to exist due to disruptive technology and not adapting to it. In that respect the society is very democratic (Goede, 2010). On the other hand it is said Curaçao has a culture of fear. People are afraid of political reprisals (Marcha & Verweel, 2003).

Corruption in Curaçao is relatively high and is one of the main causes for its sluggish economic growth.<sup>30</sup> After the report of Transparency International in 2012 nothing happened. In 2017 a group of citizens started a foundation and an awareness campaign against corruption.<sup>31</sup>

## Economy and people

Human capital management: The brightest high school students leave the island to study abroad, mainly in the Netherlands. They leave with a student loan. There is no policy in place as to which careers are more in demand. Getting the graduates to return after graduation is not a priority (Groot, Pin & Vasquez Villaseca, 2014).

In 2014 the government approved a policy in the area of Transnational Education, creating the conditions to attract institutes for higher education. In practice the emphasis is more on education and not on research and development and the stimulation of collaboration between universities and industry.

The youth have created clusters and are striving to start their own startups. Some have taken off. Despite the existence of the Curaçao Innovation & Technology Institute (CITI)<sup>32</sup> foundation,

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<sup>30</sup> *Country Report Curacao*. (2013). *Rabobank*. Retrieved 20 December 2017, from <https://economics.rabobank.com/publications/2013/september/country-report-curacao/>

<sup>31</sup> <https://www.facebook.com/KòrsouTransparente/>

<sup>32</sup> <https://citi.cw/>

entrepreneurship and innovation have never been a priority of government policy. Several years ago, around 2011, the Dutch TNO specializing in innovation wanted to start a regional center in Curaçao. They got a better reception in Aruba and established over there instead.<sup>33, 34</sup>

In December 2017 it appeared the minister was dedicating more time to the SME sector. There was a lot of lip service to the idea of digital education. In practice not much has happened due to lack of available bandwidth for schools and political will.<sup>35</sup> This is a consequence of no shared vision and action. Providers still consider the schools as clients and not as investment objects to invest in human capital.

At the end of September 2017 the CITI, who is the owner of the almost twenty-year old Innovation Award,<sup>36</sup> launched a platform to stimulate startups.<sup>37</sup> Two interesting details are that the platform refers to the notion of smart city and that the Minister of Economic Development was involved. This might give the impression that smart city policy is being implemented.

The primary focus of the government has always been on big projects, ranging from hotels to investments in the refinery. A group of higher educated graduates has created a cluster of start-ups. They still remain unnoticed by many, although some of them are quite successful.

In August 2017 the new minister of economic affairs signed a cooperation agreement with his colleague in the Dominican Republic to collaborate in the area of small and medium businesses (Martina, 2017). In October 2017 a group of citizens announced that they are developing a local digital currency.<sup>38</sup> In March 2014 a tier-IV datacenter opened. In 2016 the company went bankrupt and was continued by the local telecom company UTS and had become profitable by 2017.

Curaçao must be doing something right in this area because Isaca (Information Systems Audit and Control Association) announced that Curaçao was their most successful small member in 2015 and 2016 ("IT-conferentie Isaca Curaçao: 'Be agile'," 2017).

The island has a top ICT infrastructure. Seven fiber cables land on the island and the company Digicel has announced another one for 2018 ("Nieuwe kabel in zee," 2017). The situation is that Curaçao has a top infrastructure but lacks content and ideas to take real competitive advantage of this infrastructure.

### **What is being done to close the gap?**

In November 2017 CINEX, a government entity, hosted an international conference on Curaçao as a smart nation. They did an assessment on the current state of Curaçao. They used the model developed by The Centre of Regional Science (SRF) of Vienna University of Technology. Before

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<sup>33</sup> <https://www.tno.nl/en/focus-areas/energy/sustainable-energy/new-markets-and-users/smart-community-aruba/>

<sup>34</sup> *TNO: Aansprekend voorbeeld*. (2017). *Antilliaans Dagblad*. Retrieved 20 December 2017, from <http://antilliaansdagblad.com/en/curacao/10275-tno-aansprekend-voorbeeld>

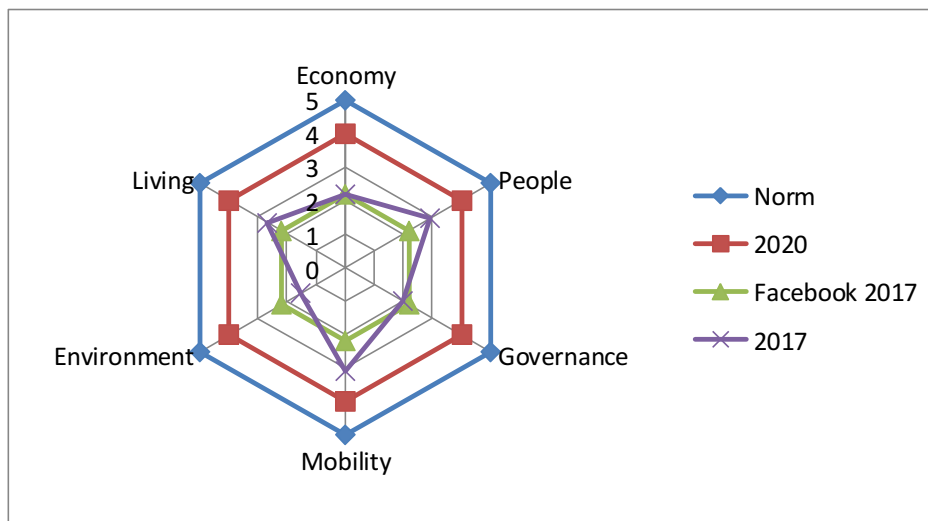
<sup>35</sup> Pilot 'One laptop per child'. (2010). *Antilliaans Dagblad*. Retrieved 20 December 2017, from <http://antilliaansdagblad.com/curacao/1944-pilot-one-laptop-per-child>

<sup>36</sup> <https://citi.cw/2017-innovation-award/>

<sup>37</sup> <https://citi.cw/launchpad/>

<sup>38</sup> *'Eigen digitale munt voordelig'*. (2017). *Antilliaans Dagblad*. Retrieved 20 December 2017, from <http://antilliaansdagblad.com/nieuws-menu/16464-eigen-digitale-munt-voordelig>

the conference Facebook respondents stated that Curaçao scores an average of 2.2 on the scale of SC. This is slightly lower than the average of 2.4 scored by the 140 participants (n=140) of the conference (Figure 13).



**Figure 13: Assessment of Curaçao as a smart city**

It is noticeable that the factor “people” scores relatively high. This is partially explained by the fact that most people on the island speak four languages. On the other hand it is somewhat a contradiction with the fact that the respondents state that the mindset of the people is the major challenge to overcome in becoming a SC.

The high score on mobility is peculiar given the current state of mobility, as described earlier. A similar remark is in place for the score on the factor “living”.

Some state that the possible arrival of the Chinese partially state-owned enterprise GZE could be a game changer. It will be an influx of capital, knowledge, technology and smart people (“Iniciativa pa jega na un desaroyo urbano nobo pa Korsou jegando 2019 i despues,” 11 May 2017). However, the entrance of this party is not certain, because the results of the due diligence are unsatisfactory.

The government acknowledges that they are still far away from e-government and that red tape is strangling investments. The government believes that automation can resolve the bottlenecks and reduce corruption (“Red tape bevindt zich in ‘loop’,” 2 November, 2017).

The government-subsidized agency CINEX in November 2017 hosted the second edition to seek smart foreign investors.<sup>39</sup> Three ministers were present and the organization refers to Curaçao as a smart nation. During the conference the vision of Curaçao as a smart nation was presented in the form of a digital magazine.<sup>40</sup> In the seminar the results of a Facebook survey were presented. The island scored an average of 2.2 as a smart island on a scale from 0 to 5. This score was confirmed by a live survey (2.4). The minister stated that the ambition of Curaçao was to score 4.0 by the year 2020 and launched a smart platform to work on making Curaçao smart. He stated that it is about connectivity, being data driven, and being agile. The minister referred to the innovation policy of the government.

<sup>39</sup> <https://smartinvestmentCuraçao.com/>

<sup>40</sup> (2017). *VisionsonCuraçao.com*. Retrieved 4 December 2017, from

[http://www.visionsonCuraçao.com/DOWNLOADS/visionsonCuraçao\\_technologyandInnovation.pdf](http://www.visionsonCuraçao.com/DOWNLOADS/visionsonCuraçao_technologyandInnovation.pdf)

The government has installed an organization watch over cyber security in order to promote the island as a cyber-secure island. It is especially important for the financial services sector. In mid-December 2017 the government went live with the Curacao National Socio Economic Database<sup>41</sup> to track progress toward the SDG. The government constantly states that it wants to be data driven and evidence based.

### **DISCUSSION AND CONCLUSIONS**

There is a considerable gap between the ambitions of Curaçao to become a SC or SI and its actions and results. There are several factors explaining this gap. Many of the stakeholders interviewed mention the lack of a shared vision as one of the reasons why there is no implementation of steps toward the SC. The question remains if this is totally true and is not contradicted by the many reports written on the subject and documenting vision. Stakeholders also claim that resistance to change on the island is noticeably higher than elsewhere (Goede, 2011 a).

Curaçao is a classic case of the innovation paradox, the unrealized potential of technological catch-up. In theory the island will thrive when it adopts technology. This does not happen because management of organizations is unable to implement the technology, partially because other conditions like financing, stability and imported machinery, for example, are missing (Cirera & Maloney, 2017).

Collaboration is very difficult in Curaçao. There resistance to structure and the trust between people is low. Only 32% state that in essence people can be trusted (van Leeuwen, 1990; CBS, 2016). Curaçao exhibits the characteristics of what in the theory of spiral dynamics is labeled as a red society, a society obsessed with power contested between gangs, seeking immediate gratification and showing no remorse (Beck & Cowan, 2014). The lack of transparency and high corruption have created the conditions for the elite to focus on their own agenda and not so much on pushing the island in the direction of a SC. The elite are more extractive than inclusive (Robinson & Acemoglu, 2012).

A poorly performing civil service due inappropriate appointments does not have the leverage to push the island further in the direction of the SC. Further, higher education is ill developed. It does not generate the knowledge and the mindset required to build a SC. The university lacks vision. Due to this they neglected the UNESCO chair on Caribbean SIDS.

During the conference the international experts stated that the main challenge for Curaçao to become SC is the mindset of the people. The above factors are an illustration of why the current mindset is a challenge.

One might say all the above-mentioned factors are more or less related to the small scale of the island. The society is fragmented and there is not much synergy. Old paradigms, for example, viewing schools as clients and not as entities to be approached from a corporate social responsibility philosophy by SOE, are very persistent. This might be related to the already mentioned role of the elite and higher education. All this might explain why Curaçao is not making real progress toward becoming a SC. The crucial factors inhibiting progress on the road toward the SC are extracting the elite and corruption induced by the elite and practiced in

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<sup>41</sup> <http://www.curacaonsed.org/di7web/libraries.aspx/home.aspx>



government and SEOs. As businesses, NGOs, citizens and clients have to deal with government, corruption has penetrated in all areas of society.

On a critical note, the SC is presented as a very desirable future, but is it? Some say that these living labs, like the one to be built by Google in Toronto, will be the playground for the rich creative class and exclude the rest of the population (Noort, 2017). Viewed from another lens it is a totalitarian system that sees, records and registers every move of the citizens and the city dwellers. The question is who has access to all the data and what is the legitimization? It seems that in the SC the primacy of the people is abolished and is taken over by government and corporations. Probably the government will serve the corporations and not the people.

The smart city reminds us of the society described by George Orwell in his novel *1984* (1990). It is implemented by applying the shock doctrine, as described by Naomi Klein (2007). It also reminds us of Michel Foucault's statement on how power is exerted by surveillance and not by force (Thompson, 2016). After every crisis smart technology is pushed as the solution for all problems. A couple of examples: After Sint Maarten was destroyed by hurricane Irma, actors started to call for rebuilding the island smart. When crime was rising in Curaçao, surveillance cameras were introduced. When auto theft was high, chips in license plates were announced.

Some foresee a dystopian SC. Four factors might be responsible for this: The SC gets hacked; the algorithms get out of control; corporations become too powerful; government and ICT are a bad marriage (Noort, 2015). The SC might result in Fascism 2.0 or it might lead to a revitalized democracy (Harari, 2016). It is a thin line (Noort, 2016). A smart city must also be a sage society (Goede, 2011b). Some state that the European social model is a much more human model for the future of humanity.<sup>42</sup>

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<sup>42</sup> *Cookiewall | Het Financieele Dagblad*. (2018). *Fd.nl*. Retrieved 15 January 2018, from <https://fd.nl/economie-politiek/1230849/smart-nation-singapore-is-nog-niet-zo-slim>

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 - Ontwikkeling van de Vrije Zone op Curaçao - Bevordering van de uitwisseling van kennis en informatie  
 - Hulp aan het klein- en middelgroot bedrijf om zaken te doen  
 - Technische bijstand vanuit de Domicaanse Republiek op het terrein van "internationaal zakendoen"  
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## A mathematical SSCM model for minimizing the CO2 emission with considering economic goals and social benefits

**Ms. Zahra Ghorbani Ravand, Ph. D Student**  
Department of logistics and electronic commerce  
Glorious Sun School of Business and Management  
Donghua University, Shanghai, China

**Professor Mrs. Xu Qi, Prof. Qi Xu, Ph. D.**  
Department of logistics and electronic commerce  
Glorious Sun School of Business and Management  
Donghua University, Shanghai, China

### ABSTRACT

Nowadays the main problem in the world is environmental pollution. One of the main sources which impact on the environment is Industrial factories. In this regards, we define a mathematical model for finding a solution for minimizing CO2 emission. According to SSCM model, we define three objective functions: 1- minimize CO2 emission which are coming from SCM Process, 2- maximizing profit 3- Maximizing social benefits. For details, first, we define decision variables in the SCM process, second, we normalize the variables with using fuzzy logic algorithm, third we set the objective functions accordingly, and finally we define constraints with considering Carbon Credit, Demands, Production rates, Investment, numbers of Jobs and value added. For implementation and case study, considering two factories, four kind of products in the variety of EFP-UEFP range, gathering their data and implement the model accordingly. After solving, we do sensitive analysis for finding other solutions, then we define a degree for EFP-EUFP range that we can measure EFP degree for products by Likert Scale. We found that in addition to government limitations, demand quantities should be changed by customers.

**Key words:** SSCM, Mathematical Model, EFP, EUFP, Social benefit, Carbon Emission

### INTRODUCTION

Managing and optimizing sustainable supply chain presents multiple challenges involving social, economic, and environmental issues. With regard to social issues the purpose of sustainability includes meeting the needs of increasing numbers of people, creating jobs in society, and contributing to communities by providing scholarship, support for cultural events, sporting events and charity programs. Maximizing profit and minimizing generated waste and pollution are goals of economic and environmental sustainability respectively.

However, in many real world applications these objectives can be in conflict. For example, social responsibility can conflict with the aims of marketing, which classify customers into different categories with different priorities for business. For example classifying customers in a customer pyramid as platinum, Gold, Iron, and lead is a popular concept in marketing literature. The main purpose of this classification is not satisfying the needs of more customers but it is done to provide better services to the top tiers of the pyramid specifically.

The current study explores the mathematical model that the stakeholders can trust for obtaining the profit and on the other side, the government can trust that the factory products are EFP and do not cause bad effect for environment. SCM shares the stakeholder focus with

the concept of business sustainability. There is also a growing effort to incorporate the other characteristics of sustainability into SCM. In today's globalized supply chains, environmental issues are of critical importance. During the past decade, carbon emissions and pollution associated with economic development have caused serious issues such as the greenhouse effect, abnormal climate, and environmental degradation. Hence, it has become a consensus worldwide to reduce carbon emission and pollution. Both consumers and regulators continuously exert pressure on firms to innovate in ways that will reduce their impact on the natural environment (Sarkis et al., 2011), as increasing government regulation and stronger public mandates for environmental accountability have made environmental issues a crucial business concern. Business firms are particularly under increasing pressure to reduce the negative environmental impact of their supply chains, to the point where environmental consciousness has become critical in the design and operation of globally integrated supply chain networks (Sundarakani et al., 2010).

### LITERATURE REVIEW

Many avenues of research have been pursued under the umbrella of SCM (Mentzer et al., 2001). Since the introduction of the concept in the early 1980s, SCM has been used to describe the planning and control of materials, information flows, and the logistics activities internally within a company and also externally between companies (Cooper et al., 1997). Over time, research on SCM has continued to broaden in focus (Burgess et al., 2006). Initially, SCM focused primarily on material flows. More recent research emphasizes additional aspects of SCM, such as risk (Colicchia and Strozzi, 2012), performance (Hassini et al., 2012), and integration (Fabbe-Costes and Jahre, 2007). There is also a growing emphasis on information flows, internal and external networks of relationships (Stock et al., 2010), and governance of supply networks (Pilbeam et al., 2012).

Since the definition of sustainability, or sustainable development, was published by the World Commission on Environment and Development in late 1980s (WCED, 1987), it has been recognized as one of the greatest challenges facing the world (Bateman, 2005; Espinosa, Harnden, & Walker, 2008; Ulhoi, 1995; Wilkinson, Hill, & Gollan 2001). Along with the proliferation of globalization over past two decades, sustainability has been transformed from a technical concept into the political and subsequently business mainstream (Liu, Leat, & Smith, 2011). According to the markets and competition theory, there are three important decisive factors which determine business environment and subsequently company strategies: demand (e.g. customers and interest groups), supply (all parties in the supply chains), and the general environment (e.g. regulations, society and natural resources) (Svensson, 2007).

Sustainable supply chain management has emerged to address the triple bottom line (i.e. people, planet and profit) issues from the supply perspective of business (Carter & Rogers, 2008; Mollenkopf, Stolze, Tate, & Ueltschy, 2010), and green marketing has emerged to identify and target socially and environmentally-conscious consumers, i.e. the demand side of business (Sharma, Lyer, Mehrotra, & Krishnan, 2010; Smirnova, Henneberg, Ashnai, Naude, & Mouzas, 2011). In parallel, debates on environmentally-friendly and socially-responsible business have been widely undertaken from both demand and supply perspectives.

As corporations attempt to move toward environmental sustainability, their managements must extend their efforts to improve their environmental practices across their supply chains. However, this complex job requires the collaborative efforts of many related parties including governments, supply chain firms, customers, and the community (Sommerville et al., 2010). Environmental collaboration was defined specifically to focus on inter-organizational

interactions between these supply chain members, including aspects such as joint environmental goal setting, shared environmental planning, and working together to reduce pollution or other environmental impacts (Vachon and Klassen, 2008). However, taking environmental issues into account influences the company's relationships both upstream and downstream (Beske et al., 2008). The activities of reducing negative externalities (caused by pollutants and carbon emissions) come with a financial burden viewed as the additional expenses of manufacturing the EFP. These expenses include additional investments incurred due to greening efforts, and penalties levied for not meeting the required environmental standards (Barari et al., 2012). Hence, profitability is a concern that must be addressed in the context of sustainable investments. Moreover, sustainability requires increased dependency between supply chain partners, and it is often difficult to distribute the costs and the benefits between partners (Ageron et al., 2012). Bowen et al. (2001) outline the difficulties that companies face when assessing the economic gains derived from their environmental practices. Often, a company is unlikely to take the initiative to invest in environmental technologies without effective government supervision and policy incentives. Even supply chain members intending to reduce emissions usually try to comply with environmental constraints without a systematic plan or collaborative activity, which often not only leads to emission violations and high penalties but also high costs (Letmathe and Balakrishnan, 2005).

As environmental protection is never a single party's responsibility, it is crucial to promote the principle of producer responsibility for environmental protection via collaboration among supply chain firms. However, in the supply chain context, individual interests may conflict with collective interests. Hence, whether or not all members of the supply chain will willingly and collaboratively improve their environmental performance depends on the individual member's tradeoffs of cost-benefit, coordination of the members' interests, the collective benefits of the supply chain, and collaborative investment in environmental technologies. These factors interrelate with government environmental policies and affect profit allocation within the supply chain, and thus they need to be fully understood to achieve a long-term reduction of carbon emissions and pollutants in the supply chain. However, there is still limited research work on this aspect in the extant literature. Furthermore, the environmental behavior of soft partner firms may influence the supply chain's value transformation process (Klassen and Vachon, 2003).

Changes in value transformation represent opportunities for the supply chain member store consider their collaborative relationship, as inevitably, the members' collaboration is the crucial factor for determining whether or not environment-friendly behaviors will last. Another issue that needs to be addressed is the economic feasibility of investments in environmental technology involving the production of environmental friendly products (EFP). In a competitive market, the EFP may be considered as an analogous product that competes with the existing environmental unfriendly product (EUFP). However, environmental regulations place supply chain firms at a competitive disadvantage in the marketplace in the long run, when compared with their unregulated rivals (Jaffe et al., 2002; Thomas, 2009).

The trade-off between environmental practices and profitability has been emphasized in the literature (e.g., Pagell and Wu, 2009; King and Lenox, 2002), and one argument indicates that environmental-friendly behavior is unlikely to be compatible with firms' profit-seeking motivation. Hence, faced with the cost disadvantage of producing the EFP, supply chain firms opting for green investment would struggle with the economic feasibility of their decision.

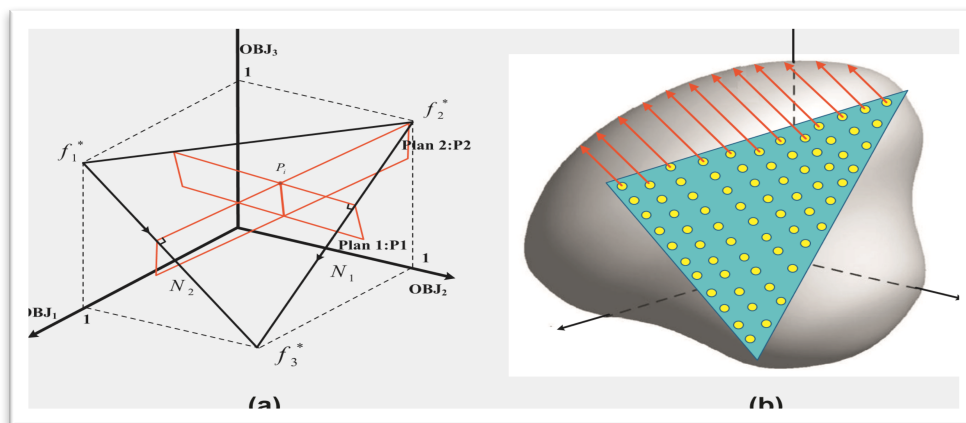
Both research and practical implementation have been growing steadily in the last decade in SSCM (Seuring and Müller, 2008a; Carter and Easton, 2011; Ahi and Searcy, 2013). Among

others SSCM allows companies to implement corporate responsibility practices and achieve a higher efficiency in logistics performance and resource usage (e.g., Gold et al., 2010; Carter and Easton, 2011) while pursuing the three dimensions of sustainability, i.e., economic, social and environment goals. One driver for such corporate action is constant changes in supply chain configurations, which have raised concerns about how and whether this could contribute to sustainability (Hall dorsson et al. 2009) and demanding strategic actions being taken. This offers a link into another young field of management research, i.e., the dynamic capabilities approach. They were first introduced by Teece and Pisano (1994) to explain firm performance in dynamic business environments, focusing on the capabilities that firms employ to reach a competitive advantage. A first conceptual linkage between the two domains of research has been presented in the paper by Beske (2012); however, this remains at the conceptual level and lacks (any) empirical research. Both theories aim to explain the achievement of a competitive advantage in dynamic business environments.

New business environment resulting from the concept of sustainability not only has significantly influenced the activities companies conduct, but also has caused the shift of the basic values and attitudes of societies towards business. Therefore, working in combination with SRM, SSCM can potentially have a key role to play in such companies meeting their GHG emission targets as part of improved operational performance (Ashby et al., 2012; Hajmohammad et al., 2013; Seuring and Gold, 2013; Gualandris et al., 2014).

### THE METHODOLOGY AND MODEL DEFINITION

For modeling, we considered three kinds of variables: Environmental variables (amount of Co2 emission), Economical variables (Costs of SCM processes) and Social Variables. We have some assumptions for modeling and according to them we gather data of variables and parameters, then analysis and evaluate them. We have three dimensional for decision and we have multiple objective functions. (Figure 1)



**Figure 2: Multiple objective function model (K.Devika., 2014)**

After defining the variables, parameters and objective functions, we define the constraints according to our assumptions.

### SCM Process

We define six main process for SCM Process as generic process which can apply for every factory per below:

- Marketing Process;
- Designing Process;
- Purchasing Raw Materials;
- Production Process;



- Packing and Marking Process;
- Logistics and Delivery Process.

For our case study The Process are as below:

1- Marketing 2- Designing Process, 3- Purchasing Raw Materials including Colors, Yarn, Silk, Wool, Some tools and so on. 4- Production Process including: Dying, Looming, Weaving and Finishing. 5- Packing and Marking Process, 6- Logistics and delivery to Customers.

### Assumptions

- The production lines are independent and there is not any relation between production lines of products  $X_i$ .
- The Government enforce legislation by setting constraints in the form of environmental standards and carbon caps that represent the maximum acceptable levels of pollutants and carbon emissions, and also provides incentives so that the manufacturer and supplier would collaboratively produce the EFP through environmental technology investment.
- To motivate supply chain firms to improve their environmental performance, the government enforces regulation by imposing a penalty on EUFP production and provides policy incentives to subsidize EFP production, hence reducing the EFP's cost disadvantage in the marketplace. Grounded on the logic of only compensating for the investment cost of pollution reduction and prevention, we assume that the government subsidized terminal based on partially compensating the average incremental cost of environmental protection. We also assume that the government grants its subsidy directly (or alternatively through consumers) to the manufacturer, who is then motivated to create an environmentally sustainable supply chain, and shares the subsidy with the supplier by adjusting the transfer price through negotiation.
- In reality, the carbon cap is set at a level that is much lower than the normal level of supply chain firms' carbon emissions in producing the EUFP. Hence, supply chain firms need to buy carbon credits to comply with the carbon cap whenever their carbon emissions exceed the cap.
- We assume that supply chain firms place a relatively higher priority on reducing pollutants. To some extent, this is intuitively consistent with reality since pollutant emissions more often incur harm locally; they violate environmental legislation and can be traceable. To comply with environmental constraints (environment standards), supply chain firms would also make an effort to reduce carbon emissions

### Variables:

- $X_i$ : Independent Variables = the number of product  $i$  (for carpet  $X_i = X$  Unit of product  $i$ ).
- Environmental variables:  $E_j (X_i)$ : Independent Variables = the amount of carbon emission which is caused by Process number  $j$  for producing the product  $X_i$ . According to supply chain management process, we consider the main process as per below:
  - Process 1: Marketing process.  $E_1 (X_i) =$  The amount of carbon emission which is caused by marketing process by one unit of product  $X_i$ ;
  - Process 2: Design Process:  $E_2 (X_i) =$  The amount of carbon emission which is caused by Designing process of products through using the materials and fabrication process per one unit of product  $X_i$ ;
  - Process 3: Raw material purchasing :  $E_3 (X_i) =$  The amount of carbon emission which is caused by Raw materials per one unit of product  $X_i$ ;
  - Process 4: Production Process:  $E_4(X_i) =$  The amount of carbon emission which is caused by production process per one unit of product  $X_i$ ;
  - Process 5: Packing and Marking Process:  $E_5 (X_i) =$  The amount of carbon

- emission which is caused by Packing and Marking process per one unit of product  $X_i$ ;
- vi. Process 6: Logistics and delivery process:  $E_6(X_i)$  = The amount of carbon emission which is caused by Logistics and transportation for delivery to customer per one unit of product  $X_i$ ;
- c. The cost Variables are as below: dependent Variables to  $X_i$ :
- i.  $C_{c j}(X_i)$  = Cost of process  $j$  for producing one unit of product  $X_i$ ;
  - ii.  $C_{e j}(X_i)$  = Penalty Cost and Cost for removing of effecting of process  $j$  on environment per one unit of product  $X_i$  which is define by government.
- d. Social Variables (Dependent Variables) are as below:
- i.  $S_{b j}(X_i)$  = The quantity of Job Opportunities (Human per Hour) which is created by producing  $X_i$  for one Unit ;
  - ii.  $S_{v j}(X_i)$  = The value added which is created by production line

### Parameters:

- e.  $n$  = The number of Products;
- f.  $D_i$  = Average Demand in the year for Product  $X_i$ ;
- g.  $I_i$  = Maximum Investment rate for product  $X_i$ ;
- h.  $I_e$  = Maximum Cost for environment protection;
- i.  $M_{cc}$  = Maximum Carbon Cap Rate permission per year for factory which is approved by government which is called carbon credit;
- j.  $S_k$  = The maximum rate of production Line Number  $K$ ;
- k.  $P(X_i)$  = Price of Product  $X_i$  for one Unit .
- l.  $CS_{b j}(X_i)$  = The total cost for Human resource that should be paid as salary and other rewards for one hour in process  $j$  for one Unit of product  $X_i$ .

### Objective functions

The objective functions are as per below:

- Minimize the Environmental Defects: This objective function is define for minimize bad effect of industries factories for environment.

$$O1: \text{Min} \left( \sum_{i=1}^n \left( \sum_{j=1}^6 E_j(X_i) * X_i \right) \right)$$

- Maximize Profit or net revenues: This objective function is the stakeholder's objective function that they want to achieve maximum net revenues.

Net Revenues = Gross Revenues – Total Cost

$$O2: \text{Max} \left\{ \sum_{i=1}^n \left( X_i * P_i - \sum_{j=1}^6 X_i * C_{c j}(X_i) \right) - I_i - I_e - S_{b j}(X_i) * X_i * CS_{b j}(X_i) \right\}$$

- Maximize Social Profit: It means that the factories can increase added value and also job opportunities.

$$O3: \text{Max} \left\{ \sum_{i=1}^n \sum_{j=1}^6 S_{v j}(X_i) * X_i \right\}$$

$$O4: \text{Max} \sum_{i=1}^n \sum_{j=1}^6 S_{b j}(X_i) * X_i$$

### Constraints:

- Government Constraints for carbon credit:

$$1- \sum_{j=1}^6 \left( \sum_{i=1}^n E_j(X_i) \right) < M_{cc}$$

- Demand Constraints:

$$2- X_i \leq D_i$$

- Maximum rate of production lines:

$$3- \sum_{i=1}^n (X_i) \leq \sum_{i=1}^n (S_i) \text{ and}$$

$$4- X_i \leq S_i$$

- Maximum amount of Costs:

$$5- \sum_{j=1}^6 (\sum_{i=1}^n E_j(X_i) * C_{ej}(X_i)) < I_e :$$

This constraint is the limitation of investment by firms for environmental protection.

$$6- \sum_{j=1}^6 (\sum_{i=1}^n C_{cj}(X_i) * X_i + \sum_{i=1}^n \sum_{j=1}^6 (S_{vj}(X_i) * X_i + S_{bj}(X_i) * X_i * C_{Sbj}(X_i))) < I_i$$

$$7- \sum_{j=1}^6 (\sum_{i=1}^n E_j(X_i) * C_{ej}(X_i) + \sum_{j=1}^6 (\sum_{i=1}^n (C_c(X_i) * X_i + S_{bj}(X_i) * X_i * C_{Sbj}(X_i))) < I_e + I_i$$

- 8-  $X_i \geq 0$  and Integers
- 9-  $E_j(X_i) \geq 0$

### Numerical analysis

For implementation the model, we evaluate two factories data and process. The first factory is Hand-made carpet factory in Iran, Kashan (SIFCO Handmade Carpet Factory) and Second factory is Machine-made Carpet. Handmade Factory we considered three kinds of products with different process line for raw materials and dyeing. Machine made factory has one production line with same materials which are totally artificial.

Selected products specification in Hand-made factory are:

- X1: Totally natural raw materials (Natural wool), totally natural dyeing (Planet dyeing), Handmade process;
- X2: Totally natural raw materials (Natural wool), artificial dyeing (Chemical dyeing), Handmade process;
- X3: Artificial raw materials (artificial wool), artificial dyeing (Chemical dyeing), Handmade process;

Selected product specification in Machine-made factory is:

- X4: Artificial raw material (Acrylic material), artificial dyeing (Chemical dyeing), Machinery process.

### Defining of SCM Process

We have six main process:

- Marketing process,
- Raw materials process,
- Dyeing Process,
- Production Process,
- Packing and Marking Process,
- Logistic and delivery process.

### Environmental variables

Measurement of variables which are the amounts of carbon emission in every process for one unit of product  $X_i$  ( $i \in \{1, 2, 3, 4\}$ ,  $n = 4$ ).

For measurement the carbon emission, we get the data of carbon emission in every stage and converted to the numbers. For example, for process one and two, we have same process for four products, and we have same carbon emission and we considered one for all of the products. The carbon emission which is caused of chemical dyeing with machinery process is 520 times more than natural dyeing with traditional hand working.

<i>I</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>Xi</i>	1 Square Meter	1 Square Meter	1 Square Meter	1 Square Meter
<i>E1(Xi)</i>	1	1	1	1
<i>E2(Xi)</i>	1	1	1	1
<i>E3(Xi)</i>	1	35	115	115
<i>E4(Xi)</i>	1	51	235	520
<i>E5(Xi)</i>	1	3	5	15
<i>E6(Xi)</i>	1	1	1	1

**Table 1: The amount of carbon emission in every process for one square meter of product i,**

The data which is mentioned in table 1 is shown the amount of carbon emission of products X2, X3, and X4 with comparison X1.,

***Economical Variables***

The Costs for every process for one square meters of products ( $i = \{1, 2, 3, 4\}$ ,  $n=4$ ). In the below table we consider cost of every process for producing one square meters of product i.

<i>I</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>Xi</i>	1 Square Meter	1 Square Meter	1 Square Meter	1 Square Meter
<b>Cc1(Xi)</b>	1	1	1	1
<b>Cc2(Xi)</b>	300	300	300	10
<b>Cc3(Xi)</b>	1300	900	400	30
<b>Cc4(Xi)</b>	1100	1100	1100	8
<b>Cc5(Xi)</b>	15	15	15	2
<b>Cc6(Xi)</b>	10	10	10	10

**Table 2: The data for cost of each process**

**Social variables:**

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Sb1(Xi)</b>	59	21	12	1
<b>Sb2(Xi)</b>	22.5	22.5	7.3	0.01
<b>Sb3(Xi)</b>	85.6	12	12	0.01
<b>Sb4(Xi)</b>	115	115	115	0.02
<b>Sb5(Xi)</b>	0.01	0.01	0.01	0.01
<b>Sb6(Xi)</b>	0.005	0.005	0.005	0.005
<b>Sv1(Xi)</b>	0	0	0	0
<b>Sv2(Xi)</b>	0	0	0	0
<b>Sv3(Xi)</b>	7%	2%	2%	13%
<b>Sv4(Xi)</b>	9%	9%	3%	3%
<b>Sv5(Xi)</b>	0	0	0	0
<b>Sv6(Xi)</b>	0	0	0	0
<b>CSb1(Xi)</b>	100	100	100	200
<b>CSb2(Xi)</b>	250	250	120	185
<b>CSb3(Xi)</b>	80	20	20	130
<b>CSb4(Xi)</b>	50	50	50	140
<b>CSb5(Xi)</b>	60	60	60	10
<b>CSb6(Xi)</b>	3	3	3	3

**Table 3: The Data for Social Variables****Parameters**

For parameters, we gathered and evaluated one year data of both factories, then calculated the average of the data, we consider as the parameters.

<b>I</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>N</b>	1	2	3	4
<b>Di (Square Meter)</b>	500	1200	3500	35000
<b>Ii (\$)</b>	500000	500000	500000	500000
<b>Ie( \$)</b>	1000	2000	3000	700000
<b>Mcc (Unit/year)</b>	200000	200000	200000	200000
<b>Sk</b>	2000	2000	4000	30000
<b>P(Xi) / Square meter</b>	3000	2800	2500	300

**Table 4: The data for parameters**

**We used Excel software for solving the model**

The results are as below:

	1	2	3	4
<b>Xi</b>	183	215	273	8333
<b>Total Cost</b>	498675	499875	498225	499980
<b>Carbon Cap</b>	1098	19565	97461	5433116
<b>Total Income</b>	549000	602000	682500	2499900
<b>O1(Environment)</b>	49227	82560	86814	-
				3433196
<b>O2 (Economic)</b>	50325	102125	184275	1999920
<b>O3 (Job) Human Hour</b>	51627	36660	39943.995	8791.315
<b>O4 (VA)</b>	8%	5%	2%	9%

**Table 5: Results after solving model**

The data in Table 5 presents the optimum amount for producing Xi with considering minimizing carbon emission and maximizing profit and social benefits.

**THE FINDING AND DISCUSSION**

With solving the model with current data and current rules and conditions for production the products, still the number of EUFP products in comparison with EFP are very high. The main reasons are cost and profit. According to Table 5 and evaluation of results, we find that because of high demand for X3 and X4 and also low cost for processes, whatever the amount of carbon emission are very high, however the number of those products are considerable. It means that if we want to decrease more the amount of that products and increase X1 and X2, we should have more constraints or we should decrease the amount of Mcc which is defined by Government and on the other side, governments will increase the penalty for carbon emission for factories.

For obtaining other solutions which help environment and low carbon emission, we can consider several solution as per below:

- Considering big amount as penalty for factories who have big amount of carbon emission and insert one constraint to the model;
- Decreasing the Mcc or carbon credit for factories;
- Set a rules for factories that they should do some process for cleaning the environment and spending costs for environmental aims. For setting this rule, we can define some variables and add in the model as cost of SSCM.

After defining above variables and constraints, we revise the model and again check the solution. Consider P = the amount of penalty for every unit carbon emission;  $\sum_{j=1}^6 (\sum_{i=1}^n E_j(X_i) * P)$  is the total penalty for factory. We consider this penalty in the model as one of the costs that the factory should pay. The Objective function two will be changed to

$$O2-1: \max \left\{ \sum_{i=1}^n (X_i * P_i - \sum_{j=1}^6 X_i * C_{cj}(X_i)) - I_i - I_e - S_{bj} (X_i) * X_i * C_{Sbj}(X_i) - \sum_{j=1}^6 (\sum_{i=1}^n E_j(X_i) * P) \right\}$$

And the Constraints 6 and 7 will be changed to below:

$$6- \sum_{j=1}^6 (\sum_{i=1}^n Cc_j(X_i) * X_i + \sum_{i=1}^n \sum_{j=1}^6 (SV_j(X_i) * X_i + S_{bj}(X_i) * X_i * CS_{bj}(X_i)) + \sum_{j=1}^6 (\sum_{i=1}^n E_j(X_i) * P) < Li$$

$$7- \sum_{j=1}^6 (\sum_{i=1}^n E_j(X_i) * C_{ej}(X_i) + \sum_{j=1}^6 (\sum_{i=1}^n (Cc(X_i) * X_i + S_{bj}(X_i) * X_i * CS_{bj}(X_i)) + \sum_{j=1}^6 (\sum_{i=1}^n E_j(X_i) * P) < Ie + Li$$

With revising model and consider  $p=50\$$  for one unit carbon emission and  $Mcc$  decrease to 300,000, we calculate again the model and find below solutions:

	1	2	3	4
<b>Xi</b>	<b>356</b>	<b>423</b>	<b>273</b>	<b>4322</b>
<b>Total Cost</b>	13675	199375	487573	141327
<b>Carbon Cap</b>	<b>213</b>	<b>3849</b>	<b>9746</b>	<b>28179</b>
<b>Total Income</b>	1068000	1184400	682500	1296600
<b>O1 (Environment)</b>	892	12522	86814	-624671
<b>O2 (Economic)</b>	1054325	985025	194927	1155273
<b>O3 (Job) Human Hour</b>	7245	5432	39943.995	4951
<b>O4 (VA)</b>	9%	6%	3%	4.6%

**Table 6: The result after revising model**

After solving and comparing the result of the first model and revised model, (Table 5 and Table 6), we find that the quantity of EFP (X1 and X2) are increased and the quantity of EUFP (X3 and X4) are decreased.

### SUMMARY AND CONCLUSIONS

In this paper, with using the theory of SSCM and three dimensional approach to the factories, we identified a mathematical model in the SSCM context for proposing a solution for minimizing carbon emission by factories with considering economical goals and social benefits.

We define the problem and consider the variables and parameters for modeling, then according to the problem, consider constraints. We consider four types of products with four ranking in Environmental Friendly Product (EFP). The first one is high rank (ranking 8-10 of 10 EFP), second is above average (ranking 6-8 of 10 EFP), Third one is near to average (4-6 OF 10) and last one is Environmental Unfriendly Product (EUFP) ranking is below 4. We solved model for producing these products together. At first stage we find that if we want to produce all of them together without any governmental constraints about maximum carbon cap for every products, the rate of EUFP will be very high because of below reasons:

- Demand: Nowadays because of demand for cheap products, the factories don't like to consider environment and using the materials and production process with minimum carbon emission.
- Profit: The profit of production EUFP is very higher than EFP because of production costs and demand.
- Raw materials accessibility and low cost: Providing natural raw materials are time consuming and the process of obtaining is expensive. Speed for delivery the demands and low cost are another reasons for using chemical materials instead of natural one.

After solving the model, we suggest that for highlighting the environmental dimension in SSCM

model, we consider the minimum carbon emission permission or carbon credit for factories, also add another constraints as rate of penalty for every products. If the factory produce the EUFP, they should pay the high penalty. This penalty should be calculated with comparison the same EFP products costs.

For next research we suggest that the researches can add some more constraints which is effect on cost of production of EUFP and automatically factories intend to produce EFP.

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## Deployment of Human Relations in Japan after World War II

**Tohsio Yamazaki**

Professor, College of Business Administration,  
Ritsumeikan University, Osaka, Japan,

### ABSTRACT

This paper discusses the deployment of human relations in Japan, especially issues regarding the transformation of labor relations and those in the management system. Conditions for the deployment of human relations varied significantly between two nations. In Japan, human relations methods were deployed in response to both the conflict between labor and management, which was a result of the legal recognition of labor unions and the growing labor movement, and the need to modernize management. As a result, human relations methods based on labor relation reforms in the United States were promoted. However, in general, many factors influence the introduction of human relations. Therefore, this paper discusses the deployment of human relations with regard to environmental factors such as labor relations, the worker participation system (the codetermination system), management values and traditions, and market structure. Furthermore, based on these discussions, it also analyzes the Japanese characteristics regarding the deployment of human relations.

**Keywords:** Americanization • Human relations • Labor relations • Management system • Productivity movement

### INTRODUCTION: RESEARCH PROBLEMS

As European countries did after World War II, Japan developed enterprises, industries, and its economy by deploying and adapting technology and management methods from the United States. The US-led Productivity movement promoted the transfer of US technology and management methods to Japan. This country as a defeated nation also received significant American leadership and support after the war. Most technology experts and managers in Japan desperately attempted to introduce all the aspects of American technology and management practices [1, pp.9-22; 2, p.219].

In the period immediately following the end of the war, productive forces and economic might significantly differed between European nations and the US as well as between Japan and the US. Thus, “catching up” became one of the most pressing issues in each country. The deployment of US technology and management methods greatly contributed toward addressing this issue; the requisite conditions for achieving this goal were created with US guidance and assistance. The major American management methods implemented in these countries were (1)management and production systems (human relations, industrial engineering, statistical quality control, and Ford System), (2)management education, (3)methods for adjusting to a mass market (marketing, public relations, and operations research) and (4)divisional structure.

Among these American management methods, the United States viewed the transfer of human relations to European countries as particularly important for the American-led productivity as well as management education [3, S.173; 4, p.33]. A problem common to OEEC member nations, according to the US, was the need to remove restrictive practices by labor unions, thus strengthening the development of free labor unions [5, p.17]. Through its assistance to West Germany, the US expected to resolve union collective bargaining at the corporate level, not the

national level [5, p.40]. In Europe, US business and political leaders pushed for the adoption of labor relations along the lines of the US model, which would be based on the “human relations” approach. To demonstrate the benefits of US-style labor relations, the US Technical Assistance and Productivity Program supported trips to the US for workers and employer representatives from Europe [2, pp.197, 199].

On the other hand, in Japan that was a late developing country, necessities to modernize management were much greater than in Germany and human relations played an important role in increasing corporate modernization efforts after the war. However, in Japan, there were the unique conditions in the deployment of human relations. Many factors influenced the introduction of such American management methods.

Many studies approach the deployment of human relations in Japan. However, these studies do not always identify which elements of American and Japanese management methods were combined, how they were hybridized, and which factors determined the hybridization (for these studies see books and articles cited in this paper). It is very important to elucidate how Japanese-style business management and its particular characteristics, conforming to Japanese conditions while still bearing on the Japanese management style, surfaced during the deployment of the American management method from the perspective of structural analysis. This paper will consider the problems stemming from the Japanese method of conforming to the American method, impacted by traditional and cultural factors in business management as well as institutional factors, and its relationship to the structural characteristics of Japanese capitalism.

This paper attempts to explain the details of hybridization and the process of modifying US management methods. It is very important to elucidate how Japanese-style business management and their particular characteristics, conforming to Japanese conditions while still bearing on the country specific management style. This paper considers the problems stemming from the Japanese method of conforming to the American method, impacted by traditional and cultural factors in business management as well as institutional factors, and its relationship to the structural characteristics of Japanese capitalism. It discusses the deployment of human relations in relation to the problems of transformation of labor relations and those in the management system.

First, social and economic backgrounds regarding the deployment of human relations in Japan will be examined in Section 2. The deployment of human relations in Japan will be considered in Section 3. Furthermore, based on the aforementioned discussion, the characteristics regarding the deployment of human relations will be clarified. In Section 5, concluding remarks will be indicated.

### **SOCIAL AND ECONOMIC BACKGROUNDS REGARDING THE DEPLOYMENT OF HUMAN RELATIONS IN JAPAN**

This section considers social and economic background of human relations deployment in Japan. Human relations played an important role in Japan’s increasing corporate modernization efforts after the war, as the legal recognition of labor unions and the growing labor movement heightened the conflict between labor and management. This environment called for new management methods based on the family system, feudal family relations, as well as the irrational familial and paternalistic human relations that labor management had previously relied upon. Human relations was deployed in response to this demand. Small- and medium-sized businesses, in particular, demanded further reforms to labor management

methods and proceeded to deploy human relations under the direction of business associations and the Japan Productivity Center. Within larger corporations, human relations was used particularly to improve corporate consciousness and as a labor union countermeasure with regard to the lifetime employment system [6; 7, p.221; 8, p.20]. Under the movement towards the democratization of management, transforming pre-war, irrational human relations into those compatible with new management became the goal of human relations management in industrial enterprises. This was one of the Japanese characteristics regarding the deployment of human relations [8, p.20; 9, p.18].

At that time, in the iron and steel industry, the topic of human relations garnered interest and became one of the arguments in the 5th Iron and Steel Committee of the International Labor Organization (ILO) in 1954 [10, p.985]. In addition, some study groups were dispatched to the United States as its development of the productivity movement and knowledge regarding the conditions of human relations deepened. Moreover, in Japan, the promotion of rationalization countermeasures for workers were strongly demanded. These changes promoted the introduction of human relations in the country.

Furthermore, with the progress of innovations and changes in the work process, it became increasingly important to determine how each company could improve the morale of its workers [6, pp.76-77; 11, p.294]. For instance, at the Nissan Motor Corporation, with the rapid development of new products and the modernization of equipment around 1954, attempts were made to improve the constitution of human relations [12, p.291].

## **DEPLOYMENT OF HUMAN RELATIONS IN JAPAN**

### **General Conditions Regarding the Deployment of Human Relations**

Next, this section examines the deployment of human relations in Japan. First, we examine the general conditions of human relations deployment. Various measurements concerning communication within companies were adopted for the first time between 1951 and 1952 [13, p.8]. First, a morale survey of employees was administered by Professor Kunio Odaka from the University of Tokyo in the Kawasaki Ironworks of the Nihon Steel Corporation [14, p.5]. At this point, the period from 1947 to 1951 can be regarded as the years in which theories and ideas of human relations were first presented while the period from 1951 to 1955 can be referred to as the period in which human relations measurements were first introduced. In contrast, the period after 1955 can be considered as when human relations were diffused and efforts to deploy such an American management method reached a turning point [6, pp.67, 74; 15, p.146]. The various measures of the human relations morale survey were based on the premise of human relations management and the use of company newsletters as the fundamental means of communication. Conversely, the use of suggestion systems was the basis of participation in management [9, p.21]. However, in the early 1960s, individual measures were only introduced dispersively, and there was no equal human relations based on matured self-consciousness in the modern sense. Under such conditions, sufficient development of American human relations management methods, which were based on modern human relations, faced certain limitations [16, pp.185, 189-190].

This section analyzes the general conditions of human relations deployment based on several survey results. According to an investigation in July 1956 by the Japan Federation of Employers' Associations, the number of enterprises in manufacturing industries in which the introduction of human relations advanced was 63 among the 87 companies that responded. Upon closer examination of the number of firms that were implementing human relations measures, six utilized company newsletters, five employed the suggestion system, seven used morale surveys, three conducted workplace roundtable conferences, one simply promoted the

company handbook for employees, and two offered tours of the plant for employees' families. Including companies that were planning to introduce human relations methods, the relevant numerical values were 11, 9, 12, 4, 2, and 2, respectively. Interest was also high with regard to democratic personnel management, promotion of ingenuity based on employee's autonomy, improvement of morale through the early detection of workers' discontent/dissatisfaction, and the establishment of a work environment based on such information. However, at this stage, some firms did not introduce human relations methods despite their high interest. Therefore, at that time, the realization of human relations management had not yet become a general phenomenon [17, pp.1, 13-14].

According to another survey administered in December 1956 by the Japan Federation of Employers' Association, all the participating companies were interested in human relations management, and many recognized its necessity. Above all, measures for communication were implemented in most of the enterprises. In addition, the rate of the firms that administered morale surveys or opinion surveys to employees ranged from 30% to approximately 40%. In contrast, the usage rate of personnel counseling or grievance disposition systems was relatively low. However, during this period, human relations management methods had been adopted in a considerable number of enterprises. Moreover, the implementation rate of various measures increased considerably in four or five years until the end of 1956. Thus, a shift can be seen from the introduction and implementation stage to the spread of human relations management. In terms of the reason for such interest and necessity by the firms, the rate of "in-house human cooperative relationship" was 78.2%. The relevant numerical values of "sufficiently communicating the intention of the company" and "productivity improvement by the rise of morale" were 49.4% and 44.3%, respectively. Therefore, improvements within in-company communication and morale were particularly emphasized.

In terms of individual measures of human relations, the usage rate of communication was 97.7% while the relevant numerical values of opinion surveys or morale surveys and personnel counseling or grievance disposition were 37.9% and 49.4%, respectively. Regarding the methods for communication, company newsletters were adopted in 69% of the enterprises while measures for communication between employees and managers were implemented in 90.8% of the companies. The usage rate of workplace roundtable conferences was 48.4%. In contrast, the usage rate of personnel counseling was only 16.7%. Thus, this method was the least-used measure. Although the usage rate of grievance disposition was 45.2%, the important issue was how to apply and use such a measure based on Japanese circumstances. In addition, the usage rate of enterprises that utilized labor management, roundtable conferences, joint labor management consulting committees, and informed trade unions was 78.2%. In contrast, the usage rate of companies that established production committees was only 31%. However, the usage rate of firms that held production committee meetings on a regular basis was approximately 92%. The diffusion rates regarding family communication through public relations activities, plant tours, and home visits were approximately 30%, 26%, and 22%, respectively. These figures were lower than those of other measures of human relations management [18, pp.1-5, 8-14, 16-18, 20-22].

Furthermore, according to results of a survey in December 1963 by the Japan Federation of Employers' Association, the suggestion system was used the most as bottom-up communication from employees to the management (71.6%). Even in small and medium-sized firms, the relevant numerical value was more than 50%. Conversely, company newsletters were the most popular top-down communication measure (84.9%). However, there were differences based on firm size. The usage rates of newsletters in companies with fewer than

100 employees and those with fewer than 300 but more than 100 were 20.6% and 49%, respectively. While the proportion of companies that established workplace roundtable conferences was 58.2%, the usage rates of morale surveys or opinion surveys and handbooks for employees were 28.6% and 13.9%, respectively. The usage rate of enterprises that adopted an employee interview system was 23.8%. We can see an important characteristic of Japanese management in human relations management with regard to the entire family. The proportion of family recreation policy implementation was 31.9%, and these policies prevailed in terms of measures for such purposes. Meanwhile, the diffusion rates of family communication, plant tours, and home visits were approximately 20%, 20%, and 12.4%, respectively [19, pp.5, 27-29, 66-67].

While the diffusion of human relations progressed in large enterprises, its introduction in small and medium-sized firms was delayed. There were even aspects of paternalistic and family-like labor management in small and medium-sized businesses. However, in-firm communication and coordination between labor and management were insufficient. The formation of modern human relations was an important problem in overcoming such limits of personnel management. Therefore, the deployment of human relations gradually progressed in small and medium-sized businesses after 1957 [6, pp.179-180]. Human relations was also used directly as a promotional means for enterprise consciousness and countermeasures to labor unions connecting with systems such as lifetime employment in large businesses. Conversely, in small and medium-sized firms, the main goal of human relations management was the improvement of productivity and production growth. There are many cases in which methods of human relations were used to secure low-wage systems and agreements between companies. In addition, institutions such as the Japan Federation of Employers' Associations and the Japan Productivity Center guided the deployment of human relations in small- and medium-sized firms and introduced new labor management systems to improve the constitution and rationalization of subcontracting companies as well as small- and medium-sized firms [6, pp.181, 191-192; 20, pp.49, 51-52].

### **Deployment of Various Methods of Human Relations**

This chapter has considered the general conditions of human relations deployment in Japan. Based on the previous discussions, this section examines the deployment of various methods of human relations in further detail.

**Company Newsletters:** In the iron and steel industry, company bulletins were introduced as a measure of in-house communication around 1948. In those days, bulletins and notices were published to provide information to trade unions and improve human relations. As stated earlier, the issue of in-firm communication was emphasized in the 5th Iron and Steel Committee of the ILO in 1954 [10, p.985].

At the Kawasaki Steel Corporation, the "Kawasaki Steel Newspaper" was published as a newsletter in addition to the "Newssheet" as a formal means of public relations within the company. By 1957, business establishment "tip-offs," which included detailed information and news about certain colleagues, were published in every business [21, p.505]. At the Hitachi Shipbuilding Company, human relations management occupied an important position in labor management from 1955 to 1965, and company newsletters were published to improve the morale of workers and increase their cooperation in the workplace. More specifically, this enterprise published the "Hitachi Shipbuilding Newsletter" beginning in September 1951 and the "Labor Special Future" beginning in September 1954. In addition, various businesses published "tip-offs," such as factory reports, as a means of communication between general employees, managers and supervisors, and their families [22, p.397].

According to a survey by the Japan Association of Corporate Executives in 1963, the rate of firms that published newsletters was 80%. The relevant numerical value in enterprises with total assets of more than 20 billion yen was 95.7%. The proportion of firms that emphasized “information on internal news” was 72.9%. In terms of relevant numerical values, “friendship and exchange among employees,” “informing management policy widely,” and “conveying the conditions of the company” were 64.9%, 58.7%, and 56.1%, respectively [23, pp.3-5].

Many companies intended to promote cooperative consciousness to not only workers but also their families through the use of company newsletters. Therefore, the characteristic of human relations can be found in the “management by the whole family.” The aim of such a movement was to substitute the family for the preservation function of labor, which should have been initially preserved by the company [6, pp.96, 105, 107].

**Suggestion Systems:** Although there were many aspects concerning prewar commendation, contrivance systems, and job instructions of TWI, the number of followers were few, and the effect of mutual communication was small [10, p.985. However, after 1955, when the productivity movement began in Japan, the number of firms that implemented suggestion systems rapidly increased. For example, an investigation by the Japan Federation of Employers’ Associations in October 1957 clarified that the rate of companies that utilized a suggestion system as an independent system was 82.4%. In addition, the proportion of firms that implemented it within four years was 70.4%. Thus, many companies began to adopt such systems during the latter half of the 1950s [24, pp.1-2].

By the early 1960s, suggestion systems were introduced in most of the main companies. With regard to other enterprises, one survey clarified that suggestion systems were implemented in more than half of the participating firms. There are various reasons for such usefulness and the significant role they played in human relations and the coordination of employee management [25, p.16].

According to a 1963 survey by the Japan Association of Corporate Executives, 75.2% of firms included suggestion systems. Concerning its adoption by period, the proportion of companies that introduced it by 1958 was 49.4%. The relevant numerical value of firms that adopted it between 1959 and 1962 was 37.4%. Most of the contents of the systems focused on “the improvement of production technology,” for which its rate was 70.9% while the rate for “business procedures” was 15.9% and that for “product policies” was 8.2% [23, pp.125-129].

Although suggestion systems were important measures for communication between employees and management, the deployment of human relations in Japan was based on supervisor training methods created in the United States and related to education for job improvement [25, p.17]. In fact, many Japanese firms introduced suggestion systems to follow up on the job modification movement begun by TWI [26, p.201]. Meanwhile, in the United States, suggestion systems were developed as a means of consultative management for promoting employees’ self-consciousness and grievance disposition. In contrast, suggestion systems in Japan were developed based on job methods of TWI, not as a measure for mutual communication. A 1958 report by the productivity inspection team of industrial training in the Japan Productivity Center pointed out that it was necessary to re-examine the suggestion system approach to establish it as part of communication programs [27, p.15]. For instance, at the Kawasaki Steel Corporation, the introduction of a suggestion system for improvement dates back to the deployment of TWI in the early 1950s. This company recognized the necessity of a suggestion system to improve the effect of TWI, after which it established the



education subsection at the central office in July 1954 and reconsidered a company-wide education system. Under such conditions, the suggestion system for improvement, established in 1955, had become an effective means of raising employees' awareness of human relations management [21, p.416]. In this way, the suggestion system was introduced as not only a means of communication but also a measure for improving human relations within the company.

With regard to the method of submitting a suggestion, in Japan, they were generally submitted through the manager, which is another characteristic of the suggestion system in Japan and not other countries [25, p.17]. For example, according to a survey by the Japan Federation of Employers' Associations in October 1957, the rate of submitting a suggestion through the head of the section to which the employee belonged was 47.1%, which exceeded the rate of the ballot box method (21.9%). The former method aimed at making managers immediately grasp the situation and involving them to make certain improvements [24, pp.4-5]. Concerning the attitude of employees toward the suggestion system, the same survey found that they were generally cooperative (10.4%) while the relevant numerical value of the companies was 60.9% [24, p.18].

Suggestion systems were implemented to rationalize rather than serve as a means of communication between employees and management. For instance, at the Nissan Motor Corporation, a suggestion system was adopted in June 1955 to determine the effect of company-wide cost reductions made the year before. In this case, obtaining suggestions from the employees in each factory was an effective way to realize such effects [12, p.295].

**Attitude Surveys:** Morale surveys began to be implemented in the latter half of the 1950s. However, this movement only relied on standardized styles, especially because interviews were somewhat unreliable. During this period, a few cases utilized survey results for business management [24, p.15]. In addition, attitude surveys by professional counselors were limited, whereas those administered by upper management were numerous. This was related to the general foreman's role of consulting with subordinates, which was primarily introduced in the iron and steel industry [6, p.144]. For example, the Nihon Kokan Corporation implemented a morale survey in 1952 and used its results to improve the foreman system [10, p.985].

According to a 1963 investigation by the Japan Association of Corporate Executives, the proportion of firms that implemented attitude surveys in the previous three years or more than three years earlier were 27.5% or 7.4%, respectively (total value 34.9%). However, the rate of enterprises that did not conduct a survey over the previous three years was 64%. Among the firms that did implement an attitude survey over the previous three years, the rates of "finding of dissatisfaction and groan of employee," "grasping an employee's sense of belonging to the company," and "discovering a communication bottleneck in the company" were 48.9%, 27.8%, and 12.8%, respectively [23, pp.133-136]. Overall, attitude surveys gave a certain "scientific basis" to labor management, and they were useful as a means of rationalizing labor management and conducting labor audits [6, p.138].

**Grievance Disposition Systems:** Although such systems have been discussed in previous articles by employers, there were only a few cases in which grievance disposition systems were actually used in the early 1960s. In this system, it was necessary to provide training to enhance the abilities of managers and supervisors at the lowest levels so grievances could be effectively handled. Despite such a need, such training was limited. With regard to this point, there was a considerable difference between Japan and the United States. In terms of the latter, responsibilities were given to foremen, and most of the complaints were settled at the

workplace level [27, pp.13-15; 28, pp.30, 33; 29, p.150]. However, in Japan, complaints were not considered through collective bargaining but through the use of grievance disposition systems [31, p.210]. For instance, at the Nissan Motor Corporation, a written agreement concerning grievance dispositions was made between labor and management in December 1952 to raise productivity and democratize the workplace by improving in-firm human relations [12, p.296].

**Personnel Counseling System:** As mentioned above, this measure was not widely used in human relations. Such a situation did not change even in the 1960s. According to a 1963 survey by the Japan Association of Corporate Executives, only 14% of firms utilized a personnel counseling system while 83.9% of companies did not use such a system. During the period when this system was adopted, 30.8% of enterprises introduced it by 1958. Thus, the adoption period of personnel counseling systems was later than that of the suggestion systems. For instance, in companies that provided personnel counseling, most of the consultations (between 1960 and 1963) were issues that occurred due to job transfers and reshuffling personnel. The rate of such counseling was 25% among companies that had a personnel counseling system. Consultations concerning issues of human relations at the workplace accounted for 23.5% [23, pp.125, 127, 129, 131-133]. According to these findings, the deployment of a personnel counseling system was not advanced compared to other measures of human relations.

**Welfare Service Measure:** This important measure focused on psychological and ideological effects rather than economic effects as part of human relations management after World War II [32, pp.648-649]. A report on company welfare programs in April 1968 by the Council for Industrial Structure noted a change in the emphasis of welfare service to human relation functions [33, pp.74-75]. In the pre-war period, welfare measures were implemented based on certain principles and paternalism. However, with regard to corporate objectives, a welfare service system can help improve productivity by reinforcing employees' sense of belonging to a company [6, pp.151, 154-155].

According to an investigation in FY1953 by the Japan Federation of Employers' Associations, the percentage of measures related to housing was 27.8%. The relevant numerical values concerning culture, physical training and recreation, livelihood assistance, and the mutual benefit system were 21.4%, 17.4%, and 9.1%, respectively [34, pp.1, 3]. Another survey by the Japan Federation of Employers' Associations in October 1958 pointed out that similar numerical values were 82.7% regarding housing, 79.4% concerning recreation, and 71.4% with regard to culture and physical training. These measures were used in many companies. The relevant numerical value concerning an in-house deposit system for employees was 38.2%, and this system indicated a certain rate of diffusion [35, pp.1, 108-109]. According to a 1963 survey by the Japan Association of Corporate Executives (overlap answer), the rate of welfare services items emphasized by the company were as follows: 52.3% for housing and assistance with housing expenses; 43% for medical, health, and sanitation facilities; 37.6% for assistance with cultural and physical activities; 25.8% for internal lending systems; 22.3% for dining and assistance in food expenses; and 21.7% for various types of recreational activities. The rate of firms that intended to increase welfare expenses was 60.7%. Therefore, the improvement of morale was especially emphasized as the purpose of having a welfare program [23, pp.146,-148, 151-152].

This chapter has examined the implementation of human relations in Japan. Based on these discussions, the following section considers the deployment of human relations in Germany.

## **JAPANESE CHARACTERISTICS IN THE DEPLOYMENT OF HUMAN RELATIONS**

Based on the foregoing discussions, this section considers Japanese characteristics in the deployment of human relations as conclusions of this paper.

In Japan, methods of human relations were deployed in order to response to the need to replace management methods based on the internal paternalistic and familial relations with modern management style. The conflict between labor and management as a result of the legal recognition of labor unions and growing labor movement called for reforms in management methods, and human relations was deployed in response to this demand. Therefore, the broad deployment of various human relations policies typically included company newsletters, suggestion systems, employee attitude surveys, human resource consultation, and employee welfare activities along with an emphasis on labor harmony within the deployment of human relations [6; 7; 8, p.20]. However, Japan's management culture, with its characteristic paternalism, life-time employment, and seniority order system, was not fully prepared to deploy and commit to the original American-style human relations model.

In the United States, some industrial trade unions were horizontally organized by the industry. In contrast, Japanese-style enterprise trade unions were formed only from labor relations built on lifetime employment. Labor unions' basic units of activity were formed according to individual corporations; thus, labor conditions were negotiated and agreed upon according to individual corporate conditions, and would generally not go beyond those bounds [36, pp. 10-13, 105-106; 37, pp. 367, 371-372; 38, p.9; 39, p.513; 40, pp.10-13, 105-106]. Unlike the United States, where rationalism prevailed and wage levels were high, in Japan, aspects of human relations were deployed while being combined with Japanese human relations that emphasized "-isms," such as "family-ism" [7, p.221]. Tendencies toward paternalism and management philosophy based on "family-ism" were strong. When human relations were forcibly introduced, a mixture of management styles based on "family-ism" and human relations management easily emerged [9, pp.20-21; 29, pp.30, 34]. According to the aforementioned survey in 1963 by the Japan Association of Corporate Executives, 75.6% of firms did not consider informal organization at the workplace an important issue in business management, whereas the proportion of companies that did was only 20.6% [23, pp.143-144]. The difference between Japan and the United States with regard to this point is an important characteristic.

In Japanese companies, human cooperative relationships and improvements in communication were especially emphasized. This was related to the lack of dialogue between labor and management. In addition, there were differences of conditional structures between Japan and the United States and between Japan and Germany, which determined the morale of workers [41, p.12]. For instance, foremen primarily serve as the front line in the enforcement of human relations. Thus, they have the broad authority to manage employee affairs and implement efforts to improve human relations, as seen in the United States [42, p.7]. However, in Japan, there were many cases in which such authority was not delegated to the foremen in the workplace [30, pp.19, 34]. This had a significant influence on the introduction and development of human relations.

The system of worker participation in management did not wait for new laws or other forms of governmental intervention. Rather, participation voluntarily occurred in small group activities with QC circles or joint labor-management consultation systems, which negotiated and discussed labor-management issues on the basis of premise of creating trust-worthy relationships between labor and management. However, a legal codetermination system, such as that in Germany, did not exist at the plant level and certainly not at the top-management

level. Joint labor-management consultation systems proliferated with the collaboration of labor and management as per the productivity movement of 1955, and gradually took shape through discussions of productivity improvement issues [43, pp. 101-102; 31, pp. 205-206, 210; 44, pp.17-18].

In Japan, joint labor-management consultation systems differed from collective bargaining and were established on the foundation of horizontal corporate labor relations through enterprise trade unions. Taken from systemic and functional perspectives, that collective bargaining and joint labor-management consultation systems, essentially heterogeneous, became tightly woven together were characteristic to Japan's systems [41, p. 105, 108-110, 112-113; 44, p.55]. In other words, official collective bargaining as defined by collective agreements was done formally and tended to be extremely rare; collective bargaining became a mere façade [31, pp.209-210]. Further, matters of labor conditions were the focus of not only collective bargaining but also the joint labor-management consultation system, which occupied a greater position. Japanese-style labor relations were oriented toward labor-management consultation, and even in collective-bargaining matters, in which there existed conflicts of interest, issues tended to be resolved harmoniously and in the unique manner of the joint labor-management consultation system [43, pp.117-118, 123-124].

The structural characteristic determined by various conditions, such as Japanese labor relations and the social consciousness of employees, must have had a significant influence on the introduction and development of human relations [45, p.24]. Characteristics seen in the backwardness of management in Japanese industrial enterprises and complication of industrial relations were factors that did not make the introduction of human relations as efficient as it was in the United States [46, p.7]. In large enterprises, the broad introduction of human relations measures and the formation of cooperative relationships by them were promoted while being determined by groupism under the labor market that focused on lifetime employment and senior wage systems [11, pp.294-295; 47, pp.14-15; 48, pp. 9, 13]. However, there were paternalistic relationships of mutual trust in Japanese enterprises. Therefore, it was not always suitable to introduce several techniques developed in the United States based on cold, contract-like human relations [11, p.295].

The fact that suggestion activities played a significant role in improving product quality and the morale of workers in Japanese enterprises was also deeply connected to collectivism. In this regard, although the deployment of human relations and TWI influenced the introduction of suggestion systems, the purpose of such systems was to improve production and efficiency rather than create good human relations in the workplace through two-way communication.

### **CONCLUDING REMARKS**

From the perspective of this paper, to improve productivity at the time of introducing the American management method, the measures and elements that were directly related to improving "efficiency" (economic efficiency) were concerned with the development of productive forces; therefore, these principles were relatively, proactively, and widely introduced.

In contrast, there were many aspects of American-style management that did not necessarily conform at the time to the conditions in Japan. These included productive forces, in particular, aspects with American characteristics, such as the culture and relationships shared among labor and management, value for management, management style, and management tradition/culture. Therefore, in many cases, there was strong resistance and opposition that

prevented the introduction of these aspects, and it was only possible to introduce them by modifying them in the process.

Furthermore, in reality, there were many cases wherein they pursued the Japanese method of management, in regard to productive factors, even though mechanisms and principles for improving efficiency were introduced. In particular, due to the influence of Japanese corporate traditions and management values and various systemic factors within companies, and industrial relations, many Japanese companies sought the Japanese-style adaptation. Zeitlin's research emphasizes the active altering of the American Model. Here, Zeitlin points out that there was selective adaptation of American technology and management that was tailored to the local environment, and that creative modifications and innovative hybridizations were observed. However, these modifications and hybridizations should not be understood as a negative phenomenon or indications of domestic resistance to the transfer process, or even as the mark of inevitable compromise. Rather, they should be realized in the positive light, i.e., the modifications originate from experimental work and innovative learning [49, pp. 11, 15–20].

Thus, the people involved in the industry took advantage of their experience, accumulated while decomposing, modifying, and re-concentrating the elements of the American model to best fit the local environment. By doing so, they reinterpreted, modified, and at times changed their country's practices and systems. Japanese industrialists had significant existing knowledge of American-style practices. Zeitlin points out that Japanese industrialists' prior familiarity with American-style practices enabled them to treat US technology and management not as a unitary model to be imitated wholesale, but rather as a suggestive point of departure for selective adaptation, creative modification, and innovative hybridization [49, pp. 38, 40–41].

The following mix of American and Japanese factors in management systems can also be discerned. First, hybridization of American human relations and human relationships based on Japanese family-ism. Second, mix of American methods based on cold contracting human relations and Japanese methods emphasizing behavioral patterns based on collectivism.

**Table** visualizes the conditions surrounding the introduction of American human relations methods in Japan and the factors defining it, based on the discussion so far in this paper.

When considering the deployment of human relations in relation to important factors that effected on the implementation of such American management methods, influences of management values and management traditions and cultures, such as management values based on Japanese collectivism and mutual trust between company members can be seen in the following points. Japanese norms vis-à-vis the deployment of human relations, such as seen in methods of human relations management including the entity family and mix of managerial family-ism and human relations management were also examples of the influence of management values based on collectivism. Family-ism and paternalism before the war and management values based on "trust relationships" rather than "contract relationships" influenced the deployment of human relations.

Next, examining the institutional factors impacting the Japanese-style of adaptation in the process of Americanization, the framework of collective agreement and its Japanese characteristics led to a tendency to avoid collective bargaining. In large companies, human relations methods were deployed as a mechanism for in-

**Table Conditions surrounding the introduction of Human relations in Japan**

Management Methods		Human Relations
Deployment and Factors Affecting Them		
Overall Conditions in the Deployment of American Management Methods		<ul style="list-style-type: none"> <li>• Deployment of human relations for the purposes of modernizing and democratizing management after the war</li> <li>• Broad deployment of human relations measures</li> <li>• Deployment of human relations determined by collective behavioral patterns in companies and corresponding promotion of cooperative relations in workplaces</li> <li>• Inactive deployment of personnel counseling compared with other human relations methods</li> <li>• Deployment of human relations with purpose of rationalization such as job improvement and increasing work efficiency</li> </ul>
Deployment Characteristics of American Management Methods		<ul style="list-style-type: none"> <li>• Emphasis on improvement of communication and workers' morale by deploying human relations</li> <li>• Deployment of human relations as a measure for increasing corporate consciousness and countermeasures to trade unions in large enterprises</li> <li>• Deployment of human relations in small and medium enterprises</li> <li>• Important role of human relations as foundation of manufacturing in combination with Japanese improvement suggestion activities</li> <li>• Emphasis on cooperative relationships between management and labor in the deployment of human relations</li> </ul>
Modifications in American Management Methods		<ul style="list-style-type: none"> <li>• Japanese ways of deploying human relations, such as seen in methods of human relations management including the entity family</li> <li>• The submission of suggestions through managers with a view to making managers immediately grasp the situations of subordinates' and involving them in the necessary improvements</li> <li>• Emphasis on improvement of workers' morale in welfare service measures</li> <li>• Avoidance of collective bargaining by using the claim disposition system</li> <li>• Use of attitude surveys as an important measure of labor audits</li> </ul>
Amalgamation of American and German Elements		<ul style="list-style-type: none"> <li>• Hybridization of American human relations and human relationships based on Japanese family-ism</li> <li>• Hybridization of American methods based on cold contracting human relations and Japanese methods emphasizing behavioral patterns based on collectivism</li> </ul>
management method Factors of Modification of American	Influence of Traditions and Cultural Factors and Management Values on Business Management	<ul style="list-style-type: none"> <li>• Management values based on "trust relationships" rather than "contract relationships"</li> <li>• Influences of family-ism and paternalism before the war (necessities to transform them)</li> <li>• Management values based on behavioral style of collectivism</li> </ul>
	Influence of Institutional Factors	<ul style="list-style-type: none"> <li>• Undeveloped labor relations before the war (necessities to overcome it)</li> <li>• Labor democratization and enhancement of labor movements</li> <li>• Weak regulating powers of trade unions to management</li> <li>• Lack of legal institutions for communication between management and labor, such as work councils in Germany</li> <li>• Supervisor system with insufficient delegation of authority to low level managers at production spots</li> </ul>
	Influence of Market Structure Factors	<ul style="list-style-type: none"> <li>• Influences of labor market based on lifetime employment system</li> </ul>

**Source: This table was compiled on the basis of discussions in this paper by the author.**

creasing corporate consciousness and countermeasures to trade unions under labor relations with the three basic pillars of lifetime employment system, seniority

wage system, and enterprise trade unions. Such Japanese cooperative labor relations promoted the deployment of human relations with the purpose of rationalization such as job improvement and increase of work efficiency at workplaces based on close relationships between supervisors and subordinates. However, supervisor system with insufficient delegation of authority to low level managers at production spots influenced on the

deployment of the grievance disposition system. Deployment of various measurements concerning communication within companies was emphasized due to lack of legal institutions for communication between management and labor, such as work councils in Germany.

When comparing conditions in foreign country, Japanese characteristics in the deployment of human relations can be clearer. For instance, Germany did not need to modernize its management as strongly as did Japan. Although reforms in human relations-driven labor were undertaken at the behest of the United States rather than by Germany's own volition, the legal establishment of systems for employee participation in management, typified by codetermination, established a strong framework for labor relations. The deep-rooted differences between the United States and Europe in terms of understanding and implementing employees' participation in the management process were one of the hindrances in the Americanization of European economic life [2, p.193]. The complementary labor agreement with codetermination at the plant and top management levels formed the framework of industrial relations during the post-World War II period. Thus, the politically motivated attempt by the United States to promote the introduction of human relations to transform industrial relations was unsuccessful. As these examples demonstrate, conditions for the deployment of human relations varied greatly between Germany and Japan.

In Germany, labor relations derived not from management methodologies as in the US, but rather from systems embedded in the law. As a result, the deployment of human relations in corporations was limited. We can observe that the main fields of human relations deployment were issues that could not be automatically solved by legal regulations such as codetermination system. Therefore, Improvement of human relations and labor climate in workshops and relations between foremen and subordinates was emphasized. These were problems out of codetermination system [3, S.190, 202; 50, pp.169, 171].

Whereas the traditional German-style industrial relations, emphasizing technology and skills, was an important background factor in the quest to design a method compatible with the German adaptation of American management style and system, the structural characteristic determined by various conditions, such as Japanese labor relations and the social consciousness of employees greatly influenced on the deployment of American human relations methods. In Japan, under the specific labor relations and collectivism, the promotion of rationalization countermeasures for workers rather than creation of good human relations in the workplace was strongly emphasized and pursued in the introduction of human relations.

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# The impediments to the application of International Financial Reporting Standards from the point of view of academics and professionals in the Sudan

**Dr. Alfateh Alamin Abdalrahim Elfaki**

Associate Professor, Department of Accounting - Kassala University

**Mahjoub Al Tayeb Mohamed Hassan**

lecturer in accounting - Kassala University

## ABSTRACT

The study the impediments to the application of International Financial Reporting Standards from the point of view of academics and professionals in the Sudan, where the problem in question and the main obstacles to the application of international accounting standards in the Sudan? Branched out by a number of questions including; is there a specific mechanism to commit companies in Sudan to apply international accounting standards? Is the organization of accounting and auditing in the Sudan identify training needs necessary to complete the process of transition to international standards? Do installations in Sudan is ready financially and to complement the process of transformation? What is the role of the accounting curricula to improve the application of International Financial Reporting Standards?. The study aimed at the statement of the challenges and constraints facing the application of International Financial Reporting Standards in the Sudan, and to clarify the mechanism for the application of international standards and the associated requirements of joining the International Federation of Accountants (IFAC) system, and the reflection of the application of international standards of accounting and auditing the accounting curriculum development in higher education institutions (the impact on accounting taught scientific movement in accounting). The inductive and deductive approach was used, as was the use of the questionnaire as a tool for data collection. The researchers reached to many results, the most important factors affecting the internal environment directly impact in the application of International Financial Reporting Standards these factors in many of the most prominent elements of the administrative policies and the size of the business of the company and its capital, and the prevailing culture, the size of the funding for the transformation process and the application of international standards and the extent of readiness as well as the experiences and competencies necessary accounting full transformation. The failure to meet the requirements of the external environment was largely on the application of international accounting standards, the most important of these requirements in the commitment to the application of standards as a condition of joining the International Federation of Accountants (IFAC) in accordance with the statements of membership obligations (SMO,s) that development and performance, add it to join the World Trade Organization, global and regional markets. The study also recommended many of the recommendations, including attention to training of accountants, and review of accounting curricula in higher education

**keywords:** internal environment, the external environment, capital markets, accounting curricula, the International Federation of Accountants (IFAC)

## INTRODUCTION

A standard is a model that is measured and measured by its light weight, length, or degree of quality. In accounting, the primary guide is to measure the processes, events and circumstances that affect the financial position of the entity, the results of its operations and

the delivery of information to the beneficiaries; the criterion in this sense relates to a specific type of transaction, event or circumstance. The International Accounting Standards Board defines the accounting standard as guidelines for professionals to support their judgment and wisdom. It is also a highly professional description of expression or practice in similar circumstances and is adopted as a framework for assessing the quality and efficiency of the work to determine the nature and depth of professional responsibility. There are many justifications that have led to the need for accounting standards to govern the practice of the accountant's work. These include the emergence and growth of multinational companies, the growth of global financial markets, the increasing volume of global trade, the facilitation of comparisons of financial statements, the reduction of data processing costs and the flow of investment. And notes the importance of the existence of accounting control standards. In order to apply the International Financial Reporting Standards (IFRS) issued by the International Federation of Accountants (IFAC), there is a need to have a good structure on which implementation is based, so it requires the necessary material and human resources to complete the process of full IFRS adoption.

### **The study Problem**

The problem of the study can be expressed in the following key question: What are the obstacles to applying IFRS in Sudan? This can be expressed by the following sub-questions: 1. Is there a specific mechanism to require companies in Sudan to apply IAS? 2. Has the Accounting and Auditing Organization of the Sudan identified the training needs needed to complete the process of transition to international standards? 3. Are enterprises in Sudan financially and humanly ready to complete the transformation process? 4. What is the role of accounting curricula in improving the application of IFRS? 5. Is there sufficient awareness in the Sudan of international accounting standards? 6. Is there sufficient awareness of new changes in disclosure requirements in accordance with International Accounting Standards?

### **The importance of studying**

The study is important because it is important to study the obstacles facing Sudan in the process of transition to the full implementation of international accounting standards and how to face them in practice. And scientifically attempt to provide a scientific framework based on logic to complete the process of transformation of the full application taking into account those obstacles and potential problems

### **Objectives of the study**

1. Statement of the challenges and constraints facing the application of the International Financial Reporting Standards in the Sudan.
2. Clarification of the mechanism for applying international standards and the associated requirements for joining the IFAC system.
3. Statement of the reflection of the application of international standards of accounting and auditing on the development of accounting curricula in higher education institutions that study accounting (impact on the scientific movement in accounting).

### **Study hypotheses**

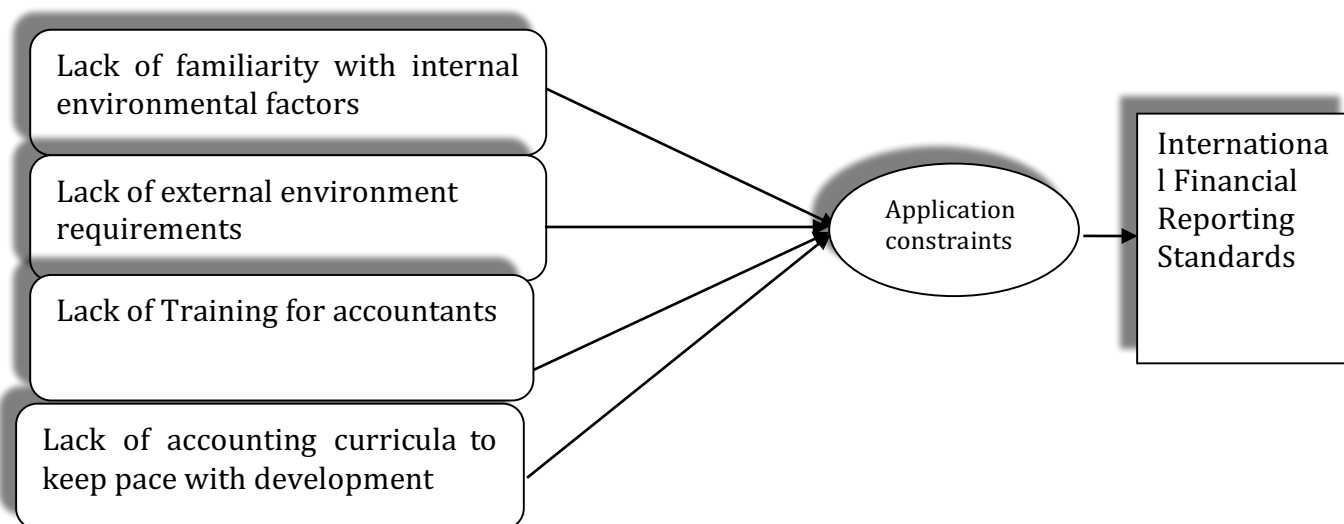
1. There are no statistically significant differences in the degree of knowledge of the effect of internal environmental factors on the application of international accounting standards according to the variable of scientific and professional qualifications.
2. There are no statistically significant differences in understanding the impact of the requirements of the external environment and the application of international accounting standards according to the variable of scientific and professional qualification.

3. There are no statistically significant differences in the degree of awareness of the importance of training accountants in the effective application of international accounting standards according to the variable of scientific and professional qualifications.
4. There are no statistically significant differences in the fact that the failure to keep up with the accounting curricula of the institutions of higher education of modernity and development negatively affects the effective application of international accounting standards according to the variable of scientific and professional qualification.

### METHODOLOGY OF THE STUDY

Inductive and deductive follow-up was adopted. The first was used when formulating the study problem, and the second was used when formulating the hypotheses. As well as the historical approach to the presentation and analysis of previous studies and trace the phenomenon historically, and was based on the descriptive approach through the field study.

#### Study Model



#### Previous studies

##### **Study (Ahmed and Muhammad 2010):**

The study examined the option of Algeria to adapt to the requirements of disclosure in accordance with international accounting standards. The international dimension of the activities of the institutions led to the expansion of investment and financing opportunities for companies at the international level, but the enjoyment of these opportunities requires the fulfillment of a set of controls on the basis, form and content of the financial statements disclosed by these companies. These events have had an impact on the practical aspect of the institutions, especially with regard to the methods and means of communicating the outputs of the accounting system to the users in a correct, correct and appropriate manner by creating accounting practices that comply with the International Accounting Standards for the standardization of the accounting language. The financial statements produced by the current accounting system are more questionable than ever before, especially in the extent to which the information it provides to keep pace with The new international d, and therefore, the use of international accounting standards in the process of preparation and processing of financial statements has become a basic requirement, in order to meet the needs of different users of financial information. This prompted Algeria to try to harmonize and consolidate the disclosure of financial information with international accounting standards.

**Study (Ali, 2016):**

The problem of the study was that the globalization of international activity and the application of WTO requirements helped many international companies to operate outside their country either through their foreign branches or through their affiliates. Some of these companies prepare their financial statements for branches and financial statements according to the host country's accounting standards. Local accounting standards need to be harmonized to comply with international accounting standards to provide information that meets the needs of users in different countries. The problem can therefore be framed in the following questions: What is the International Compliance of Accounting Standards? What is the role of professional organizations in the international harmonization of accounting standards? What are the mechanisms for achieving this consensus? In order to answer these questions, the study aimed at introducing the International Accounting Standards Compliance and establishing mechanisms to achieve them. The study found the obstacles to international compliance with accounting standards, including local traditions, economic and social conditions, sovereign status and local legislation. The study recommended overcoming obstacles to international consensus.

**Study (Gerlf 2010):**

The researcher sought to develop a proposed framework for the development of accounting standards in the Kingdom of Saudi Arabia to achieve compliance with international accounting standards, showing the importance of this compatibility to companies operating in the Saudi accounting environment, with a field study on Saudi companies to clarify the possibility of benefiting from compliance with standards To consolidate the language of financial reports at the level of companies operating in Saudi Arabia and encourage attracting foreign investments to the Saudi capital market to raise the level of efficiency of the market and thus increase the rate of economic growth in the Kingdom of Saudi Arabia For Saudi Arabia.

**Study (Dahbi, 2007):**

The study dealt with the application of international accounting standards in Syria. The researcher believes that Syria was affected by the developments and changes in the world and tried to cope with them by joining the World Trade Organization and the Syrian-European partnership, it was necessary to adopt the application of international accounting standards. The researcher stressed in his research that there is a need to apply them reflected in the economic necessities and the requirements of measurement and disclosure and legislative and financial necessities. The researcher pointed out the factors that prevent the application of international accounting standards, which are internal environmental factors such as the legal system of the state, tax laws, the extent of state intervention in economic activity, the role of the accounting profession and the development of the stock market and support his theoretical studies in the field study, To the application of the International Accounting Standards in Syria, and that there are a number of internal cultural factors that hinder their application as well. Each factor has been studied individually in order to overcome it and to a new accounting environment based on the application of unified international accounting standards D to achieve the desired benefits.

**Study (Meliji, 2014):**

The study aimed to test the impact of the transition to international financial reporting standards on the quality of accounting information and the value of registered companies on the one hand and analyzing the implications thereof on investors' decisions in the Saudi business environment on the other hand. To achieve these objectives, the study relied on analysis of the financial reports of Saudi listed companies which belong to the banking and financial services sector (11 banks and insurance companies) (35 companies during the period

prior to the transition to IFRS 2007) and the post-transition period to IFRS (2010 to 2013) to build two models to measure this impact: firstly, to measure the impact of IFRS on the quality of accounting information (first hypothesis), and secondly, to measure the impact on the value of the company (second hypothesis) The study concluded that there is a positive impact of the international financial reporting standards on the quality of the accounting information represented in the reduction of the total receivables, as well as the positive impact of these The criteria for the value of listed companies are represented by an increase in the value of Tobin's Q. The study also concluded that international financial reporting standards affect investor decisions and future trends, giving investors a positive indication of financial performance. For. Based on the above findings, the study recommended that the preparation of the Saudi business environment be completed in order to complete the transition to international financial reporting standards in all economic sectors, as well as increase the awareness of the financial report preparers and users and the auditors of the importance of these standards. With the necessity of obligating the Saudi Capital Market Authority to all registered companies to implement them.

## **THE THEORETICAL FRAMEWORK OF THE STUDY**

### **Adoption of International Financial Reporting Standards (IFRS)**

"In the past few years, the development of international accounting standards has made a number of successes in achieving greater recognition and use of IFRS, and in 2002 the European Union passed legislation requiring companies listed in Europe to apply IFRS in their consolidated financial statements Which became effective in 2005 and is applied to more than 7,000 companies in 28 countries. The adoption of IFRS in Europe means replacing national accounting standards and requirements as a basis for the preparation and presentation of financial statements In many countries outside Europe, are moving towards the adoption of IFRS. In 2005, these standards have become mandatory in many countries in South-East Asia, Central Asia, Latin America, South Africa, the Middle East and the Caribbean "4 Other countries that have adopted national standards that reflect IFRSs such as Australia and Hong Kong, and more than 70 countries that have requested their listed companies to apply IFRS when preparing and presenting their financial statements in 2005. Mentioned that Jordan was one of the first Arab countries to have applied the International Financial Reporting Standards. The most recent exceptions to IFRSs are the United States, Japan and Canada, in accordance with the standards of the size of their capital markets. Companies in these countries are still required to follow local accounting standards (Mirza, Graham, 2006). Attempts to set standards at the international level began at the beginning of this century. The first accounting conference was held in 1904 in St. Louis, USA under the auspices of the Association of Chartered Accountants. The focus of the conference was on the possibility of harmonizing accounting laws between countries.

The Third International Accounting Conference was held in New York where three main papers were presented: continuous consumption, consumption and re-evaluation, commercial or natural year. These conferences are held every five years. These conferences, which resulted from the growing pressure of the users of the financial statements from shareholders, investors, creditors, trade unions, trade unions, international organizations and government agencies, resulted in the formation of several organizations aimed at setting international standards and creating the necessary environment for implementing these standards and the most important of these organizations (Abu Nassar, Hamidat, 2008)

- International Accounting Standards Board (IASB).
- International Federation of Accountants (IFAC).
- International public sector Accounting Standards Board (IPSASB)

### **International Accounting Standards Board (IASB)**

The International Accounting Standards Board (IASB) was formerly known as the International Accounting Standards Committee (IASC), the International Accounting Standards Committee (IASC), from 1973 to 2001 (the date of its transition to the IASB), the body responsible for setting international standards. The main objective of this committee is to urge the authors of national accounting standards around the world to improve and standardize national accounting standards. This Committee has always linked international accounting with a special relationship. The IASC was established in 1973 through an agreement between professional accounting bodies Nine countries. Since 1982, its membership has been composed of all professional accounting bodies that were members of the International Federation of Accountants (IFAC), more than 100 countries. "In 1989, the IASB developed and published the conceptual framework for the preparation and presentation of financial statements, which was amended by the International Accounting Standards Board (IASB) in 2001. The Framework defines the general framework for guiding the IASB in the process of issuing standards In the process of making adjustments to the existing standards and in the process of addressing any of the accounting issues that are not directly covered by current international accounting standards.

### **International Federation of Accountants (IFAC)**

Many countries in the world adopt international accounting standards because there are no local standards as national standards, others follow accounting standards based on international accounting standards, and a large number of large multinational corporations adopt these standards. The number of countries participating in the International Federation of Accountants 100 countries. Therefore, international accounting standards are more widely applied than other standards. They are more prevalent in different countries of the world, prompting the European Union, Australia and a number of other countries to follow the process of accounting harmony in the world. International accounting standards are based on principles and concepts, while US accounting standards rely on rules and provisions, and do not focus too much on the substance of substance above the form adopted by international standards.

### **International Public Sector Accounting Standards (IPSASB)**

This Board is specialized in the development of International Public Sector Accounting Standards (IPSAS). The United Nations General Assembly adopted the CEB recommendation in 2006 and agreed to the adoption of IPSAS by the United Nations (United Nations, 2010). Other organizations within the United Nations system soon took this approach, recognizing that IPSAS were the most appropriate standards Accounting for non-profit intergovernmental organizations).

### **International Financial Reporting Standards**

The application of accounting standards has an impact on the role and performance of companies in general, especially with respect to the parties that are associated with these companies, including capitalists, financiers, commercial clients, employees, governments and others. Accounting standards are measures by which financial statements are validated and whether transparency is achieved. Accounting standards and standards are no longer an option but rather an imperative and an economic, financial and administrative necessity.

### **Advantages of applying IASs**

(Kieso, and Wygandt, 1995, p: 87) found that there are many advantages to applying IASs:

1. The application of international accounting standards helps to access international capital markets.

2. The application of international accounting standards leads to an improvement in the quality of the information produced by the accounting system, which increases the efficiency of management performance and thus helps to access more relevant and reliable information when making different decisions.
3. The application of the International Accounting Standards (IAS) is internationally accepted and this contributes to the qualification of accountants and their efficiency and makes them able to work in international markets.
4. The application of IAS helps standardize the preparation of the financial statements of multinationals, leading to openness to global markets and increased investment. Application of International Accounting Standards In many countries, income tax departments have been required to require the application of international accounting standards when filing corporate tax returns (Al-Mutairi, 2011)

Accordingly, the researchers believe that success in the application of international accounting standards would achieve many benefits, some of which can be highlighted as follows:

1. Standardization in the components of the financial statements in all similar companies. contribute to the development of the profession and make it close to the accounting applied in developed countries, which promotes transparency and improve disclosure processes.
2. Increase and enhance user confidence in financial statements.
3. Contribute to providing guidance to assist accountants in preparing financial statements.  
directly contribute to the promotion of professional performance.

### **Impediments to the application of international accounting standards**

An important obstacle to accounting consolidation at the international level is the following (Ali, 2016):

- a. Protected traditions: The process of accounting development depends on a combination of historical, economic, political, organizational and social factors. Local accounting development (at the national level) is part of the international accounting development. Therefore, the latter depends on these factors and at the same time stands in the way of it. The world wants to implement a new world order after its national system.
- b. Economic and Legislative Obstacles: Members of the society, in particular members of the financial community, need information from accounting, which is intended to provide information to different parties. It operates within a specific economic pattern, which requires the choice of certain accounting methods and procedures. On the other hand, The expansion of accounting and its evolution is a legislative structure and is a reflection of national cultural traditions
- c. Sovereign status: As an obstacle to accounting and national unification, it leads to the unwillingness to accept settlements that include changing accounting practices in preference to other international.

### **Field study**

The field of the study is the construction of the study tool, which consists of designing a questionnaire that includes the main or minor factors or variables that represent determinants or obstacles facing the overall application of IAS. The questionnaire included a dependent variable in the application of international accounting standards and four main variables (independent) : Internal environment, external environment, training and education. These variables contain 26 sub-variables. The questionnaire is designed on the 5-point Likert scale, where 1 represents a complete lack of approval, which indicates a very low level ... to the 5th



grade, which represents full approval, which indicates a very high level. A set of statistical methods were used for the purposes of analyzing the results of the questionnaire and testing the explanatory capacity of the proposed model; These were:

1. To verify the stability of the study instrument, use the Cornbach's Alpha test as an indicator of internal homogeneity, the Friedman Chi Square test,
2. To calculate the mean and standard deviations of all proposed model variables, a frequency analysis was used.
3. To identify and determine the significance of the differences associated with the descriptive variables of the study sample was used (One - Way Anova).

The following is an explanation of the sample of the study. Table (1) shows the sample of the study in terms of qualification and job. Table (2) shows the study sample in terms of experience and job

**Table (1) shows the sample of the study in terms of qualification and job**

Ratio	Number	Function							qualification
		Independent Auditor	Internal Auditor	Financial Manager	Accountant	Auditor to the Audit Court	Faculty member	Accountant at the Tax Court	
%13	24	0	0	0	5	12	0	7	BA
%30	55	0	5	4	20	0	14	12	M.A.
%23	42	0	4	5	0	12	17	4	Ph.D.
%34	61	20	6	7	1	22	0	5	Professional Fellowship
%100	182	20	15	16	26	46	31	28	Total
		11	%8	%9	%14.3	%25.3	%17	%15.4	ratio

**Table(2) shows the study sample in terms of experience and job**

Ratio	Number	Function							Experience
		Independent Auditor	Internal Auditor	Financial Manager	Accountant	Auditor to the Audit Court	Faculty member	Accountant at the Tax Court	
%12	22	9	4	2	0	4	0	3	Less than 5 years
%57	104	10	7	14	24	22	8	19	5 years and less than 10
%31	56	1	4	0	2	20	23	6	10 years and over
%100	182	20	15	16	26	46	31	28	<b>Total</b>

### Scale of questionnaire validity

The Cronbach coefficient was used to measure the reliability of the questionnaire. Table (3) shows the degree of reliability. It is noted that the questionnaire questions have a high degree of credibility among the sample. The total honesty coefficient for the four axes (0.897).

**Table (3) shows the degree of reliability**

Cronbach alpha	N. Items
.897	26

Table (4) shows the coefficient of honesty for each of the four axes. In addition, the questionnaire was arbitrated by a group of international accounting professionals (professionals and academics). Some of the amendments were suggested and included in the questionnaire. After the amendments have been made and finally approved by them.

**Table (4) shows the coefficient of honesty for each of the four axes**

Cronbach alpha	N. Items	The Axis
0.74	9	There is a direct impact of internal environmental factors on the application of international accounting standards
0.92	5	There is a statistically significant relationship between the requirements of the external environment and the application of international accounting standards.
0.85	5	The training of accountants contributes to the effective application of international accounting standards
0.90	7	Accounting curricula lack higher education institutions for modernity and development to keep up with the transformation process

### Statistical Processing Methods

Data were processed according to the statistical program (SPSS). The following methods were used:

1. Determination of the coefficient of validity of the study using the alpha coefficient Kronbach.
2. The weighted arithmetic mean, where each term has five measures (5) to (1), the following table illustrates this, and the goal is to demonstrate how to measure the terms in the study tool.

**Table (5) Likert scale of five degrees**

Weight to measure the mean	Degree	The linguistic meaning of the symbol	symbol
5.00-----4.21	5	Strongly Agree	S.A
4.20-----3.41	4	Agree	A
3.40-----2,61	3	Neutral	N
2.60-----1.81	2	Not Agree	N.A
Less than1.81	1	Strongly Disagree	S.D

### RESULTS AND DISCUSSION OF THE STUDY

The tables in Figures 6, 7, 8 and 9 are designed to show the average responses of the sample of each study hypothesis to the general average of their responses (S.A, A, N, , N.A and S.D). As to conducting a single-variance analysis.

**Table (6): Average responses of the study sample of the direct impact of internal environmental factors on the application of international accounting standards**

weight	standard deviation	Average	N	Phrase	
S.A	.58706	4.6978	182	The absence of clear administrative policies regarding the application of international standards and the lack of management's conviction contributes negatively to their application	1
S.A	.37696	4.8297	182	The company's capital and business size directly affect the process of adoption of international standards	2
S.A	.64583	4.6484	182	The lack of clear reference in corporate law and other business regulation to the application of IAS has a negative impact on corporate adoption of standards	3
A	.46725	3.3187	182	The lack of full knowledge of the culture of international accounting standards directly affects the process of transition to international standards	4
S.A	.00000	5.0000	182	The Company's lack of financial resources effect the application of IFRS	5
A	.45112	3.8681	182	The direct intervention of the State in economic activities is one of the constraints on the process of full transformation of international accounting standards	6
S.A	.64583	4.6484	182	Lack of allocation of financial and material resources hindering the process of transition to IAS	7
S.A	.64583	4.6484	182	The absence of clear provisions in tax laws negatively affects the process of applying IAS	8
S.A	.64583	4.6484	182	Lack of expertise and competencies in the accounting field is one of the obstacles to the effective application of international accounting standards	9
S.A		4.478			

Table (6) shows that there is a direct impact of internal environmental factors on the application of IFRSs according to the opinions of the surveyed sample.

**Table (7): Average responses of the sample of the study on non-compliance with the requirements of the external environment and the application of international accounting standards**

Weight	standard deviation	Average	N	Phrase	
S.A	.16391	4.9725	182	The non-application of the International Accounting Standards (IAS) is one of the main obstacles to WTO accession to the WTO	10
S.A	.38172	4.8242	182	Non-adoption of international accounting standards adversely affects disclosure and transparency in financial statements	11
S.A	.38172	4.8242	182	The absence of multinational companies in Sudan contributes to the lack of seriousness in the application of international accounting standards	12
S.A	.38172	4.8242	182	The accession of Sudanese companies to the global financial market requires the application of international accounting standards	13
S.A	.38172	4.8242	182	Non-application of international accounting standards is one of the main reasons why the Sudan has not joined the International Federation of Accountants	14
4.854		4.854			

Table (7) shows that failure to meet external environment requirements in the application of IAS is a constraint on the application of IFRS.

**Table (8): The average responses of the sample of the study sample that the lack of training is an obstacle to the effective application of international accounting standards**

Weight	standard deviation	Average	N	Phrase	
S.A	.38172	4.8242	182	Lack of training on IAS is one of the biggest obstacles to implementation	15
S.A	.48785	4.3846	182	The lack of a training plan for accountants on the new standards does not help in the good application of international standards	16
S.A	.38172	4.8242	182	The absence of a separate budget for training on international standards adversely affects the future application of accounting standards	17
S.A	.38172	4.8242	182	Courses are not organized by professional bodies to contribute to the development of the profession	18
S.A	.38172	4.8242	182	Lack of familiarity with IASs adversely affects the process of transition to IFRS	19
4.736		4.736			

The respondents' responses agreed that the lack of training is considered an obstacle to the application of international accounting standards according to the opinions of the respondents

**Table (9): Average responses of the sample of the study members about the lack of accounting curricula in the institutions of higher education for modernity and development to cope with the transformation process.**

Weight	standard deviation	Average		Phrase	
S.A	.38172	4.8242	182	Accounting curricula are not designed in universities with the participation of all the beneficiaries	20
S.A	.38172	4.8242	182	Accounting curricula in universities are not reviewed periodically and continuously	21
S.A	.38172	4.8242	182	The syllabus of the accounting curricula at the level of the course is not updated to accommodate developments with respect to IAS	22
S.A	.38172	4.8242	182	Accounting standards are not adopted as international guidance when designing accounting curricula in Sudanese universities	23
S.A	.61066	4.3559	182	Periodic reports are not received from the Accounting Profession Board regarding accounting standards adopted	24
S.A	.38172	4.8242	182	There are no meetings with students of the accounting department in the form of workshops and seminars to introduce them to the new international standards in accounting	25
S.A	.61066	4.3559	182	When evaluating the accounting curricula, this is not done by a job exchange and the participation of the Accounting Profession Board	26
م.ب		4.691			

Table (9) shows that there is a lack of accounting curricula and lack of consistency with developments in IAS and IFRS

#### **TEST THE HYPOTHESES OF THE STUDY AND DISCUSS THE RESULTS**

The first hypothesis: There are no statistically significant differences in the extent of knowledge of the impact of internal environmental factors on the application of international accounting standards depending on the variable of scientific and professional qualification.

**Table (10): Results of the analysis of the variance of the differences in the responses of the respondents according to qualification (BA, MA, PhD, professional fellowship) of the impact of internal environment factors on the application of international accounting standards**

Probability	F	Standard deviation	Mean	Number	Qualification	Phrase N.
.000	9.309	.20412	4.9583	24	BA	1
		.82756	4.3818	55	M.A.	
		.43108	4.7619	42	Ph.D.	
		.37329	4.8361	61	Professional Fellowship	
.239	1.417	.20412	4.9583	24	BA	2
		.38925	4.8182	55	M.A.	
		.43108	4.7619	42	Ph.D.	
		.37329	4.8361	61	Professional Fellowship	
.738	.421	.46431	4.7083	24	BA	3
		.59854	4.7091	55	M.A.	
		.62283	4.6190	42	Ph.D.	
		.76107	4.5902	61	Professional Fellowship	
.000	26.133	.20412	3.9583	24	BA	4
		.41682	3.2182	55	M.A.	
		.32777	3.1190	42	Ph.D.	
		.45986	3.2951	61	Professional Fellowship	
		.00000	5.0000	24	BA	5
		.00000	5.0000	55	M.A.	
		.00000	5.0000	42	Ph.D.	
		.00000	5.0000	61	Professional Fellowship	
.001	5.436	.46431	3.7083	24	BA	6
		.40784	3.9818	55	M.A.	
		.00000	4.0000	42	Ph.D.	
		.57450	3.7377	61	Professional Fellowship	
.738	.421	.46431	4.7083	24	BA	7
		.59854	4.7091	55	M.A.	
		.62283	4.6190	42	Ph.D.	
		.76107	4.5902	61	Professional Fellowship	
.738	.421	.46431	4.7083	24	BA	8
		.59854	4.7091	55	M.A.	
		.62283	4.6190	42	Ph.D.	
		.76107	4.5902	61	Professional Fellowship	
.738	.421	.46431	4.7083	24	BA	9
		.59854	4.7091	55	M.A.	
		.62283	4.6190	42	Ph.D.	
		.76107	4.5902	61	Professional Fellowship	

Of the table (10); note that there are no apparent differences in the arithmetic averages according to the scientific and professional qualifications of the respondents (bachelor, master, doctorate, professional fellowship) The results were used as shown by the statistical significance of (f) at the level of 0.001 for some of the questions, thus accepting the first hypothesis that there are no statistically significant differences in the extent of knowledge of

the effect of internal environmental factors on the application of international accounting standards Depending on the variable of scientific and professional qualification ..) The second hypothesis: There are no statistically significant differences in understanding the effect of non-compliance with the requirements of the external environment and the application of international accounting standards according to the variable of scientific and vocational qualification.

As for the second hypothesis, it has been proven by Table 11 of the results showing that there are no apparent differences in the arithmetic averages according to the scientific qualification of the respondents for each of the second hypothesis questions. To verify the significance of these differences, The statistical value of (q) at the level of 0.001 for most of the questions of this axis, thus accepting the second hypothesis that: (There are no statistically significant differences in understanding the impact of external environment requirements and applying international accounting standards according to the variable of scientific and professional qualification).

Table (11): Results of the analysis of the variance of the differences in the responses of the respondents according to qualification (BA, MA, PhD, professional fellowship) to the extent of recognizing the impact of external environment requirements and the application of international accounting standards,

Probability	f	Standard deviation	Mean	Number	Qualification	Phrase N.
<b>.823</b>	<b>.304</b>	<b>.00000</b>	<b>5.0000</b>	<b>24</b>	BA	<b>10</b>
		<b>.18892</b>	<b>4.9636</b>	<b>55</b>	M.A.	
		<b>.15430</b>	<b>4.9762</b>	<b>42</b>	Ph.D.	
		<b>.17956</b>	<b>4.9672</b>	<b>61</b>	Professional Fellowship	
<b>.001</b>	<b>5.848</b>	<b>.50898</b>	<b>4.5417</b>	<b>24</b>	BA	<b>11</b>
		<b>.29013</b>	<b>4.9091</b>	<b>55</b>	M.A.	
		<b>.35417</b>	<b>4.8571</b>	<b>42</b>	Ph.D.	
		<b>.37329</b>	<b>4.8361</b>	<b>61</b>	Professional Fellowship	
<b>.001</b>	<b>5.848</b>	<b>.50898</b>	<b>4.5417</b>	<b>24</b>	BA	<b>12</b>
		<b>.29013</b>	<b>4.9091</b>	<b>55</b>	M.A.	
		<b>.35417</b>	<b>4.8571</b>	<b>42</b>	Ph.D.	
		<b>.37329</b>	<b>4.8361</b>	<b>61</b>	Professional Fellowship	
<b>.001</b>	<b>5.848</b>	<b>.50898</b>	<b>4.5417</b>	<b>24</b>	BA	<b>13</b>
		<b>.29013</b>	<b>4.9091</b>	<b>55</b>	M.A.	
		<b>.35417</b>	<b>4.8571</b>	<b>42</b>	Ph.D.	
		<b>.37329</b>	<b>4.8361</b>	<b>61</b>	Professional Fellowship	
<b>.001</b>	<b>5.848</b>	<b>.50898</b>	<b>4.5417</b>	<b>24</b>	BA	<b>14</b>
		<b>.29013</b>	<b>4.9091</b>	<b>55</b>	M.A.	
		<b>.35417</b>	<b>4.8571</b>	<b>42</b>	Ph.D.	
		<b>.37329</b>	<b>4.8361</b>	<b>61</b>	Professional Fellowship	

The third hypothesis: There are no statistically significant differences in the extent of awareness of the importance of training accountants on the effective application of international accounting standards according to the variable of scientific and professional qualification

Table (12) shows that there are no apparent differences in the arithmetic averages according to the scientific and professional level of the respondents for each of the three hypothesis questions. To verify the significance of these differences, The third hypothesis, which states: "There are no statistically significant differences in the extent to which the importance of training accountants in the effective application of international accounting standards according to the variable of scientific and vocational qualification is accepted.

**Table (12) Results of the analysis of the variance of the significance of the differences of respondents' answers by qualification on the extent of recognizing the importance of training accountants in the effective application of international accounting standards according to the variable of scientific and professional qualifications**

Probability	f	Standard deviation	Mean	Number	Qualification	Phrase N.
.001	5.848	.50898	4.5417	24	BA	15
		.29013	4.9091	55	M.A.	
		.35417	4.8571	42	Ph.D.	
		.37329	4.8361	61	Professional Fellowship	
.043	2.777	.50898	4.4583	24	BA	16
		.45837	4.2909	55	M.A.	
		.50376	4.5476	42	Ph.D.	
		.47333	4.3279	61	Professional Fellowship	
.001	5.848	.50898	4.5417	24	BA	17
		.29013	4.9091	55	M.A.	
		.35417	4.8571	42	Ph.D.	
		.37329	4.8361	61	Professional Fellowship	
.001	5.848	.50898	4.5417	24	BA	18
		.29013	4.9091	55	M.A.	
		.35417	4.8571	42	Ph.D.	
		.37329	4.8361	61	Professional Fellowship	
.001	5.848	.50898	4.5417	24	BA	19
		.29013	4.9091	55	M.A.	
		.35417	4.8571	42	Ph.D.	
		.37329	4.8361	61	Professional Fellowship	

The fourth hypothesis: There are statistically significant differences in the fact that the failure to keep up with the accounting curricula in the institutions of higher education of modernity and development adversely affects the effective application of international accounting standards according to the variable of scientific and professional qualification.

Table (13) shows that there are no apparent differences in the arithmetic averages according to the scientific and professional level of the respondents for each of the four hypothesis questions. To verify the significance of these differences, the analysis of the mono-variance was used. The results showed the value of the statistical significance at the level of 0.00 0.001 The



fourth hypothesis, which states: "There are statistically significant differences in the fact that failure to keep up with the accounting curricula of higher education institutions of modernity and development adversely affects the effective application of international accounting standards according to the variable of scientific and professional qualifications."

**Table (13) Results of the analysis of the variance of the differences in the responses of the respondents according to the qualification on the lack of keeping up with the accounting curricula in the institutions of higher education of modernity and development adversely affect the effective application of international accounting standards according to the variable of scientific and professional qualification.**

Probability	f	Standard deviation	Mean	Number	Qualification	Phrase N.
.001	5.848	.50898	4.5417	24	BA	20
		.29013	4.9091	55	M.A.	
		.35417	4.8571	42	Ph.D.	
		.37329	4.8361	61	Professional Fellowship	
.001	5.848	.50898	4.5417	24	BA	21
		.29013	4.9091	55	M.A.	
		.35417	4.8571	42	Ph.D.	
		.37329	4.8361	61	Professional Fellowship	
.001	5.848	.50898	4.5417	24	BA	22
		.29013	4.9091	55	M.A.	
		.35417	4.8571	42	Ph.D.	
		.37329	4.8361	61	Professional Fellowship	
.001	5.848	.50898	4.5417	24	BA	23
		.29013	4.9091	55	M.A.	
		.35417	4.8571	42	Ph.D.	
		.37329	4.8361	61	Professional Fellowship	
.001	5.918	.38172	4.8242	24	BA	24
		.50898	4.4583	55	M.A.	
		.73260	4.3818	42	Ph.D.	
		.89131	4.2857	61	Professional Fellowship	
.001	5.848	.41291	4.7869	24	BA	25
		.50898	4.5417	55	M.A.	
		.29013	4.9091	42	Ph.D.	
		.35417	4.8571	61	Professional Fellowship	
.001	5.918	.37329	4.8361	24	BA	26
		.50898	4.4583	55	M.A.	
		.73260	4.3818	42	Ph.D.	
		.89131	4.2857	61	Professional Fellowship	

The field study concludes that:

The main obstacles facing the actual application of international accounting standards are the internal environmental constraints. Some of the challenges facing implementation based on previous studies, which were confirmed by the researchers through the field study, can be explained as follows:

1. weak mechanism to compel companies to apply the International Accounting Standards.

2. The weakness of the accounting curricula that are taught in institutions of higher education and lack of definition of students international standards.
3. Lack of qualified professional accountants.
4. Difficulty understanding and interpreting international standards.
5. weak training of staff on international standards on the pretext of lack of financial resources.
6. The auditors did not provide a real and effective report regarding the application of the standards by the establishments.
7. Lack of professional experience in the application of international standards.
8. Failure to rely on financial reports in decision-making negatively affects the response of companies to the application of international standards.
9. Lack of professional associations of accounting and lack of interest in the process of application.
10. High training costs.

## **CONCLUSIONS AND RECOMMENDATIONS**

### **First: Results:**

1. The factors of the internal environment have a direct impact on the application of IFRSs. These factors include several factors, the most important of which are administrative policies, the size of the company's business and capital, the prevailing culture, the amount of funding required for the transition process to implement international standards and readiness,
2. The failure to meet the requirements of the external environment greatly affects the application of international accounting standards. The most important of these requirements is the obligation to apply the standards as a condition of joining the International Federation of Accountants in accordance with the Membership Obligations (SMO's) Global, and global and regional markets.
3. The training of accountants helps to apply IFRSs
4. Failure to keep up with the accounting curricula of higher education institutions of modernity and development has a negative impact on the effective application of international accounting standards according to the variable of scientific and professional qualification.
5. The application of IFRSs contributes to improving the quality of accounting information and increasing confidence in the financial statements.
6. The implementation of IFRSs will contribute to stability in the Khartoum financial market by consolidating the presentation of the financial statements and the possibility of comparison with similar companies and enterprises.
7. The application of IFRSs contributes to improving the quality of accounting information and increasing confidence in the financial statements.

### **Second: Recommendations:**

1. The necessity of studying the variables of the factors of the internal environment and the study of all related aspects according to the proposal presented in this study to overcome the problems and obstacles in applying IFRS.
2. Review the financial reporting environment and its compatibility with international requirements.
3. Paying attention to the training of accountants on international financial reporting standards.
4. Conducting workshops and seminars on the implementation of international accounting standards with the involvement of all parties involved.

5. The need to review the curriculum of accounting education institutions of higher education through the recruitment of specialized committees of academics and professionals to reach an integrated accounting approach to meet all changes in the internal and external environment. contacts with higher education institutions that study the accounting approach and be informed of the standards adopted and the need to include them in the curricula.
6. The Accounting and Auditing Organization Board in Sudan should expand its

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# The Impact Of Environmental Turbulence On Organizational Learning

**Dan Kipley**

Azusa Pacific University

**Roxanne Helm-Stevens**

Azusa Pacific University

**Mitchell Lookinbee-Kipley**

Azusa Pacific University

## ABSTRACT

Organizational learning (OL) is an area of business study that is continually expanding and developing new methods for effectively responding to the dynamic and disruptive shifts that occur in the environment. Firms that are best able to envisage and interpret environmental shifts and then proactively position their organization through an effective system of OL will increase the probability of developing a source of competitive advantage. This advantage centers on the organizations ability to interpret the external data and apply this knowledge to the capabilities processes used by the organization. Through application of this knowledge, research has shown that enhanced organizational capabilities performance such as increasing the speed of fostering innovation, product/market creativity, knowledge application and transfer will occur, to name but a few, will occur. As a firm's organizational learning process is influenced by and in many cases rooted in their responsiveness to the environmental turbulence, a reasonable extension of logic would be that the environment turbulence has an effect on the efficacy of organizational learning. Properly designed and implemented organizational learning processes are key for organizations to assess the true level of environmental turbulence. Only by evaluating and responding to a properly assessed level of turbulence can the firm align their capabilities with their strategy. Therefore, in order to outperform the competitors, organizations will need to be more proactive in creating its "future by design" which requires more creative strategic "thinking" rather than "planning" in the rigid, traditional manner.

## INTRODUCTION

Research has proven that the implementation of effective organizational learning into the decision-making process leads to better organizational performance. Lopez, Peon, and Ordas (2005) found that with higher level of performance in strategic decision practices, organizational learning contributes a positive influence on business performance. Morgan and Turnell (2003) demonstrated that when organizations showed more favorable learning values that it improved their market information processing behaviors and analytical capabilities. Their research was further able to demonstrate that the improved information processing and analytical capabilities directly impacted the market-based outcomes the organization was able to generate. Although firms profoundly rely on external knowledge to nourish creativity and innovation for better organizational performance, it is still a critical challenge to make the best use of the external knowledge for an organization's future strategic development (Cassiman & Veugelers, 2006).

Defining learning as the process by which knowledge is refreshed, the study of Yang, Wang, and Niu (2007) revealed that although applying organizational learning can significantly influence corporate performance, only high-tech and financial firms have consistently applied

organizational learning processes throughout their organizations raising the question, why is it that service and manufacturing firms fall short of applying organizational learning.

### **Environmental Turbulence Defined**

Ansoff and McDonnell (1990), define environmental turbulence as the combined measurement of the changeability, instability, and predictability which is reflected in the complexity and novelty of change in the environment. Ganos (2012) noted that Ansoff divided the environment into two basic categories: stable and discontinuous. In stable environments, "decisions about the future are based on past and present events that can be extrapolated into the future" (p. 109). Change is understood as incremental, predictable, and visible. In discontinuous environments, "the future is partially visible and predictable; therefore, change is possible by using weak signals from the environment" (p.109). Whereas discontinuous environments are defined by, change events occurring more rapidly than the firm is able to respond and the change events are novel and more frequent.

How the firm evaluates and determines clarity and completeness of the change events determines, in part, the firms strategic decision-making process (Emery & Trist, 1965; Ansoff & McDonnell, 1990). Specifically, Emery and Trist (1965) noted that although the future change events could be invisible and completely unpredictable, organizations base change by evaluating and building upon scenarios utilizing weak environmental signals. The gathering of weak signals and the interpretation of such signals relies entirely on a well-developed organizational learning system.

### **Environment and Its Turbulence**

Ansoff (1972) defines the environment as "a set of elements and their relevant properties which elements are not parts of the system but a change in any of which can produce a change in the state of the system." Hence, the environment consists of "all variables which can affect its (the firm's) state". Duncan (1972) divides environment into internal and external components which are distinguished by the existences of the components inside or outside the organization. Duncan's position on the environment differs from Andrews (1971), Glueck (1980) and Miles (1980) who only focus on the external conditions and influences from the environment excluding the internal components.

The concept of turbulence was originally introduced in 1965 by Emery and Trist. They stated that the business environment is influenced by multiple component groups (competition, customers, suppliers, stockholders, general market, regulatory bodies, legislative bodies, technology, economy, and society) with different disruptive factors. Milliken (1987) defined environmental turbulence as the perceived inability of an organization to accurately and properly assess the influences presented by the external environment or the future changes caused by the external environment that may occur. Milliken's position is at odds with Ansoff as he presumes that the organization has limited options available to react to the changes in the turbulence level.

Kohli and Jaworski (1990) take a narrow position on turbulence, specifically identifying the causes of turbulence to market shifts, changing composition and preference of customers, and technological. Recommending that firms adjust their strategy based on the frequency and unpredictability of change in technology and/or market preferences.

Ansoff (1979) describes environmental turbulence is a function of changeability and predictability which in turn is the combination of changeability of the market environment, speed of change, intensity of competition, abundance of technology, discrimination by

customers, and pressures from governments and influence groups. To be specific, changeability represents the novelty and speed of change in the business environment, and predictability evaluates the clarity and the capability of the firm’s information dealing with changes for strategic decision-making.

Ansoff (1979) also developed the measurement of the environmental turbulence into five levels: repetitive, expanding, changing, discontinuous, and surprising levels (figure 1). Stating that when the environmental turbulence level shifts and becomes increasingly disruptive, firm’s that match their strategic aggressiveness and supportive capabilities to the increased level of turbulence, have a higher strategic performance level than firms who fail to align strategy/capabilities the increased turbulence level, referring to this alignment as the firm’s strategic posture.

Discontinuity	Complexity of the Environment	National Competitor w/ Economic Conditions	Plus	Global Regional Competitor w/ Technology effects	Plus	Global Competitor w/Social-Political effects
	Novelty of Change	No Change	Change is slow and incremental	Change occurs faster but still incremental	Change is discontinuous but an expected transition	Change is discontinuous but now completely unexpected
Unpredictability	Rapidity of Change	No Change	Change occurs slower than the firm can respond	Change occurs equal to the firms ability to respond	Change occurs more rapidly than the firm can respond	Change occurs catching the firm completely by surprise
	Visibility of Future Events	Complete visibility of future change events	Future change events are easy extrapolable	Future change events are predictable	Future change events become less predictable	Future change events are completely unpredictable
Instability	Frequency of Turbulence Level Shifts	No shifts due to no change	Low	Moderate	High	Multiple shifts per year
	Environmental Turbulence Level Scale					

**Figure 1**  
**Ansoff’s Levels of Turbulence**

How management responds to the environmental changes can be attributed to a number of factors such as organizational inertia, tradition, size, skills, management ambition, and capabilities of the organization.

Given this context, Ansoff and McDonnell (1990) caution between the perceived environment and the real environment. As such, it is critical for decision makers to recognize the differences between perceived and realize environmental turbulence. This distinction must be addressed between perception and reality in relation to organization capability, associated with factors such as culture, leadership, structure and resources (Thwaites & Glaister, 1992).

If the proper strategic decision is made, the management must ensure that the organization is configured in a manner that can support this decision. Thus, to optimize organizational performance, organizations need to carry out careful diagnosis and analysis of the environment in order to assess the levels of turbulence and then chose one appropriate mode of strategic behavior accordingly (Thwaites & Glaister, 1992).

### Organizational Learning and Its Nature

Organizational learning is often described as the result of knowledge acquisition, information distribution, information interpretation, and organizational memory. However, this simplified

model is not able to explain the complexity of what organizational learning really is (Huber, 1991). History is replete with examples of researchers trying to assess and apply organizational learning by different approaches, concepts, and aspects; consequently, there have been various theories with different perspectives of organizational learning provided in literature.

In order to keep focus of this discussion, those arguable definitions of organizational learning proposed by researchers with different perspectives will not be comprehensively mentioned but only discussed in its dynamic nature specifically. Therefore, in this section, the characteristics of its nature will be brought to discuss.

There are several dimensions of the nature regarding organizational learning being discussed over time, such as if organizational learning involves multilevel framework. Multi-level framework includes all individuals, groups, and organizational level, the effects of which transfer from one level to others relating to cognition, insight, and innovation (Nonaka & Tekeuchi, 1995; Simon, 1991). From a strategic perspective, it is obvious that this learning transference when exactly shared, executed, developed, and institutionalized throughout the levels of the organization create advantages benefitting the organization's future competitive position (Crossan, et al., 1999, Argyris & Schon, 1996; Daft & Weick, 1984; Hedberg, 1981).

There are four learning processes and three different levels identified in organizational learning (figure 2). In the individual level, there are processes of intuiting and interpreting; in group level, there is a process of integrating; in the organization level, there is a process of institutionalizing (Crossan, et al., 1999). The four learning processes overlies the three levels and naturally flow and link from one into another. Intuiting is the recognition of the pattern and possibilities inherent in a personal stream of experience, and interpreting is explaining of an insight or idea from one to another through words or behavior. Integrating is the process of developing shared understanding among individuals and the process of taking coordinated action through mutual adjustment, and institutionalizing is the process of ensuring routines and actions accordingly within organizations.

Individual	Process	Inputs/Outcomes
Individual	Intuiting	Experiences Images Metaphors
	Interpreting	Language Cognitive map Conversation/dialog
Group	Integrating	Shared understandings Mutual adjustment Interactive systems
Organization	Institutionalizing	Routines Diagnostic systems Rules and procedures

**Figure 2**  
**Crossan's Learning and Renewal in Organizations**

Organizational learning can be seen as one of the means of achieving the strategic renewal of an enterprise. March (1991) indicated that renewal requires the organization explore and learn new ways while simultaneously applying what they have already learned; therefore, strategic renewal should focus on the entire organization that operates in an open system rather than having a single internal focus (Duncan & Weiss, 1979). Based on March's suggestion, organizations should carefully manage the tension between exploration and

exploitation by “maintaining an appropriate balance” due to they are both critical and essential for organizations’ development but at the same time they “compete for scarce resources”.

Recently, researchers found that the benefits and outcomes from learning strongly depend on the intensity of the environmental turbulence, for example, when the environment tends to be more stable, the outcome of organizational learning is likely to be more effective (Levinthal & March, 1993; Jansen, et al., 2006). Boyne and Meier (2009) also found that organizations in turbulent environments find it more difficult to perform well, noting “turbulence is bad for performance so steps should be taken to avoid it or minimize its effects” (p. 820). Still, Baba, Mahmood and Halipah (2017) found that organizational learning occurs at any level of environmental turbulence and has a positive effect on the organization’s ability to innovate. Hannan and Freeman (1977) found that the benefits of stability may be, in part, contingent on whether the organization operates within a generalist or specialist category.

In their equilibrium model of positioning, Ander, Ruiz-Aliseda, and Zemsky (2016) examined firm positioning within an industry. Defining a specialist as a “cost leader” targeting the low-end segment and a “differentiator” targeting the high-end segment” (p. 184), their specialist classification corresponds to Porter’s Generic Competitive Strategy model. Ander, Ruiz-Aliseda, and Zemsky (2016) characterize generalists as “able to target both segments and “hence have greater ability to exploit economies of scale” (p.184). Hannan and Freeman proposed that “faced with unstable environments, organizations ought to develop a generalist structure that is not optimally adapted to any single environmental configuration but is optimal over an entire set of configurations” (p. 946).

### **Cognition Affects Action**

The relationship between cognition and action is critical to organizational learning process because understanding leads to actions, and action also informs understanding simultaneously (Seely-Brown & Duguid, 1991), and this is the major difference between knowledge management and intellectual capital. This characteristic is also in relation to double-looping learning, which is the fundamental element of organizational learning.

By reviewing the nature of organizational learning, it is very obvious that organizational learning is actually a dynamic process. It occurs over time and cross-levels, and it also creates a tension between absorbing new learning and exploiting what has already been learned over time; it involves different levels and affects one to another when interacting, and its cognition process leads to action as well as the experience of action supports possible new cognition. Therefore, learning has been institutionalized and impacted among individual, group and organizational learning process, and with those characteristics in its nature, organizational learning becomes a constantly adaptive process so as to cope with the changing environment by enforcing organizations being able to sense changes proactively and to adapt accordingly.

### **The Impact of High Environmental Turbulence on Organizational Learning**

Levinthal & March, 1993; Jansen, et al., 2006 posit that when the environment tends to be stable the outcome of organizational learning is likely to be more effective in return. Hanvanich et al. (2006) also implied that, if industries are segmented into different levels, relatively stable industries should be better able to establish long-term structures and process of organizational learning due to benefit from accumulated knowledge over time, and in comparably dynamic industries, instead of focusing on accumulated knowledge, a short-term, more profitable strategy would be to acquire skills and required resources that are both timely and adaptable in response to new changes.



However, their position is disputed by other researchers whose research proves that high levels of environmental turbulence does positively influence organizational learning. Freeman and Perez (1988) described that the disruptive changes in technologies cause considerable heightened environmental turbulence for firms and when faced with these shifts, they will positively respond to those disruptive changes. Elisenhardt and Martin (2000) also addressed the importance of the environment in analyzing the effect of capabilities in organizational learning because different degrees of turbulent environments imply different valuations of dynamic capabilities. Srivastava and Frankwick (2011) found that the degree of environmental turbulence affects the way organizational learning takes place including the focus in attitude, intent, and receptivity toward OL by top management.

Further, empirical research conducted by Ansoff and Sullivan (1993) state that firms with an advance OL will continue to monitor the environment for signs of demand saturation, technology substitution, structural changes in consumer demand, social and political discontinuities, and assess the future inherent profitability and growth in their historical markets.

As such, organizational learning can be seen as the proactive response to the need to adjust for the greater uncertainty presented by the increased level of turbulence and has been responsible for the changing strategic direction in order to occupy a more competitive position (Pavitt, 1991; Dodgson, 1991).

### **DISCUSSIONS**

From the previous sections discussing organizational learning and environmental turbulence it can be concluded that they share one thing in common; both are dynamic by nature. Organizational learning is the dynamic process that is constantly adaptive to environmental changes based on the need for organizational growth which is stimulated by creating new or incrementally improved competitive advantages. Environment turbulence is dynamic by its combined measure of changeability, instability, and unpredictability and has a profound influence on the strategic decisions of an organization.

As such, the interaction between the two variables warrants a discussion. OL's focus is to exploit to the advantage of the organization, the data acquired from both the external environment and considering the internal capabilities of the firm. This transference is accomplished through interpreting, integrating, and institutionalizing, hence organizational learning. Ansoff refers to this process generally as Contingency theory, based on previous research by W. Ross Ashby (1957), which states that 'to successfully manage the output of a system, the number of control mechanisms required will correspond to the number of elements in that system'.

The rationale of Ansoff forms a foundation for deliberately responding to changing environments in different situations according to the organizations' capability and strategy, and by extension, what it has learned.

### **CONCLUSIONS**

At the most basic level, firms chose between the competitive strategy of specializing their activities to serve specific market segments or broadening to become generalists that serve multiple market segments (Hannan & Freeman, 1993). The impact of environmental turbulence on organizational learning will add a new dimension to the classic debate regarding the relative attractiveness of generalist versus specialist strategies. Yet, irrespective of how a firm chooses to position itself within an industry, organizations will certainly need to focus on

the interaction between changing environments and their ability to learn.

Properly designed and implemented organizational learning processes are key for organizations to assess the true level of environmental turbulence. Only by evaluating and responding to a properly assessed situation can the firm align their capabilities with their strategy. Therefore, in order to outperform the competitors, organizations certainly will need to be more proactive to create the “future by design” which requires more creative strategic “thinking” rather than “planning” in the rigid, traditional manner (McKenna, 1999; Stacey 1996).

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## Capital Structure And Corporate Financial Performance: Evidence From Nigerian Cement Companies

**Prof. M O. Ogbulu**

Department of Banking & Finance, Abia State University,  
Uturu, Nigeria

**Sunday Ukeje Okanta Ph.D**

Department of Banking & Finance, Abia State University,  
Uturu, Nigeria

**Morrison J. Turakpe**

Department of Banking & Finance, Ken Saro-Wiwa Polytechnic, Bori,  
Rivers State, Nigeria

### ABSTRACT

This study seeks to examine the impact of capital structure on corporate financial performance of four cement companies in Nigeria for the period 2006 – 2015. Data selected as proxies for the financial performance of the firms, which included return on asset (ROA), return on equity (ROE), and return on sales (ROS) were generated from the firm's audited annual financial reports. Data on total debt/asset ratio (TDA), long-term debt/asset ratio (LDA), and equity/asset ratio (EQA) were selected as proxies for capital structure of the firms. Also, data on asset-turnover ratio (ATO) (measurement for asset utilization), total asset (TAST) and total sale (TSAL) – measurements for firm size, were selected as control variables. The parameters of the above variables were estimated using Autoregressive Distributed Lag (ARDL) method. The result of the study revealed that all the capital structure variables (TAD, LDA and EQA) have mixed impact on financial performance indicators (ROA, ROE and ROS) used in the study. While there existed positive relationships between the control variables of ATO, TAST and performance, TSAL negatively related to financial performance measures. Following from the findings of the study, corporate decision makers in Nigerian cement industry should be careful in the use of debts. While it is necessary to use debt as a source of finance, such a decision should be a last option as supported by the Pecking order theory. Rather, retained earnings should be preferred.

**Key Words:** Capital Structure, Corporate Financial Performance, Cement Companies, Return on Assets, Return on Equity, Return on Sales

### INTRODUCTION

#### Background of the Study

Corporate financing decision, one of the four major corporate finance decisions (others include investment, dividend and liquidity decisions), are quite complex processes. Theories in corporate finance may only have explained certain facets of the diversity and complexity of financing choices. Researches over the years have given no accepted conclusion on the exact determinants and relationship between capital structure and firm performance in either developed or emerging economies. Graham and Harvey (2001) argued that, although a lot of studies have been done in investigating capital structure of the firms, the results obtained are still unclear. This, according to them, might be due to wrong measurement of key variables, investigation on wrong models or issues, misspecification of managerial decision process or unresponsiveness of owner-managers. Capital structure is very important for firms because it has an impact on long-term corporate profits, firm's valuation and capital budgeting decisions

(Aurangzeb and Hag, 2012). It represents the firm's financial framework which consists of the debt and equity used to finance the firm. Decisions regarding types of capital structure of a firm should play a critical role since capital impacts on profitability and solvency.

An optimum capital structure which gives maximum returns to shareholders plays an important role in the growth and progress of any company. As in Singh and Singh (2016), Solomon and Weston (1973) posit that the proper and right combination of debt and equity will always lead to a market value enhancement. In making capital structure decisions managers should consider the significant difference between the industry and the individual companies within an industry. Two similar companies can have different capital structures as per the different judgement of decision makers with the significance of various factors.

Capital structure is the combination of debt and equity that finance the firm's strategic plan. Gitman (2009) emphasizes that capital structure policy is a policy concerning the optimal combination of the use of external and internal sources of funds to finance an investment and also to support the company's operations in an effort to increase its profits and achieve a higher value. It is important to have optimal combination of funds from internal and external sources in the firm's capital structure to avoid a highly leveraged firm, with maximum debt source of finance in its capital structure which results in the firm finding its freedom of action restricted by its creditors and may have its profitability affected with the payment of higher interest costs.

The problem that financial managers are faced with in capital structure decisions is that there is yet no clear cut guideline that can be consulted when taking decisions regarding optimal capital structure. An optimal capital structure enhances the competency of the firm and impacts higher returns to shareholders compared to the return provided by an all equity firm. Akinsurile (2008) argues that most financial managers make capital structure decisions not necessarily out of empirically verified evidence. Myers (2001) asserts that large number of business failures in the past have been due to the inability of the financial managers to correctly identify and take advantage of the economical sources of financing for their firms based on empirically verified information.

Various theories in business finance on capital structure, starting with the Modigliani and Miller (1958) theorem (commonly referred to as M & M Theorem), have generated considerable debates due to their inherent controversies, making the issue to be more complex. Modigliani and Miller in their "theory of irrelevance" had hypothesized that in a world of frictionless capital market; there would be no optimal financial structure. In M&M's over-simplified world, no capital structure mix is better than the other.

Studies on capital structure are mostly carried out in developed countries. Only few studies have been conducted in developing countries including Nigeria. The cement industry in Nigeria is an important sector that is yet to be given special importance in the capital structure study. Few studies on the cement industry in Nigeria used variables like long-term debt and short-term debt to find the relationship between capital structure and profitability (profitability as proxy by return on equity and return on assets). In this study, an attempt is made to find the impact of capital structure on corporate profitability by adding new variables like return on sales, total debt to total fund, and equity to total fund ratios.

### **Statement of the Problem**

Various studies over the years have not agreed on the extent of the impact of capital structure on the financial performance of firms in either developed or developing economies. Myers

(2001) and Abor (2005) have noted that the inability of the financial managers to painstakingly evaluate and take advantage of economical resources of financing for their firms based on empirically verified information and the effect of such resources of financing on the profitability of their firms, had led to the failure of many organisation in the past. This discovery may have led to another study by Jensen and Meckhing (2011) which posited that the criteria some financial managers use in practice to make capital structure decisions are not based on empirically- proven principles; rather they use impressive rules of thumbs for identifying sources of financing, resulting to distress and collapse of such firms in the long run.

Capital structure theories, such as trade-off, pecking order and agency cost theories have been developed to explain capital structure, but the problem of optimal capital structure is still one of the central problems of corporate finance and has attracted much attention as a research fertile area (Noulas and Genimakis, 2011 and Olayinka, 2011). For these many years researchers have studied the impact of capital structure on firm's performance, they still cannot agree on the extent of the impact. In some countries like Nigeria, investors and stakeholders do not look in detail the effect of capital structure in measuring their firm's performance as they may assume that attributions of capital structure are not related to their firm's value (San and Heng, 2011). In Nigeria, the cement industry presents a veritable ground for us to look at their capital structures and the impacts on their corporate performances. This emanates from the fact that the industry has maintained sustainability in business over the years despite the economic woes that continued to face the country.

Although there are existing theoretical frameworks from finance and strategic management set out to explain the determinants of capital structure and the impact of capital structure on firm financial performance, there is still no agreement among economists and other researchers in finance as to which of the existing theories present the best description of the actual behaviour of firms. With the mixed and conflicting results from various studies, the quest for examining the relationship between capital structure and firm performance has remained a 'puzzle' and empirical study continues.

### **Objectives of the Study**

This study is intended to contribute to the on-going debate on the subject matter of capital structure and corporate financial performance. Specifically, the objectives are:

- To find out if there is a positive relationship between capital structure and financial performance of cement companies in Nigeria.
- To examine the theoretical/conceptual issues in firm capital structure mix with particular reference to cement industry in a developing country.

### **Research Hypothesis**

The following hypotheses are stated to direct the study.

- There is a positive relationship between total debt and financial performance of cement companies in Nigeria.
- There is a positive relationship between long-term debt and financial performance of cement companies in Nigeria.
- There is a positive relationship between equity and financial performance of cement companies in Nigeria.

### **Significance of the Study**

This study will be of significance to stakeholders - investors, supplies, management and shareholders - in the cement industry . It will be of significance to owners of cement companies

in the design of optimum capital structures, to suppliers in assessing the credibility of the firms, to shareholders in assessing the firms' financial risks, to the management in taking financial decisions, and to the investors in investing in leveraged firms. The study can guide policy makers in the cement industry in Nigeria in the formulation of appropriate policies that will enhance the growth of the industry.

### **Organization of the study**

Following section one (introduction) the rest of the study is structured as follows: Section two briefly reviews related literature of the study. The section sets out the theories and empirics on the relationship between capital structure and financial performance of corporate organisations; section three discusses the research methodology including model specification, while section four focuses on data presentation, analysis and discussion of empirical results. Lastly, section five concludes the study with recommendations and remarks and acknowledgement.

## **LITERATURE REVIEW**

### **Conceptual Framework**

Capital structure refers to the way a firm finances its overall operations and growth by using different sources of funds composed of long-term debt, specific short-term debt and equity. A firm's capital structure in reality is the composition of its liabilities. The choice of a firm's capital structure is an important decision to make not only from a returns maximization point of view, but also because this decision has a great impact on a firm's ability to successfully operate in a competitive environment (Shamshur, 2012). The different cost of each component of capital structure to a firm makes its decision to be critical because it may affect the firm's value. The purpose of managing capital structure is to mix the financial resources in order to maximize the wealth of shareholders and minimize the company's cost of capital (Ross et al, 2005). Making a wrong mix of finances employed in the firm might seriously affect the performance and survival of the business enterprise. It is therefore imperative that a company should plan an optimum capital structure to ensure the balance between risk and return in order to maximize the stock price.

A performance measure of an organisation is a controversial issue in finance due to its multidimensional nature. Such measures like profit maximization, maximization of sales and maximization of shareholders' benefit are at the core of the firm's effectiveness (Murphy et al, 1996 and Chakronvarthy 1986). Hoffer and Sandberg (1987) establish that operational performance measures, such as growth in sales and growth in market share, provide a broad definition of performance as they focus on factors that ultimately lead to financial performance. In literature, the most commonly used financial performance measures/proxies are return on assets, return on equity, or return on investment (Cole and Lin, 2000). The determination of an optimum capital in practice is a formidable task, and it goes beyond theory. The questions researchers are still trying to find answers to include whether the firm should go for debt or equity finance at the time of requirement and how much debt and equity the company should take? Does timing the markets for raising capital play an important role or not? The capital structure decision is a continuous process and any change in its pattern affects the debt-equity mix, which in turn influences the cost of capital and consequently, affects the value of the firm.

### **Theoretical Framework**

The composition of capital structure depends on several external and internal factors, like the line of business, economic conditions, and the firm's strategy. Firms with low credit rating tend to have a multi-tied capital structure consisting of different types of debts, while higher rated

firms use fewer layers (Rauth and Sfulz, 2010). The theory of capital structure was first developed by Modigliani and Miller (1958). M&M Theory assumes that the market is perfect and everyone in the market has perfect information, and no one individual (or company) can influence the price; there is a single rate of interest for borrowing and lending; there are no homogeneous products; there exist investors who are rational; and there is no personal or corporate taxation. These assumptions have generated more researches by scholars since M & M theory predicted 100% debt financing (due to substantial corporate tax benefit), which is not observed in practice.

M&M theoretical proposition carries the implications that: (1) financing and investment policies are independent, (2) internal and external financing are perfect substitutes; and (3) the specific type of the financing contractual arrangement, either equity or debt, is also irrelevant (Marques and Santos, 2003). Later, Modigliani and Miller (1963) published a correction of their article due to an error found in the "discussion of the effects of the present method of taxing corporations on the valuation of firms". When tax was introduced into their model, it was found that the value of a firm increases with more debt due to the tax shield. The tax advantage of debt financing was therefore proven to be greater than expected in Modigliani and Miller (1958). M&M (1958), based on their assumptions, had argued that the capital market is perfect and that debt and equity are perfect substitutes of each other. The implication of their position is that in this perfect market, financial decisions are irrelevant and there is no financial leverage. This means that the way organisations are financed is irrelevant.

According to Kraus and Litzenberger (1973), the perfect capital market does not exist in the real world, which makes the choice to finance with debt or equity important for organisations. Practically, this implied that the value of an organisation varies with changes in their capital structure and that the imperfections in the capital market influence the financing decisions.

The trade-off theory, the pecking order theory and the agency cost theory show that the classical theory of Modigliani and Miller (1958) is unrealistic. These theories show that debt and equity are no perfect substitutes of each other, as Modigliani and Miller (1958) stated and that the decisions of the capital structure are important for organisations (Hillier, et al, 2010).

The trade-off theory of capital structure states that an organisation's capital is constituted by both debt and equity and that their ratio (debt-equity ratio) is a trade-off between its interest tax shields and the costs of financial distress. The theory states that there is an advantage of financing through debts due to tax benefit of the debts. However, some costs such as debt costs, bankrupt costs and non-bankrupt costs do arise. The tax benefit, among other factors, makes the after-tax cost of debt lower and hence the weighted average cost of capital (WACC) will also be lower (Anarfor, 2015). Brigham and Gapenski (1996) argue that an optimal capital structure can be if there exists tax benefit which is equal to bankruptcy cost. According to the theory, the idea is that as the debt-equity (D/E) ratio increases then there is a trade-off between bankruptcy and tax shield and this as a result, causes an optimal capital structure for the firm. Despite the theoretical appeal of debt financing, researchers of capital structure have not found the optimal capital structure (Simerly & Li, 2000).

The pecking-order theory of capital structure developed by Myers (1984) and Myers and Majluf (1984) is of the essence that firm will adhere to the hierarchy of financing by preferring to finance itself from internally generated funds, because the use of such funds does not send any negative signal that may lower the stock price of the firm. When internal finances are depleted, it will opt for equity (Anarfor, 2015). The assumption of this theory is that firms will



always follow the hierarchy of financing through internal funds and finally as a last resort, finance through equity which may not be true in practice. Myers and Majluf further postulate that firms that make high profits tend to attain low debt profile because when firms are more profitable their first priority is to generate financing through retained earnings since they maximize the value of the existing shareholders. The pecking-order theory suggests that organisations well understand their financial resources and give priority according to their existing working situation (Aurangzeh and Haq, 2012). The theory is a competing theory of capital structure that says that firms prefer internal financing.

Another theory which gives explanation to how organisations select their capital structure is the Agency Theory by Jensen and Meckling (1976). According to these authors, managers (the agents) do not always pursue shareholders' interest (the principals). They suggest that firms should either increase the ownership of the managers in the firm in order to align the interest of managers with that of the owners or increase the use of debt which will reduce the equity base and thus increase the percentage of equity owned by managers. Boodhood (2009) posits that the advantage of agency cost theory is that leverage firms are better for shareholders as debt can be used to monitor managerial behaviour. A control mechanism which can be used to checkmate the managers' excesses to pursue the firm's overall goals, according to Chechet and Olayiwola (2014), is the introduction of more leverage in financing the firm. Chechet and Olayiwola assert that from the postulation of the agency cost theory, if more debt is employed, the threat of liquidation, debt servicing, which may eventually result to loss of jobs to the managers, will result to cost reduction thereby leading to efficiency and subsequently enhancing firm and managerial performance.

### **Empirical Literature**

Numerous studies have been conducted on the impact of capital structure on firms' financial performance using empirical test to explain how firms chose between debt and equity and their relative proportion in firm financing. As established and cited in Anarfo (2015), some studies have concluded that the relationship between capital structure and firm performance is both positive and negative; others concluded that the relationship is negative. Yet, other studies have documented a positive relationship. These mixed and conflicting results of capital structure and firm performance is Myer's (1993) argument that it is a PUZZLE and mirrored by Stiglitz and Weiss (1981) as a DILEMMA.

Ogbulu and Emeni (2012) studied the capital structure and firm value of 124 companies quoted on the Nigerian Stock Exchange (NSE) for the year ended 31<sup>st</sup> December, 2007 using OLS method of regression to analyse the data. The result of the study reveals that equity capital as a component of capital structure is irrelevant to the value of a firm, while long-term debt was found to be the major determinant of firm value.

Onaolapo and Kajola (2010) examine the impact of capital structure on firm's financial performance using sample of thirty non-financial firms listed on the Nigerian Stock Exchange during the period, 2001-2007. OLS method of estimation was used to analyse the panel data which were generated. The result of the study shows that a firm's capital structure surrogated by debt ratio has a significantly negative impact on the firm's financial measures, proxy by Return on Asset and Return on Equity.

The result of an investigation of the effect of capital structure on the performance of conglomerate firms quoted on the Nigerian Stock Exchange from 2011-2015, by Ubesie (2016) indicates that capital structure has effect on the dependent variables proxy by ROE and EPS of the conglomerates. The study used descriptive statistics and pooled ordinary least square

(POLS) regression analytical method of data analysis. Mutalib (2010) examines the determinants of capital structure in Nigerian cement industry for the period 2000-2009 using time series data of four listed cement firms. The ordinary least square method of analysis was used to analyse the effect of eight exogenous variables (tangibility of assets, firm size, growth, profitability, earnings volatility, age of firm, liquidity and current year leverage value) on capital structure. The result of the study shows that profitability, size of the firm, liquidity and lag of leverage are negatively significantly related to leverage whereas potential of growth, age of the firm tangibility are positively significantly related with the leverage ratio. The prediction of pecking-order theory was proved in the case of profitability where as earnings volatility fails to confirm the trade-off theory.

Babalola (2014) studied 31 manufacturing firm listed in Nigeria using their audited financial statements for the period 1999-2013 from static trade-off point of view. The study used the triangulation analysis and the result reveals that capital structure is a trade-off between the costs and benefits of debt. The research by Agha (2015) on capital structure determinants and their relationships on listed firms of Pakistan cement industry for the period 2008-2013 using panel least square method of regression analysis shows that the independent variables including liquidity, profitability and cost of debt have a significant impact and negatively related with debt ratio, implying that if the variables increase, debt ratio will decrease. The study also reveals that tax and growth variables have significant impact and a positive relationship, implying that if these variables increase debt ratio will decrease. Three other variables used in the study (size, tangibility and dividend) have no significant impact on debt ratio, meaning that there would be no impact of any change occurring in these variables on debt ratio.

Anarfo (2016) examines the relationship between capital structure and bank performance in sub-Saharan Africa for the period 2000-2006. The study employed the use of panel data techniques to analyse the relationship between capital structure and bank performance proxy by ROA, ROE and NIM. Total debt ratio was the proxy for capital structure. The results from the unit root tests show that all the variables were stationary in levels. The results further indicate that capital structure of banks in Sub-Saharan Africa is statistically insignificant, implying that capital structure does not have much impact on bank performance, that is, the bank's performance does not depend on its capital structure, rather it is capital structure that depends on a bank's performance. It was also found that size is an important determinant of total debt ratio and asset tangibility is an important determinant of bank performance but does not carry the expected signs in the ROA and ROE. Tax rate and inflation were found to be significant in determining only the NIM; however, growth rate of banks, size and the GDP growth rate are not significant in determining banks performance in Sub-Saharan Africa.

Khanam, Nasreen and Pirzada (2014) examined the impact of capital structure on firm's financial performance of the food sector of Pakistan from 2017 - 2012. Four independent variables (debt-equity ratio, debt to total assets ratio, short-term debt to total assets ratio and long-term debt to total assets ratio) were studied. Using linear regression to analyse secondary data obtained from published audited annual financial reports of sample cement firms, the results indicate that capital structure has significant negative impact on return on equity (ROE), net profit margin (NPM), return on capital employed (ROCE) and return on assets (ROA). The impact on earnings per share (EPS) was insignificantly negative.

Tifow and Sayilir (2015) evaluate the relationship between capital structure and firm performance using a sample of 130 manufacturing firms listed on Borsa Istanbul Stock

Exchange from 2008-2013. Short-term debt to total assets and long-term debt to total assets were used as proxies of financial leverage. ROE, ROA, Earnings Per Share and Tobin's Q ratio were used for performance, while sales growth and firm size were used as control variables. Findings of the study show that short-term debt (STDA) has a significant negative relationship with ROE, EPS and Tobin's Q ratio, while long-term debt (LTDA) has a significant negative relationship with ROE, EPS and Tobin's Q ratio but positively and significantly correlated with ROA.

Frank et al (2002) analysed the outcome of the researches conducted in different countries having different lawful environment. Their analysis shows that capital structure determinants are more or less comparable across America and European countries. However, this is not 100% similar and some differences are also found across Dutch, French and English countries due to their different legal environment. But debt and equity planning or strategies are almost more or less the same between Dutch and French countries with different lawful system. The result of the research by Ebaid (2009) indicates that capital structure has weak-to-no influence of the financial performance of listed firms in Egypt. By using three accounting-based measurements of financial performance which are Return on Asset (ROA), Return on Equity (ROE), and Gross Margin (GM), the result of the empirical tests shows that capital structure (particularly short-term debt and total debt) has negative impact on organisation's financial performance measured by ROE and GM. The study of seven European countries by Weill (2007) to find the relationship between capital structure and firm performance shows that in Spain and Italy, the relationship is significant and positive while it is negative in Germany, France, Belgium and Norway but insignificant in Portugal. Campello (2006) argues that firms with moderate level of long term debt, as in market, will face an increase in sales, but firms with higher levels of debt standard will not have significant growth in sales or in market.

## RESEARCH METHODOLOGY

### Data Collection

To achieve the objective of the study, data was collected from the secondary source by going through various web sites and audited annual financial reports, specifically, Income Statement and Statement of Financial Position (reported in accordance with IFRS and GAAP) of selected cement companies in Nigeria for the period 2006 – 2015. The companies studied comprise four cement companies whose audited annual financial reports for the period of study were available. They are Lafarge WAPCO Cement, Cement Company of Northern Nigeria (CCNN), Ashaka Cement, and Dangote Cement Plc. The data for the study is presented in fig. 3.1 below:

**Table 3.1 Nigeria: Data from audited annual financial reports of cement companies, 2006-2015, in %**

Company	Year	ROE	ROA	ROS	TDA	LDA	EQA	ATO	TAST	TSAL
WAPCO	2006	50.82	15.01	32.84	38.10	10.52	46.91	5.61	17.53	17.49
	2007	35.28	20.52	29.95	41.52	8.91	51.80	6.29	17.80	17.47
	2008	29.10	19.61	28.03	34.50	5.20	65.50	7.01	17.94	17.58
	2009	18.94	9.50	18.20	49.89	37.61	50.15	5.03	18.28	17.64
	2010	17.05	6.95	18.72	59.24	10.23	40.76	3.70	18.59	17.60
	2011	15.24	5.64	13.83	63.19	42.08	36.81	4.08	18.84	17.95
	2012	2.11	9.21	16.09	54.98	34.12	44.74	5.74	18.84	18.28
	2013	3.02	17.52	28.84	42.05	17.45	57.94	6.08	18.89	18.39
	2014	10.25	8.14	26.67	19.48	8.85	80.52	3.08	19.66	18.48
2015	9.80	7.8	20.69	20.64	7.53	77.49	3.0	19.76	18.56	
CCNN	2006	28.66	21.58	11.97	36.0	14.51	43.81	82.42	22.33	22.49
	2007	24.28	20.33	12.61	38.21	17.32	49.22	98.61	22.69	22.57
	2008	29.67	18.65	18.52	44.10	12.53	56.80	96.55	22.28	22.69
	2009	34.60	25.10	21.51	43.26	18.11	54.32	112.10	22.53	23.21
	2010	36.50	21.16	15.96	45.16	15.12	59.21	106.52	23.16	23.66
	2011	47.03	26.17	23.47	44.28	14.33	55.19	110.74	23.25	23.36
	2012	21.60	11.59	11.26	46.36	10.52	53.65	106.25	23.38	23.44
	2013	21.74	13.08	12.48	39.82	11.71	60.16	104.80	23.44	23.48
	2014	20.30	12.16	12.70	40.14	18.0	59.89	95.82	23.48	23.44
2015	11.84	7.0	9.21	40.84	16.26	59.13	76.03	23.57	23.29	
DANGOTE	2006	20.68	16.72	30.16	37.81	16.74	59.72	46.80	19.10	17.58
	2007	20.01	18.52	33.59	36.52	14.88	60.32	48.32	19.29	17.36
	2008	24.77	20.24	29.01	38.81	13.65	58.72	47.72	19.63	17.94
	2009	33.24	21.52	36.40	43.16	14.55	63.66	50.21	19.54	18.68
	2010	50.40	23.60	53.0	44.17	18.62	63.21	46.88	19.81	19.13
	2011	38.46	21.08	45.76	43.90	22.71	54.58	46.0	20.08	19.30
	2012	35.44	23.40	51.05	33.97	14.02	66.03	45.67	20.25	19.47
	2013	36.71	25.63	56.61	30.37	12.08	69.76	45.37	20.53	19.73
	2014	29.11	19.29	51.35	33.75	12.36	66.25	38.53	20.68	19.74
2015	28.47	18.96	53.85	33.45	20.91	66.55	34.61	20.84	19.78	
ASHAKA	2006	29.70	18.28	20.14	31.11	5.23	62.89	90.78	17.11	15.98
	2007	18.32	7.13	13.33	36.10	8.44	69.81	88.20	17.81	15.71
	2008	19.24	6.05	14.61	35.52	16.31	76.70	86.75	17.68	15.56
	2009	12.95	5.89	13.22	34.26	17.12	73.32	63.71	18.21	15.91
	2010	10.71	6.32	14.81	36.21	15.69	83.60	49.31	18.15	16.62
	2011	6.17	5.33	13.94	34.0	14.16	85.85	38.71	17.81	16.85
	2012	6.31	5.41	14.22	30.85	14.21	85.78	37.83	17.87	16.90
	2013	5.99	4.72	13.01	34.0	20.94	78.89	36.35	17.90	16.89
	2014	8.91	7.26	21.63	32.02	19.01	81.04	33.28	17.96	16.87
2015	5.21	3.93	16.15	24.72	14.15	75.40	24.75	18.07	16.67	

**Source: Computed from audited annual financial reports of studied cement companies, 2006 - 2015**

### Variables of the Study

The study used three types of variables. These are financial performance as dependent variable measured by Return on Equity (ROE), Return on Asset (ROA) and Return on Sales (ROS). Capital structure as independent variable is measured by Total debt/Assets (TDA), Long-term debt/Assets (LDA) and Equity/Assets (EQA). The control variables which also affect firm financial performance are Asset utilization measured as Assets-Turnover ratio (ATO) and the size of the firm measured as logTotal Assets (TAST) and logTotal sales (TSAL).

The table below shows the details of variables used in the study.

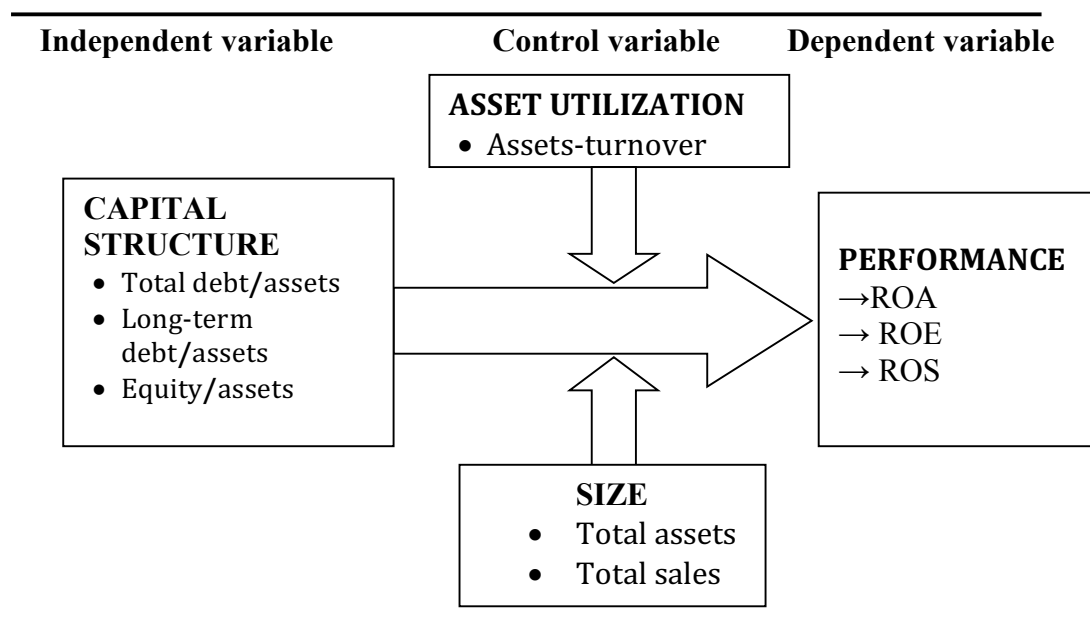
**Table 3.2 Details of Variables**

<b>Independent Variables</b>	Measurement	Formula			
Capital structure	Total Debt to Total assets (TDA)	Total Debts divided/Total assets x 100	<b>Dependent Variable</b>	Measurement	Formula
	Long-term Debt to Total assets (LDA)	Long-term debt/Total assets x 100	Financial performance	Return on Assets (ROA)	Profit after tax/Total Assets
	Equity to Total assets (EQA)	Equity / Total assets x 100		Return on Equity (ROE)	Profit after tax/Total equity
				Return on Sales (ROS)	Profit after tax/Sales
<b>Control Variables</b>	Measurement	Formula			
Asset utilization	Asset-turnover ratio (ATO)	Sales/Total assets x 100			
Size	Total Assets (TAST)	log (Assets)			
Size	Total sales (TSAL)	log (sales)			

The control variables are treated as explanatory variables.

### Conceptual model

Following the works of Singh and Singh (2016), Park and Jang (2013), Nirajini and Priya (2013) Noor and Suarchi (2015), and Javed, Younas and Imran (2014), we conceptually model our study thus:



**Fig. 3.1 Researchers' Conceptual Model**

Fig.3.1 tells us that the firms' performance is a function of capital structure subject to such control variables of asset size and utilization. The concepts are expressed in the model specifications (see 3.4).

### Model specification

The relationship between capital structure and financial performance using linear regression equation is given as

$$PERF = \beta_0 + \beta CS + e_t \dots \dots \dots (1)$$

Where PERF = financial performance measures

CS = capital Structure

$e_t$  = the error term

Econometric transformation of equation (1) above for all of the three measurements of dependent variable is given as:

$$ROA = \beta_0 + \beta_1 TDA + \beta_2 LDA + \beta_3 EQA + \beta_4 ATO + \beta_5 TAST + \beta_6 TSAL + e_t \dots \dots \dots (2)$$

$$ROE = \beta_0 + \beta_1 TDA + \beta_2 LDA + \beta_3 EQA + \beta_4 ATO + \beta_5 TAST + \beta_6 TSAL + e_t \dots \dots \dots (3)$$

$$ROS = \beta_0 + \beta_1 TDA + \beta_2 LDA + \beta_3 EQA + \beta_4 ATO + \beta_5 TAST + \beta_6 TSAL + e_t \dots \dots \dots (4)$$

Where  $\beta_0, \beta_1, \dots, \beta_6$ , are the model parameter (slope)

ROA = Return on assets, expressed in percent as a measurement of financial performance.

ROE = Return on equity expressed in percent as a measurement of financial performance

ROS = Return on sales, expressed in percent as a measurement of financial performance.

TDA = Total debt over asset ratio, expressed in percent, as a measurement of capital structure.

LDA = Long-term debt over asset ratio, expressed in percent, as a measurement of capital structure.

EQA = Equity over asset ratio, expressed in percent, as a measurement of capital structure.

ATO = Sales over asset ratio, control variable, a measurement of asset utilization.

TAST = Natural logarithm of total asset, control variable, a measurement of firm size.

TSAL = Natural logarithm of total sales, control variable, a measurement of firm size.

## Method of Data Analysis

The study used regression model to test the influence of capital structure on financial performance of cement companies in Nigeria. Method of Ordinary Least Square (OLS) and Autoregressive Distributed Lags (ARDL) approach were adopted in this study to regress and to investigate the long-run equilibrium (cointegration) among variables. OLS is used because it minimizes the error between the estimated points on the line and the actual observed points of the estimated regression line by giving the best fit. This method is in line with other researchers like Ogbulu and Emeni (2012), Onaolapo and Kajola (2010), Chowdhury and Chowdhury (2010), Muritala (2012), and Park and Jang (2013) who all used multiple regression analysis in their studies.

## Autoregressive Distributed Lag (ARDL) or Bounds Test

Autoregressive Distributed Lag (ARDL) or bounds test which is initially proposed by Pesara and Shin (1998), is an alternative cointegration technique which is used for determining cointegrating relationship in small samples unlike the Johansen cointegration technique which may require large data samples for the purpose of validity (Ghatak and Saddiki, 2001). Unlike other cointegrating techniques, which require all of the regressors to be integrated of the same order, ARDL can be applied whether the regressors are I(1) and I(0) or mix of both (ie. whether the results are of order 1 or order zero stationary). It avoids the pre-testing problems associated with standard cointegration, which require that variables are already classified I(1) or I(0). It also avoids the optimal number lags to be specified, implying that with ARDL, it is possible that different variables have different optimal number of lags. An ARDL model incorporates the lagged values of the independent variables among the set of explanatory variable (Gujarati & Porter 2009).

## RESULT

### Descriptive Statistics

**Table 4.1 Descriptive Statistics**

	ROE	ROA	ROS	TDA	LDA	EQA	ATO	TAST	TSAL
Mean	22.71575	14.40000	24.48475	38.66150	15.91725	62.65200	50.98100	19.86400	19.09350
Median	21.14000	15.86500	19.43000	37.95500	14.53000	60.24000	46.40000	19.41500	18.33500
Maximum	50.82000	26.17000	56.61000	63.19000	42.08000	85.85000	112.1000	23.57000	23.66000
Minimum	2.110000	3.930000	9.210000	19.48000	5.200000	36.81000	3.000000	17.11000	15.56000
Std. Dev.	12.98146	7.151326	13.64980	8.791056	7.583664	12.60659	36.52253	2.065694	2.610806
Skewness	0.340405	0.002645	1.101408	0.484382	1.778668	0.103096	0.226491	0.617612	0.648302
Kurtosis	2.387274	1.492116	3.046371	4.112536	6.728064	2.337157	1.784762	1.982403	2.034039
Jarque-Bera	1.398224	3.789572	8.090908	3.627069	44.25516	0.803126	2.803327	4.268803	4.357101
Probability	0.497026	0.150351	0.017502	0.163077	0.000000	0.669273	0.246187	0.118315	0.113206
Sum	908.6300	576.0000	979.3900	1546.460	636.6900	2506.080	2039.240	794.5600	763.7400
Sum Sq. Dev.	6572.214	1994.517	7266.361	3014.024	2242.966	6198.120	52021.92	166.4166	265.8361
Observations	40	40	40	40	40	40	40	40	40

Source: E-view Result

Table 4.2 shows the summary of the descriptive statistics of sample study. From the above results, number of total observations is 40 and mean value of return on equity is 22.7, return on assets has a mean of 14.4, return on sales show a good return with a mean value of 24.5, mean value of debt to assets ratio, which is an independent variable and determines capital structure, is about 38.7, long term debt to asset's mean is 15.9, equity to asset ratio which is again independent variable has a mean value of 62.7, assets-turnover ratio has a mean value of about 60, natural log of total assets and that of total sales which both measure firm's size are

19.7 and 19.1 respectively. Standard Deviation for ROE is 12.9, ROA is 7.2, ROS is 13.6, and for TDA, LDA, EQA, ATO, TAST, and TSAL are 8.8, 7.6, 12.6, 36.5, 2.1 and 2.6 respectively.

Skewness is positive for return on equity, return on assets, return on sales, total debt over assets ratio, long term debt over assets ratio, equity over asset ratio, assets-turnover ratio, natural log of total assets and that of total sales, implying that the data is positively skewed because extreme values are to the left. Kurtosis is used to show the peak or flatness of the data. There are three types of kurtosis: platykurtic distribution, which shows low degree of peak or flatness; normal or mesokurtic distribution which shows normal distribution curve; and leptokurtic distribution which shows high peak of the data. If kurtosis is less than 3 then it is a platykurtic distribution, if it is equal to 3 then it is a mesokurtic distribution and if kurtosis shows values more than 3 then it is a leptokurtic distribution. Total debt over assets ratio and long term debt over assets ratio have kurtosis values more than 3, which show leptokurtic distribution. Return on sales has kurtosis value of 3 which shows mesokurtic distribution, while return on assets, return on equity, equity over assets ratio, assets-turnover ratio, natural log of total assets and that of total sales have kurtosis value less than 3, which reveals flatness of data and it is platykurtic distribution. The p-values of Jarque-Bera indicate that all the variables are normally distributed except Return on Sales, and Long-term debt to asset ratio which are not.

## Correlation

**Table 4.3 Correlation Matrix**

	ROE	ROA	ROS	TDA	LDA	EQA	ATO	TAST	TSAL
ROE	1.000000								
ROA	0.803810	1.000000							
ROS	0.554330	0.619113	1.000000						
TDA	0.157079	0.083060	-0.145073	1.000000					
LDA	-0.211747	-0.197666	-0.087124	0.575628	1.000000				
EQA	-0.383540	-0.376938	0.014809	-0.765078	-0.343300	1.000000			
ATO	0.296272	0.293699	-0.282360	0.031089	-0.221390	-0.047020	1.000000		
TAST	0.303715	0.420973	-0.058671	0.174895	-0.035032	-0.338100	0.656773	1.000000	
TASL	0.355484	0.460667	-0.069517	0.233540	-0.022691	-0.406212	0.609587	0.977891	1.000000

**Source: E-view Result**

The correlation matrix in table 4.3 shows the degree of correlation between the variables. The table reveals that the variables among themselves have both positive and negative correlations and there is no serious problem of multicollinearity found in this research study. Although two correlation values are greater than 0.80 which show multicollinearity, it is ignored and acceptable in panel data analysis.

## Data Analysis and Findings

The empirical results of the OLS simple regression estimated on the level series data for the three models are presented in table 4.3 below:



**OLS ESTIMATIONS****Table 4.3 Summary results of level series OLS multiple regression**

Variables	MODEL 1 (ROA)		MODEL 2 (ROE)		MODEL 3 (ROS)	
	Coefficient (Std. error)	t-statistic (Prob.)	Coefficient (Std. error)	t-statistic (Prob.)	Coefficient (Std. error)	t-statistic (Prob.)
Intercept	44.50899 (24.41432)	1.823069 (0.0774)	95.68369 (45.19197)	2.117272 (0.0419)	9.535065 (53.91293)	0.176860 (0.8607)
TDA	-0.273846 (0.21180)	-1.292925 (0.2050)	-0.224584 (0.392057)	-0.572835 (0.5706)	-0.268612 (0.467714)	-0.574308 (0.5697)
[ [[[ [ LDA	-0.158474 (0.172509)	-0.918640 (0.3649)	-0.431557 (0.319322)	-1.351482 (0.1857)	-0.239606 (0.380943)	-0.628982 (0.5337)
EQA	-0.318610 (0.137237)	-2.321604 (0.0266)	-0.528350 (0.254032)	-2.079861 (0.0454)	-0.166407 (0.303054)	-0.549099 (0.5866)
ATO	0.027359 (0.039385)	0.694656 (0.4921)	-0.096557 (0.072903)	1.324456 (0.1945)	-0.182902 (0.086972)	-2.10994 (0.0432)
TAST	-1.974170 (2.576166)	-0.766321 (0.4489)	-5.952632 (4.768595)	-1.248299 (0.2207)	5.609577 (5.688819)	0.986071 (0.3313)
TSAL	2.135932 (1.998080)	1.068992 (0.2928)	4.661623 (3.698532)	1.260398 (0.2164)	-3.274932 (4.412259)	-0.742235 (0.4632)
R-Squared	0.377168		0.352365		0.166431	
Adjusted R <sup>2</sup>	0.263925		0.234613		0.014767	
F-statistic	3.330625		2.992436		1.097422	
Prob(F-statistic	0.011235		0.019070		0.384606	
Durbin-Watson	0.774458		0.759031		0.451340	
Observations	40		40		40	

**Source: Author's compilation from E-view results**

In table 4.3 above, we have the results of the level series multiple regression models as specified in equations (1), (2) and (3). From the regression results of the three models (ROA, ROE and ROS), Durbin-Watson (DW) statistic for the three models are 0.77, 0.76 and 0.45 respectively. These indicate the presence of positive autocorrelation in the estimated models, and the stronger the closer the DW statistic is to zero (Koutsoyianis, 1977). This may render the estimated results unreliable for both analysis and policy formulation, suggesting the need for more rigorous analysis of the stationarity properties of the level series data (Ogbulu, 2010). The presence of auto-correlation in the level series multiple regression estimates provides a firm justification for the Autoregressive Distributed Lag (ARDL) tests that were carried out and reported in tables 4.4, 4.5 and 4.6 below:

## Autoregressive Distributed Lag (ARDL) Estimations

### Model 1 Return on asset (ROA) as a dependent variable

**Table 4.4 Autoregressive Distributed Lag (ARDL) Results**

Dependent Variable: ROA				
Method: ARDL				
Date: 01/21/17 Time 18:10				
Sample (adjusted): 4: 40				
Included observations: 37 after adjustments				
Maximum dependent lags: 3 (Automatic selection)				
Model selection method: Akaike info criteria (AIC)				
Dynamic regressors (3 lags, automatic) TDA LDA EQA ATO TAST TSAL				
Fixed regressors: C				
Number of models evaluated: 12288				
Selected Model: ARDL(2, 1, 2, 0, 3, 3, 2)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA(-1)	0.456276	0.184357	2.474966	0.0242
ROA(-2)	0.351641	0.211637	1.661526	0.1149
TDA	-0.052267	0.379963	-0.137559	0.8922
TDA(-1)	-0.576823	0.297182	-1.940976	0.0690
LDA	0.386211	0.221497	1.743636	0.0993
LDA(-1)	0.596442	0.254800	2.340821	0.0317
LDA(-2)	0.403004	0.183597	2.195044	0.0423
EQA	-0.180622	0.282378	-0.639647	0.5309
ATO	0.136442	0.103764	1.297764	0.2117
ATO(-1)	-0.231101	0.142327	-1.623730	0.1228
ATO(-2)	0.234932	0.112710	2.084398	0.0525
ATO(-3)	-0.090559	0.064352	-1.407248	0.1774
TAST	3.942238	6.639204	0.593782	0.5605
TAST(-1)	-7.489589	5.266235	-1.422191	0.1731
TAST(-2)	10.14603	3.52498	2.856028	0.0109
TAST(-3)	1.560683	0.932015	1.674526	0.1123
TSAL	-2.966831	5.349919	-0.554556	0.5864
TSAL(-1)	7.293325	4.966282	1.468568	0.1602
TSAL(-2)	-10.00175	3.293923	-3.036424	0.0075
C	-41.09962	67.08091	-0.612687	0.5482
R- squared	0.832082	Mean dependent var	14.07730	
Adjusted R-squared	0.644410	S. D. dependent var	7.313787	
S.E. of regression	4.361313	Akaike info criterion	6.086800	
Sum of squared resid	323.3579	Schwarz criterion	6.957566	
Log likelihood	-92.60580	Hannan-Quinn criter	6.393786	
F-statistic	4.433690	Durbin-Watson stat	1.983504	
Prob(F-statistic)	0.001642			

Source: E-view result

Table 4.4 presents the results of the ARDL test for the impact on ROA of independent variables representing capital structure, namely, Total Debt to Asset ratio (TDA), Long-term Debt to Asset ratio (LDA), Equity to Asset ratio (EQA), Asset-Turnover ratio (ATO) and Total Asset (TAST) and Total Sales (TSAL) both representing firm size. The results indicate that TDA, EQA and TSAL are all negatively related to ROA. It can be concluded that an increase in debt, equity will cause a decrease in a firm's performance. Only the one-period lags of TDA and TSAL have significant relationship with ROA. LDA exerts a positive and significant relationship with ROA,

while ATO and TAST have positive but insignificant relationship with ROA. The one and two period lags of LDA are significantly related while only the two-period lags of ATO and TAST have significant relationship.

The overall result reveals that R-squared is 0.83 and adjusted R-squared is 0.64 indicating that 83% of the variations in ROA could be explained by the combined effects of changes in the explanatory variables. The model is a good fit with the F-statistic value and its P-value if 4.433690 and 0.001642 respectively. The Durbin-Watson statistic value is approximately 2.0 indicating the absence of any auto-correlation in the ARDL model, implying that the model results presented in table 4.5 are obviously better than the level series multiple regression results in table 4.1.

## Model 2 Return on equity (ROE) as a dependent variable

**Table 4.5 Autoregressive Distributed Lag (ARDL) Results**

Dependent Variable: ROE				
Method: ARDL				
Date: 01/21/17 Time 18:08				
Sample (adjusted): 4: 40				
Included observations: 37 after adjustments				
Maximum dependent lags: 3 (Automatic selection)				
Model selection method: Akaike info criteria (AIC)				
Dynamic regressors (3 lags, automatic) TDA LDA EQA ATO TAST TSAL				
Fixed regressors: C				
Number of models evaluated: 12288				
Selected Model: ARDL(3, 1, 0, 3, 2, 2, 2)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROE(-1)	0.725411	0.167855	4.321649	0.0005
ROE(-2)	0.232465	0.208526	1.114798	0.2804
ROE(-3)	-0.434891	0.168161	-2.586158	0.0192
TDA	1.511534	0.573198	2.637018	0.0173
TDA(-1)	-1.696429	0.519380	-3.266255	0.0045
LDA	-0.190536	0.242135	-0.786898	0.4422
EQA	0.758727	0.426092	1.780666	0.0928
EQA(-1)	-0.801186	0.443909	-1.804840	0.0888
EQA(-2)	-0.849943	0.260620	-3.261234	0.0046
EQA(-3)	0.535315	0.201879	2.651667	0.0168
ATO	0.616533	0.162058	3.804393	0.0014
ATO(-1)	-1.342917	0.300196	-4.473466	0.0003
ATO(-2)	0.778981	0.217602	3.579834	0.0023
TAST	40.12621	11.16669	3.593384	0.0022
TAST(-1)	-45.02470	11.33343	-3.972733	0.0010
TAST(-2)	17.76439	4.941417	3.594999	0.0022
TSAL	-32.76357	9.028857	-3.628762	0.0021
TSAL(-1)	43.21183	10.37750	4.163992	0.0007
TSAL(-2)	-21.22990	5.133238	-4.135772	0.0007
C	-9.477808	106.6762	-0.088847	0.9302
R- squared	0.865748	Mean dependent var	21.44405	
Adjusted R-squared	0.715701	S. D. dependent var	12.38717	
S.E. of regression	6.604798	Akaike info criterion	6.916846	
Sum of squared resid	741.5972	Schwarz criterion	7.787613	
Log likelihood	-107.9617	Hannan-Quinn criter	7.223832	
F-statistic	5.769858	Durbin-Watson stat	2.043279	
Prob(F-statistic)	0.000328			

Source: E-view result

The ARDL results in table 4.5 indicate a goodness of fit with an F-ratio of 5.769858 and probability of 0.000328.  $R^2$  is 86.6% and the adjusted  $R^2$  is 71.6%, meaning that the model explains that approximately 86.6% of the changes in ROE are attributable to the combined effect of total debt to asset ratio (TDA), long-term debt to asset ratio, (LDA) equity to asset ratio (EQA), asset-turnover ratio, (ATO) firm total sales (TSAL) and total asset (TAST). The D-W statistic value of 2.043279 indicates the absence of any auto-correlation in the model.

From the above result, total debt to asset (TDA) exerts a positive and significant impact on return on equity (ROE) while its one- period lag has negative coefficient but also significantly impacts on ROE; long-term debt to asset ratio (LDA) has a negative and insignificant relationship with ROE, equity to asset ratio (EQA) has a positive and significant relationship with ROE, while its one and two-period lags are all negatively significantly related to ROE. Total asset-turnover ratio (TAST) and its two-period lag exert positive and significant relationship with ROE, while its one-period lag is negative but still statistically significant.

Total asset (TAST), which coefficient is negative except the one-period lag, exerts positive and significant relationship with ROE, while firm's Total sales (TSAL) negatively and significantly relates to ROE. Thus, as in model 1, long term debt to asset ratio (LDA) appears not to have any significant impact on return on equity of cement companies in Nigeria. Total debt to asset ratio has positive and significant impact over return on asset.

### Model 3 Return on sales (ROS) as a dependent variable

**Table 4.6 Autoregressive Distributed Lag (ARDL) Results**

Dependent Variable: ROS				
Method: ARDL				
Date: 01/21/17 Time 18:11				
Sample (adjusted): 4: 40				
Included observations: 37 after adjustments				
Maximum dependent lags: 3 (Automatic selection)				
Model selection method: Akaike info criteria (AIC)				
Dynamic regressors (3 lags, automatic) TDA LDA EQA ATO TAST TSAL				
Fixed regressors: C				
Number of models evaluated: 12288				
Selected Model: ARDL(1, 0, 0, 0, 3, 3, 2)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROS(-1)	0.790078	0.106419	7.434563	0.0000
TDA	0.182312	0.557101	0.327252	0.7467
LDA	-0.055233	0.259056	-0.213209	0.8332
EQA	0.082357	0.470519	0.175034	0.6827
ATO	-0.234807	0.160308	-1.464726	0.1578
ATO(-1)	-0.101951	0.239065	-0.426490	0.6741
ATO(-2)	0.427667	0.180899	2.364125	0.0278
ATO(-3)	-0.290740	0.105295	-2.761202	0.0117
TAST	8.952118	10.38119	0.862340	0.3982
TAST(-1)	-14.75041	8.460699	-1.743404	0.0959
TAST(-2)	17.96124	5.945657	3.020900	0.0065
TAST(-3)	1.739644	1.590493	1.039777	0.2864
TSAL	-6.365554	8.393391	-0.758401	0.4566
TSAL(-1)	13.41891	7.837486	1.721035	0.1016
TSAL(-2)	-15.80782	5.396154	-2.929461	0.0080
C	-105.6211	106.9484	-0.987585	0.3346
R- squared	0.818801	Mean dependent var	24.01541	
Adjusted R-squared	0.689388	S. D. dependent var	14.08897	
S.E. of regression	7.852149	Akaike info criterion	7.257921	
Sum of squared resid	1294.781	Schwarz criterion	7.954534	
Log likelihood	-118.2715	Hannan-Quinn criter	7.703510	
F-statistic	6.326672	Durbin-Watson stat	2.110975	
Prob(F-statistic)	0.000080			

Source: E-view result

The adjusted  $R^2$  of model 3 (table 4.6) is 0.818809, indicating that approximately 82% of the variation in return on sales (ROS) is explained by the independent (capital structure) variables. Again, the F-statistic of 6.3266772 and P-value of 0.000080 indicate that the model is a good fit. The Durbin-Watson statistic value of 2.110925 suggests the absence of out-correlation in the model.

Furthermore, coefficient of TDA and EQA are positive and insignificant while the coefficient of LDA and ATO are negative and also insignificant. This result shows that one unit of change in TDA and EQA would lead to positive change in ROS. At lags 2 and 3, ATO is significant just like TAST at lags 1 and 2 with negative and positive coefficient respectively at both lags. TSAL has negative and statistically insignificant relationship with ROS at lag 1; TSAL is positive and not significant while at lag 2, its coefficient is negative and significant.

## DISCUSSION OF FINDINGS

The study's findings are in line with Ebaid (2009) and Saeedi and Mahmoodi (2011) who found negative relationship between total debt/assets ratio and long-term debt with ROA. Gansuwan and Önel(2012) for the Swedish firms found significant negative relations between ROA and TDA. Olokoyo (2012) also found a significant and negative impact of TDTA on ROA in Nigeria. In Albania, Çekrezi(2013), finds that TDA negatively impacts on the ROA. The results of Salteh et al. (2012) in Iran indicate a negative relation with ROA. In Pakistan, according to Umar et al. (2012), the results show that TDA negatively impacts on the ROA. In Bangladesh, according to Hasan et al.(2014), the results show significant negative relation between ROA and TDA. Since ROA measures management's ability to utilize the firm's assets to generate revenue, it is expected that the ROA, in this study, will have a significant positive relationship with ATO, due to the fact that higher leverage may lead managers to utilize the firm's assets more efficiently since they have an extra obligation to meet debt-holders' expectations (Abu-Rub,2012).

Previous studies by Nirajini and Priya (2013) and Parte and Jang (2013) have also shown positive relationship between total debt to asset ratio and return on asset. It is indicative that, for any increment in total debt ratio, all things being equal, profit of the sampled cement firms in Nigeria shall also increase correspondingly and vice-versa. The agency cost theory hypothesis asserts that to reduce agency cost and force the managers to act more in the interest of the owners, higher total debt than equity should be introduced in firm's capital structure. If the ratio of debt is higher in firm's capital structure, the fear of liquidation, debt servicing, insolvency which may result to loss of job to the mangers, will lead to a reduction in the cost, lead to efficiency and finally improve the firm's performance. From the study, cement companies in Nigeria should use more debt to increase their profitability. The findings of ARDL estimation in table 4.6 are consistent with Al-Taani (2013), Onaolapo and Kajola (2010), Pratheepkanth (2011) and Voulgaris et al (2001).

## CONCLUSION AND REMARKS

The study investigates the impact of capital structure on financial performance of cement companies in Nigeria using three accounting based measures of performance (ROA, ROE and ROS). Due to the problem of autocorrelation in the panel data, the study employed the Autoregressive Distributed Lag (ARDL) method also known as Bound test, to estimate the parameters. The regression results reveal that all the explanatory variables except ATO and TAST, have mixed relationship with firm performance indicators used in the study, hence capital structure variables (Total Debt to Asset ratio, Long-term debt to Asset ratio and Equity to Asset ratio) are found to have mixed impact on financial performance of Nigerian cement companies. This result finds robust support in earlier studies by scholars like Ogbulu and Emeni (2012), Khannam, Nasereen and Pirzada (2014), Tifow and Sayilir (2015), Ebaid (2009), Compellow (2006), Psillaki (2007), and Muritala (2013).

Modigliani and Miller (1958) had earlier stated in their theory of capital structure irrelevance that if other things remain constant, then capital structure does not have impact on firm performance. The fact remains that practically in Nigerian economy and the world today, it is impossible to hold all things constant. The observed mixed relationship between debt and equity, and performance proxies used in the study could be explained by the higher cost of debt and strong covenants attached to the use of debt due to lack of well developed equity and debt ( long-term debt) market in Nigeria. This is supported by Amjed (2011) who asserts that the reason could be attributed to the longer duration of debt, underdeveloped debt market and high required rate of return on debt. The study also reveals that efficient utilization of assets is an important factor that impacts on the financial performance of cement firms in Nigeria rather than using different sources of funds.

The study recommends that although mixed relationship between capital structure and financial performance of cement companies in Nigeria was found, managers should be careful while it is necessary to use debt as a source of finance. They should rather finance their operations with retained earnings and use debt and equity, in that order, as the last options as supported by the Pecking order theory.

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