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The Effects of Organisational Structures and Processes on Organisational Learning. A Case Study at Selected Financial Institutions in Kwame Nkrumah University of Science and Technology, Ghana

By Jonathan Worae, Jonathan Arthur Baidoo Frederick, Isaac Frimpong,
Edward Akuako & Mavis A. Buari

Kwame Nkrumah University of Science and Technology

Abstract- The study sought to evaluate the effects of organisational structures and processes on organisational learning among selected financial institutions in Kwame Nkrumah University of Science and Technology (KNUST) Kumasi, Ghana. Questionnaire and interview were the main methods for the collection of data. The Statistical package for service solutions (SPSS) was used to edit and present tables for data obtained from the questionnaires. The Chi-square Cramers V and the Spearman Rho were the statistical tools used to test the relationship among the relevant variables, both ranked and unranked variables respectively.

The content analysis technique was used to describe the data obtained from the management through the interviews.

Keywords: *organisation learning, structures, processes, financial sector.*

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The Effects of Organisational Structures and Processes on Organisational Learning. A Case Study at Selected Financial Institutions in Kwame Nkrumah University of Science and Technology, Ghana

Jonathan Worae^α, Jonathan Arthur Baidoo Frederick^σ, Isaac Frimpong^ρ, Edward Akuako^ω
& Mavis A. Buari[¥]

Abstract- The study sought to evaluate the effects of organisational structures and processes on organisational learning among selected financial institutions in Kwame Nkrumah University of Science and Technology (KNUST) Kumasi, Ghana. Questionnaire and interview were the main methods for the collection of data. The Statistical package for service solutions (SPSS) was used to edit and present tables for data obtained from the questionnaires. The Chi-square Cramers V and the Spearman Rho were the statistical tools used to test the relationship among the relevant variables, both ranked and unranked variables respectively.

The content analysis technique was used to describe the data obtained from the management through the interviews.

The sample size for the study was sixty-one (61) including employees and management. In relation to our objectives, the following were the findings. On existing structures and processes, it was found that the selected financial institutions possess a hypertext structure as they are characterised by high level of participation and formalisation which is a combination of two authority structures.

The following processes were identified; benchmarking, organisational restructuring and consulting experts on some business operations. To measure organisational learning, the following elements were used, knowledge sharing and innovativeness on job performance and all these were found to be high. Finally, on the relationship between organisational structures and processes and organisational learning, it was revealed that the structures and processes promote a learning culture, however, some of the measures used for the processes didn't promote or relate to learning.

Keywords: organisation learning, structures, processes, financial sector.

1. INTRODUCTION

Structures that exist in organisations influence the effectiveness of business operations which includes business processes such as benchmarking, organisational restructuring which are

focused in this work (Conner & Douglas 2005, Armstrong & Rasheed 2013). They are very significant in terms of the allocation of tasks, utilisation of resources and pattern of communication.

Processes within the organisation such as training, orientation promote the acquisition of knowledge within organisations and in this study, organisational restructuring and benchmarking were focused as organisational processes and how they result to learning.

Learning has become one of the crucial components in organisations for the achievement of organisational effectiveness in the face of rapidly changing trends in the economic environment (Kanten, Selahattin & Gurlek, 2015), hence it is considered as one of the key processes to organisational success (Wang & Ellinger, 2008; Curado, 2006).

The type of organisation comprising of the structures and processes influences the innovative capabilities in organisations, sharing of knowledge and improvement in managerial activities (Fiol & Lyles, 1985), hence structures and managerial processes are very important with regard to organisations ability to learn.

Scott (2011) affirms that, acquiring and leveraging new insights/abilities is dependent on what individuals already know, their perceptual filters, their motivation to learn, their opportunities to learn, and the mechanisms in place to enable the acquisition of knowledge. Thus the structural mechanisms within organisations affect nature of learning in organisations. They reflect the way in which information and knowledge are distributed within organisations (Maria & Martinez 2011), hence well-designed structures and processes promote the capability of organisations to accumulate embedded experiences in its routines while the obverse is true for poorly developed structures and processes. In this vein, structures and processes should be key consideration for organisations seeking to improve their learning abilities and it is been assumed

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that organisations develop proper structures to meet their learning needs.

Structures determine roles, authority, communication lines, decision making process and allocation of tasks in business entities (Kanten et al, 2015). Several structures exist within organisations that influence the nature of learning and in recent years researchers have sought to determine which structure brings the most advantages for organizations and they have suggested that organizational structures should be responsive to a variety of individual needs in businesses (Conner & Douglas, 2005) and one of the needs is the ability to learn.

Organisational learning as a process involves the creation or acquisition and sharing of knowledge through communication and the type of structure within the organization affects such a process (Chong, Ramachandran & Lin, 2008).

There are several typologies of organizational structures espoused in literatures but this work focuses on the types that deal with the level of centralization and formalization of work. Stokes(2005) argues that organizational structures includes the level of complexity, centralization and formalization which comes out with three typologies, thus mechanistic, organisatic and bureaucratic structures.

These structures exemplify the above elements which are centralization and formalization of work and they influence learning within organisations. The level of centralization refers to where the decision making authority lies, highly centralized organisations establish decision making authority at the executive level while in highly decentralized organisations, decision making authority trickle down to the lower level, Stokes(2005). The level of formalization or standardization refers to the degree to which rules and regulations govern organizational behavior and work processes, (Stokes, 2005; Fredrickson, 1986). It is where there is the existence of codified rules and regulations about work and workplace behavior.

Exhibiting these features are the organistic, mechanistic and bureaucratic structures. Organistic structure involves lower level of centralization, less formalization and allowance of employees discretion in carrying out of tasks. Organisations with mechanistic structures exhibit a higher level of centralization, high level of formalization and employees receiving lower level of discretion in carrying out of tasks, (Stokes, 2005).

Bureacratic structures exhibit a higher level of centralization and formalization but employees are allowed to make decisions in line with business procedures and rules, (Stokes, 2005).

All the above structures influence learning and with the presence of competition in the economic environment, learning is an indispensable element within organisations to remain competitive.

After reviewing literature on organisational structures, it was found that most of the studies on organisational structures have concentrated on the relationship between organisational structures and job embeddedness, organisational trust, organisational performance. However, few studies have focused on organisational structures and learning and they are mostly done in developed and other western countries. For instance, the study by Dicle and Okan in 2015 in Turkish revealed that there is a negative relationship between organisational structures, specifically centralisation and formalisation and organisational learning. Also, a study by Maria and Martinez in 2011 in Spain showed that a centralised organisational structure favours organisational learning and that organisations with low centralisation inhibit learning.

Processes within organisations and how they influence learning have also received little attention especially with emphasis on benchmarking and organisational restructuring. Expanding knowledge in these areas would be very beneficial to financial institutions and other organisations to become more effective, efficient and stable and close the existing research gap.

Hence, this work seeks to assess how the above mentioned structures and processes affect learning, specifically with regard to financial institutions. Specifically, what are the existing structures and processes in the selected financial institutions and the relationship that exist between them and learning in the selected financial institutions? Thus, the researchers seek to find out the existing structures and processes in the selected financial institutions and ascertain their relationship with organizational learning in Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.

II. RESEARCH METHODS

The mixed method was employed to assess how organisational structures and processes influence learning in the selected financial institutions in Kwame Nkrumah University of Science and Technology, Ghana. Both quantitative and qualitative techniques were used in the study. This approach was used because its requisite purpose is to embark on a particular research activity from any applicable point of view, making use where appropriate more than one form of analytical viewpoint.

The target population included all employees (and managers) in the selected financial institutions in Kwame Nkrumah University of Science and Technology, Ghana.

The sample size for the study was sixty-one (61). This includes fifty-eight (58) employees and three (3) managers within two banks. This size was arrived at because the study was undertaken in only 7(seven)

banks out of the numerous banks in Kwame Nkrumah University of Science and Technology, Ghana. 7(seven) banks were used because the management team of some the banks disallowed such study to be undertaken. This can therefore affect the generalisation of the responses to all the financial institutions in Kwame Nkrumah University of Science and Technology, Ghana.

The convenience sampling technique was employed in the selection of respondents. This was used because the study focused on employees and management from the selected financial institutions that were willing to participate, thus those that were willing to fill the questionnaires and be interviewed respectively.

Questionnaires and structured interviews were used in the collection of data from the employees, thus the junior staff and the managers respectively. The questionnaires were used in order to get a standard form of responses in relation to the nature of centralisation, formalisation, sharing of knowledge and innovation to be able to establish relationship among these variables and learning. Interviews were used to gather information from the management on the organisational processes and their opinions on how they influence learning.

Statistical Package for Service Solutions(SPSS) was used to examine the data obtained through the questionnaires. Frequency and correlation tables were used to display the responses. Frequency tables were used to present employees responses on existing organisational structures and learning abilities whereas the correlation tables which are Chi-square and the Spearman Rho were used to determine relationship between the organisational structures and learning.

The former(Chi-square) was used for unranked variables whereas the latter(Spearman Rho) was used for ranked variables.

Chi-square Likelihood ratio was used to find out if there is a relationship between the unranked variables. It states that when the likelihood ratio is less than alpha (0.05) as used in the work, then there is a relationship and if it is greater than alpha, then there is no relationship.

In determining the strength of relationship among the unranked variables, the Chi-square Cramer's V was used and it states the following as assumptions:

Cramer's V of (0.1 – 0.2) = weak relation; (0.2- 0.3) = moderate relation; and (0.3+)= strong relation. The Cramer's V is more appropriate in testing relationships when dealing with more than 2 by 2 rows and columns.

The Spearman Rho on the other hand was used to test the strength of the relationships among the ranked variables and it states the following as assumptions:

Spearman's Rho of (0 – 0.5) = weak but positive correlation; (0 to -0.5) = negative and weak correlation; (0.6-0.9) = strong and positive correlation;(- 0.6 to -0.9) = strong and negative correlation (1) = perfectly correlated; and (-1)= perfectly negative correlation;

Data obtained through the interviews were examined with the use of content analysis. Content analysis involves the systematic description of written, spoken or visual information. Hence in this study, the responses obtained from the managers were described and related to existing literature.

III. RESULTS

a) *Measurement of Organisational Structures*

Organisational structures as defined in the background of the study is an aspect of the organisation that determines work processes within every organisation, such as allocation of tasks, utilisation of resources. In measuring such a structure, two key components were used and these are the level of employees participation in decision making process and the level of formalisation of work as mentioned in the literature as whether a mechanistic, bureaucratic or organic structure.

i. *Employee participation in decision making and objective setting*

The employees were asked whether they are allowed to participate in decision making process and setting of the objectives and 10.3% of them reported that they never participated in decisions, 63.8% said they sometimes participated, and 25.9% said they always participated in decision making and objective setting. This shows that 89.7% of the employees at least have some input in decisions of their organisation. This would help build enthusiasm and commitment toward the organisation and the attainment of goals.

Table 1: Participation of employees in decision making and objective setting

Participation level	N	%
Not at all	6	10.3
Sometimes	37	63.8
Always	15	25.9
Total	58	100

Source: Fieldwork. April, 2017.

ii. Work Standardisation/Level of formalisation of work

The data as shown in table 2 showed 3.4% of the respondents viewing their work activities as poorly formalised, 17.2% viewing their work as moderately formalised, and 79.4% viewing their job to be of high formalisation. Hence, the financial sector can be seen to

be highly standardised as the analysis indicates. Thus there is proliferation of rules and regulations governing how things are supposed to be done. This might be due to the high sensitive of the sector. This promotes basic learning but not innovative learning as the result of the relation between standardisation and innovation shows.

Table 2: Standardisation of work activities

Level of formalisation	N	%
Very poor	1	1.7
Poor	1	1.7
Average	10	17.2
Good	27	46.6
Very good	19	32.8
Total	58	100

Source: Fieldwork. April, 2017.

b) Measurement for Organisational Processes

The organisational processes practiced in the financial sector were measured using some of the managerial activities found within the financial institutions and these include, benchmarking and organisational re-structuring and consultation of experts. These processes are learning activities and hence they were not related to the measures used for organisational learning but they contribute to learning within organisations.

c) Measurement of Organisational Learning

The learning practices within the selected financial institutions were measured using two factors. These were employee innovation, and the sharing of knowledge and work experiences.

i. Employee innovation on Job performance

17.2% of the respondents said they never exercised any form of innovation on their job performance, 32.8% said they are sometimes innovative, and 50% said they are always innovative on the task. These also represent the freedom granted by the organisation on innovative ways of executing tasks.

This shows that, there is on average freedom for employees of the selected financial institutions to innovate and come out with new ways of working as the result shows more than half of the respondents claiming they have innovated on their work activities or have the opportunity to do so. These innovations can lead to learning of new ways to doing things better in the organisation.

Table 3: Employee innovation on Job performance

Employee innovation	N	%
Not at all	10	17.2
Sometimes	19	32.8
Always	29	50
Total	58	100

Source: Fieldwork. April, 2017.

ii. Sharing of knowledge and experiences among employees

The data in table 4 showed 12.1% of respondents claiming knowledge sharing in their organisation was poor, 6.9% said it was average, and 81% saying it was good.

Table 4: Sharing of knowledge and experiences among employees

Knowledge sharing among employees	N	%
Very poor	5	8.6
Poor	2	3.4
Average	4	6.9
Good	25	43.1
Very good	22	37.9
Total	58	100.0

Source: Fieldwork. April, 2017.

d) *Relationship between Organisational Structures and Learning*

The relationship between organisational structures and organisational learning were determined by comparing the factors of the two concepts. Thus, employee participation, work standardisation, were compared against employee innovation, and the sharing of knowledge and work experiences among employees.

i. *Employee participation vs employee innovation*

The relationship between the participation of employees in decision making process, objectives

setting and their ability to innovate was measured. The likelihood ratio was ($\Lambda=0.006$) which is less than alpha ($\alpha=0.05$). This result shows the two are not independent and has a relation which is positive. The strength of this relation was measured by the Cramer's V, which was ($\phi_c=0.372$) and indicates a strong relation. This is shown in table 5 in the appendix section.

Table 5: Test result

Chi-Square Tests

Participation vs Innovation	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.029 ^a	4	.003
Likelihood Ratio	14.566	4	.006
Linear-by-Linear Association	7.269	1	.007
N of Valid Cases	58		

a. 5 cells (55.6%)^b have expected count less than 5. The minimum expected count is 1.03.

b. If greater than 20%, the Likelihood Ratio is used to determined correlation.

* Correlation is significant at the 0.05 level (2-tailed).

Source: Fieldwork. April, 2017.

Table 5: Measure of relationship strength

Symmetric Measures

Participation vs Innovation		Value	Approx. Sig.
Nominal by Nominal	Phi	.526	.003
	Cramer's V	.372	.003
N of Valid Cases		58	

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Source: Fieldwork. April, 2017.

ii. *Employee participation vs Knowledge sharing*

This measured the relationship between employee participation in decision making processes, objective setting and the knowledge and experience sharing among employees of the organisation.

The data is shown in table 6 and it reveals a strong positive significant correlation between the

employee participation and sharing of knowledge among themselves.

The result shows that the participation of employees affects the sharing of knowledge among employees which also reinforces employees' participation. Thus, as employees are given the opportunity to participate in decisions and objective

setting of their organisation, they are willing to share their knowledge and work experiences with their colleagues. This in turn enables the organisation to learn through shared experiences.

Table 6: Employee participation vs Knowledge sharing

Participation vs Knowledge sharing		Participation in decision making and objective setting	Sharing of knowledge
Spearman's rho	Correlation	1.000	.658**
	Coefficient		
	Sig. (2-tailed)	.	.000
	N	58	58
	Correlation	.658**	1.000
	Coefficient		
	Sig. (2-tailed)	.000	.
	N	58	58

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Fieldwork. April, 2017

iii. *Job standardisation/formalisation vs Employee innovation*

This measured the relationship between job standardisation and employee innovation in the

organisation. The test indicates a positive significant relationship between job standardisation and employee innovation. The strength however was a low or weak correlation.

Table 7

Standardisation vs Innovation		Formalisation	Innovation
Spearman's rho	Correlation Coefficient	1.000	.273
	Sig. (2-tailed)	.	.038
	N	58	58
	Correlation Coefficient	.273*	1.000
	Sig. (2-tailed)	.038	.
	N	58	58

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Fieldwork. April, 2017.

iv. *Job standardisation vs Knowledge sharing*

This measured the relationship of the standardisation of work activities and the sharing of knowledge and experience among employees of the organisation.

The test result showed no correlation between work standardisation and knowledge sharing among employees. Thus, formalisation as a structure does not influence learning through employees sharing knowledge and work experiences among themselves.

Table 8: Work standardisation vs Knowledge sharing

Standardisation vs Knowledge sharing		Formalisation Sharing of knowledge	
Spearman's rho	Correlation Coefficient	1.000	.093
	Formalisation	Sig. (2-tailed)	.486
	N	58	58
Spearman's rho	Correlation Coefficient	.093	1.000
	Sharing of knowledge	Sig. (2-tailed)	.486
	N	58	58

Qualitative Analysis

This section of the paper shows the management responses on how some managerial activities that were used as measures of organisational processes (benchmarking, organisational restructuring and consultation of experts) influence learning within the selected financial institutions.

e) Existence and practice of benchmarking

The management of both banks made the group aware that they engage in benchmarking. When they were asked about how they engage in it, these were the responses.

"we consider what is being practiced by the best institutions in the industry". Manager A

"we look up to first class bank to reach up to their level". Manager B

The above responses were given by managers from one bank.

The findings show that the financial institution identify other financial institutions that are exhibiting a higher level of performance, identify their practices and implement them to become market leaders as well or achieve a competitive advantage.

"we take data from the market and compare with what we offer so we can make decisions on how we can remain competitive". Manager C

This is not very different from what has been explained above, thus with this response, the management through their research in the industry find out the practices, services, products and strategies of competitors and more especially the high performing financial institutions and then compare with their strategies, practices to find out if what they possess are not effective and hence make decisions whether to employ those practices or modify them to become effective in the industry.

i. Learning benefits of benchmarking to the selected financial institutions

The management were asked about whether benchmarking is important or not and their responses were positive and to gain more understanding into the relation between benchmarking and learning, the researchers further asked the management how benchmarking has helped them in learning from other organisations.

These were the responses from the managers:

"it has made us increase our market sphere". Manager A.

This response shows that, through benchmarking, management have been able to reach a lot of people which is basically because of improvement in business operations such as providing of services. This statement hence supports Vassils report (2000) that 'benchmarking enables organisations to acquire information they need to improve their performance and also achieve some goals.

"it has helped this organization to adopt best practices". Management C.

This indicates that through benchmarking, management of the financial institution after gaining knowledge into the practices of financial institutions can identify and adopt the best and suited practices.

This affirms Vassils report (2000) that in benchmarking, organisations can learn and adopt practices in other organisations that could work or that are best to promote higher performance.

ii. Organizational restructuring and consultation of experts and Organisational learning

Organisational restructuring can be defined as reviewing and modifying some of the structures and business processes or operations. The management were also asked if they engage in restructuring. The answers derived were positive.

The management therefore were further asked about the reason(s) behind the restructuring and the following responses were acquired.

"to put the right people at the right place". Manager A

This shows that, to achieve set objectives, there is the need to ensure the execution of tasks and jobs by the appropriate people.

"to better place ourselves at the leading front in the industry". Manager C. This response shows that the financial sector restructure their operations, human resource to promote optimal performance and become market leaders.

Regarding consultation of experts, the managers indicated that they consult the services of experts on making changes in the organization. Some of the areas the consultation covers are, job grading and auditing, information technology and performance management, management and information systems, fraud and crime awareness and prevention.

In relation to our objectives, the management were asked about how the consultation has helped them in learning. Two managers from the two banks revealed that it has improved on their performance management skills, thus they are able to learn how to effectively assess and manage employees activities and performance for the purpose of attaining a higher level of overall organisational performance. The statements are as follows:

"It has improved on our performance management skills" Manager A

"It has enabled the institution learn how to efficiently conduct performance management" Manager B

One other reason behind how organisational restructuring has promoted learning was obtained from the last manager and it is established below as:

"learn new trends and schemes used by fraudsters to be able to fight against fraud" Manager C

Thus, through consulting experts on fraud activities, the management learn some of the techniques used by fraudsters as well as changes in their operations and this enables them to establish measures to help combat frauding activities, hence organisational learning.

IV. DISCUSSION AND CONCLUSION TO THE STUDY

To help in the achievement of the objectives, some measures were used for the organisational structures and processes and how they affect learning within the selected financial institutions.

On organisational structures, the existence of high level of formalisation, thus strict rules and regulations regarding how work should be carried out and the ability of the employees to have input in setting

of objectives depict a hypertext structure which involves a combination of bureaucratic and organistic structures as explained by (Nonaka and Takeuchi, 1995). These include high formalisation and high decentralisation respectively, thus the selected financial institutions are embedded with formal rules and regulations about work and employees are allowed to influence setting of objectives and making of decisions.

In relating these organisational structures to learning measures which are sharing of knowledge and experiences and employees innovation, a strong positive relationship was established between participation of employees in decision making and setting of objectives and employees innovation and knowledge sharing, thus the high level of employees involvement in decision making process and objectives setting, encourage them to bring on board new ways of doing things better and also share ideas and knowledge with their colleague and this confirms (Robbins, 1990) and (Maria and Martinez, 2011) argument that such structure promotes social interaction (thus sharing of knowledge and ideas) and acquisition of ideas, hence becoming innovative.

Concerning the high level of standardisation, thus strict rules concerning how work should be carried out and nature of communication among colleagues, it was related to employees innovation and the findings showed a positive but weak to moderate relationship, thus, it can be explained that, although there are strict rules concerning carrying out of tasks and relation among colleagues, employees are allowed to be innovative, because a clear understanding of the rules encourage them to be creative in performance of the tasks and this confirms a bureaucratic style of structure in organisations as established in the study.

In relating it to knowledge and experiences sharing, the study showed that there is no effect or relation between the highly formalised nature of the financial institutions and employees ability to share knowledge and experiences. This is more related to how communication process and interactions are governed by some principles within the financial sector.

This shows that, from the study, irrespective of the level of formalisation of activities, communication, thus sharing of ideas and knowledge is still high within the financial institutions and this confirms an organistic structure in the literature where social interaction is promoted.

On the organisational processes, the measures used were some managerial activities and this include benchmarking, consultation of experts and organisational restructuring. In relating these processes to learning, it was found that benchmarking as an activity promotes learning and this confirms Vassils report (2000) that 'benchmarking enables organisations to acquire information they need to improve their performance and also achieve some goals.

Concerning the restructuring of the organisation and consultation of experts, it was found that the management learn through those activities and this confirms the literature on organisational change that, organisational internal climate (thus what happens within the organisations) enhances the knowledge base of organisations.

This study therefore reveals to organisations that to help in gaining of competitiveness within the market sphere, learning cannot be left out and the process of learning is affected by some authority structures which include the level of formalisation and involvement of employees in decision making process.

Although there would be rules concerning how work should be carried out but employees should be encouraged to be innovative and allowed to have an input when decisions are being taken and objectives are being set as it encourages them to learn and bring something new to help promote organisational effectiveness.

Also, employees should be more encouraged to communicate effectively with others and this include their supervisors and colleagues and hence share their knowledge and experiences with them which promotes knowledge embeddedness. Management and colleagues should be receptive to new ideas from other workers as they work together for the achievement of organisational success.

On the managerial activities, the study also shows how important Human resource practises like benchmarking, organisational restructuring and consultation of experts are on organisational learning. These activities should not be overlooked especially in a competitive market sphere. Organisations need to learn from other organisations, restructure and consult technical people and hence gain knowledge to become effective.

This study would contribute to knowledge in business research and it is suggested that, further research should be carried out to ascertain other forms of structures and processes with the organisation and how they influence learning.

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Banking Interaction and Financial Stability: MENA Countries

By Dr. Nadia MANSOUR & Pr. Ezzeddine ZOUARI

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GJMBR-C Classification: JEL Code: F65



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Dr. Nadia MANSOUR ^α & Pr. Ezzeddine ZOUARI ^σ

Abstract- This paper represents the relationship between banking risk and financial stability using the indicator "z-score" and its two components: capitalization and profitability.

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I. INTRODUCTION

During the past decades, the progress of the financial system has created different types of activities and financial instruments increasingly diverse and complex. In this context, developments in the financial sector seem to have played a growing role in the configuration and sometimes the amplification of macroeconomic fluctuations.

Consequential concerns an "excessive" variability in the financial system has highlighted the need to put in place measures for prudential regulation, accounting, and risk measurement or monetary policy with the goal of consolidating the financial system and macroeconomic stability.

However, even though the various regulations accompanied by strong supervision aim to guarantee the risk management functions of banks as well as the liquidity management that continuously contribute to financial stability, the risks of instability can't be solved. In these cases, only the central banks can provide liquidity when necessary. Also, financial stability is a source of preoccupation internationally, because of financial crisis since the middle of the Second World War.

The application of prudential regulation standards requires a lot of effort on the part of banks, which must have sophisticated means for measuring credit, operational and Market risks, as well as owning the necessary capital to apply these standards. Hence poor risk management may be causing a problem of financial stability.

The latter corresponds to a reality bringing together both economic and financial issues. Each of these two aspects refers to the consideration of destabilizing events and their influence on the entire financial system.

Initially, financial stability had always been considered as a concept indicating an important

function within central banks as well as in public institutions. Indeed, it was only in 1994 that the Bank of England began to use this concept to designate the objectives to attain and which were destabilized by price stability or the efficiency of the Banking system's operation, Weller, (1999).

During the 1990s, the formulation of economic policy was based for the most part on the pursuit of maintaining financial solidity. Thus, a financial system is part of a zone of stability when it can facilitate without hindrance the performance of the economy while having the possibility to reduce problems, Schinasi, (2006). In other words, financial stability is the maintenance of confidence in the financial system.

Thus, to ensure the financial stability, the different actors of the system have a solid accompanied by proper operation and an exchange rate regime and performance concerning other economic actors, in particular, the state, households and non-financial enterprises. In this balance, credit institutions, alongside their traditional intermediation function and their growing involvement in capital markets, play an important role. There are also other financial institutions such as insurance companies, investment companies, and pension funds.

Also, it is still essential to take into account the behavior of the financial markets, especially the equity, and foreign exchange markets. The opening of the financial markets, which are at the origin of large international capital movements as well as significant volatility of the prices of the assets, is considered as a risk taking.

This situation brings us to the following questions: *What is the relationship between bank risk and financial stability? What is the impact of prudential regulation on financial stability?*

The problem developed is *the evaluation, firstly, of the relationship between banking risk and financial stability and, secondly, the impact of banking regulation on financial stability.*

II. LITERATURE FOUNDATIONS

"Financial stability refers to a bank's ability to withstand significant shocks and the resolution of macroeconomic imbalances, thereby reducing the probability of a break in the financial intermediation between savings and investment." BCEAO, (2006).

Financial stability is an important factor in the proper functioning of the economy. The main aims of this notion are towards economic development, and the assurance of high-quality intermediation between economic agents, through the channeling of financing flows efficiently towards the most growth-enhancing sectors. Indeed, the stability of financial institutions was the absence of tension that can lead to many economic crises whose effects are not limited to economic agents alone. In this context, financial stability requires two main conditions, Salameh (2013):

The institutions of the financial system are stable so that there is sufficient confidence to continue to fulfill their contractual obligations without necessarily having external assistance or interruption.

The main markets must be stable so that each actor can trade with confidence at prices reflecting the fundamental data on the market.

All of this shows that the definition of financial stability is not limited to banking stability alone, but affects the entire financial system since the financial stability of the banking sector is a factor in the soundness of all financial corporations.

In maintaining this stability, central banks provide not only identifying threats to the financial system while trying to reduce, but also protecting the system while recognizing that the instability of markets institutions can cause systemic risks. Central banks have the right to detect these risks.

a) *Determinants of Financial Stability*

There are many factors and can be classified into three categories:

- *Macro-economic conditions:* to maintain or restore financial stability, it is essential that macro-economic policies be enhanced with appropriate structures. When the economic environment is affected by difficulties, the banks suffer the consequences.

Indeed, stability depends on the specificities of a country's relationship with the outside world. When a state is highly dependent on foreign aid, it is exposed to significant risks, particularly as regards public finances, external financing or the performance of the private sector. However, this situation mainly affects developing countries or countries with fragile economic conditions.

- *Internal Financial Institutions and Markets Management Systems:* A stable financial system is always accompanied by an adequate institutional and regulatory framework whose components and functioning determine the potential risks that financial institutions face,

- *The effectiveness of the regulatory system and supervision of financial institutions:* When the institutional framework is efficient and, the financial system can adapt to different innovations and

changes in the environment, there will automatically be financial stability.

Thus, a financial system was considered stable when it can facilitate the efficient allocation of economic resource and financial processes; evaluates, and manages financial risks (Icard, 2007).

Also, one of the main channels of transmission of a financial crisis in the real economy is mainly the seizure of the intermediation activity. In this case, the banks stop granting new financing and no longer proceed to the renewal of credits that are maturing, a situation called by the economists "Credit Crunch."

In a "Credit Crunch," it is possible to highlight two types of mechanisms: it could be caused by a lack of banks' funds. When there is an economic and financial turnaround, the banks' capital level can be reduced by the losses. Prudential rules do not allow banks to expose themselves to risk if they do not have sufficient capital. Also, the "credit crunch" may be the consequence of a low level of liquidity.

In general terms, the financial system and the banking system represent, through their roles and their vocations, reliable indications of the health of an economy, while allowing investors and the various economic players to plan their actions in advance and effectively manage their capital flows. This situation reflects the importance of banking institutions in the economy as well as the interest granted by public authorities to these institutions.

Banking is a fundamental element of any economy, particularly in linking providers and investors. However, even in performing the role of financial intermediation, the activities of banks depend to the stability of all financial mechanisms. It is for this reason; the latter constitutes one of the highest priorities of the public authorities. Indeed, these authorities are in a position where they are forced to organize the banking sector through specific regulations, including "prudential banking regulations."

In case of a crisis, the financial markets are no longer able to function normally and, as a result, the banks can no longer refinance and stop providing loans. Therefore, the latter will be unable to finance productive activities; consumption will decline and subsequently curb economic growth.

Indeed, for a long time, the monetary authorities have sought ways to impose prudential constraints on banking activities to formulate not only the security but also the soundness of the banking system which is at the heart of the financial system.

b) *Financial stability and banking regulation*

Prudential regulation has continued to evolve through various provisions aimed at improving or eliminating old rules or introducing new standards. The financial system is experiencing developments posing

as many challenges for both credit institutions and regulators.

The various financial crises that have followed one another, as well as the recent global financial crisis, have led regulators, notably the Basel Committee, to review the Basel agreements. For example, the Basel III agreement which is intended to enhance the Basel II brought new regulations to strengthen the requirement for capital and liquidity of banks while aiming to weaken the leverage. However, financial instability, regardless of the level of policies, strongly impacts the smooth running of banking activities, including exposure to different banking risks.

But after more than 30 years of deregulation, the financial crisis of 2007 to 2009 completely changed the role of government and regulators. Knowing that during the 1960s, the theory of financial market is used to explain the range of government intervention. As a result, the weakness of a banking system can threaten financial stability at both the national and global levels. Then to ensure that solidity, several official bodies, the main ones being the Basel Committee on Banking Supervision, Bank of International Settlements, the International Monetary Fund and the World Bank have attempted to examine ways to strengthen financial stability world.

In this case, "financial regulation" is the set of public provisions intended to ensure the smooth running of the banking sector. Most of it is similar to regulations in other industries and relates to consumer protection through.

However, the financial system has some features such as a procyclical trend that triggers regular crises while seeking to reduce industry-specific regulations. In other words, financial instruction always tends to balance performance with risk.

The majority of financial markets were governed by a certain level of regulation put in place for various reasons (Heffernan, 2005) :

- *It's important to protect investors:* It is essential that investors know how to shoulder some of this responsibility. However, government guidelines are essential to ensure the capacities of financial companies to provide adequate financial information.
- *The high concentration of financial institutions in the market:* The financial system consists of several markets that have different characteristics: from the retail bank market to the global bond market. Thus, the competitive structure of each type varies considerably depending on its specificities.
- *The fight against illegal activities:* Actors who carry out fraudulent activities, tax evasion or money laundering.
- *The externalities:* These are the various measures implemented by the actors who feel undermined

financial stability. In the financial markets, crises often result in negative externalities.

c) *Financial stability and Business Model*

Business model analysis is essential for investors and supervisors.

Previously, supervisors focused on capital, liquidity and risk management. However, the recent financial crisis has shown the value of analyzing the "Business Model" of banks. This model generally describes how banks generate their profits and what are their channels of transmission. It thus goes beyond traditional risk and banking income indicators, allowing supervisors a better understanding of the sustainability of bank profits and stability (Calomiris and Kahn 1991, Huang and Ratnovski 2011).

Most recent studies that have taken into account the period of financial crisis provide mixed results regarding the impact of income diversification on risks and bank profits. Also, these studies analyze how the diversification of funding sources can affect the level of these two criteria.

Demirgüç-Kunt and Huizinga (2010) found a decrease in risk, associated with low levels of non-interest income and non-deposit funding. However, for most banks, an increase in interest-free income and non-deposit financing is related with strong banking instability.

Also, De Young and Torna (2013) showed that banks with high levels of interest-free income are more likely to go bankrupt during periods of crises.

According to Altunbas and al. (2011), the banks most dependent on wholesale financing were more exposed to the risk of bankruptcy during the crisis. In contrast, banks with a more diversified income structure have been more stable.

For Calomiris and Kahn (1991), wholesale financing can reduce bank risk through better monitoring of banks by sophisticated fund providers and better diversification of financing resources. In contrast, client deposits were revalued more slowly and, as a result, are relatively more stable, Shleifer and Vishny, (2010).

The results of the various theoretical studies suggest that the best-capitalized banks are more stable than other banks. Regarding economic importance, the capitalization of banks is one of the main determinants of bank stability. Indeed, a higher rate of asset growth makes banks significantly riskier; this corroborates with the results of Altunbas and al. (2011) and Demirgüç-Kunt and Huizinga (2010).

For the ratio of net credits / total assets, is an indicator to control the composition of bank assets. Freixas (2005) has argued that specialization in credit activities offers informational benefits, which can reduce the risk of bank failure.

Regarding the "net interest margin" variable, it provides a test of how incentives to engage in traditional banking activities could be a deterrent to the crisis (Ghosh, 2016). A lower net interest margin implies stronger incentives for traditional banks to look for alternative sources of revenue ("yield-seeking") and move to new business models. (Beck and al. (2010), Gambacorta and Marques-Ibanez, (2011)). As a result, an increase in this margin and the loan portfolio may reduce the level of bank risk.

In the study by Ghosh (2016), the size coefficient has a positive and statistically significant effect on Z-score, which is consistent with research on other banking financial systems, Beck and al. (2009) and suggests that large banks are more stable thanks to the low volatility of their returns. This positive relationship has an important implication for the current debate about the need to restrict the size of banks to protect the financial system from future crises, Adusei (2015). Indeed, the big banks were the source of the problems that caused significant damage to many economies around the world.

Köhler (2015) also showed that a large number of countries of characteristics likely to have an impact on the risk and return of the banks, as the overall macroeconomic environment.

$$Y_{it} = \alpha + \beta_1 * NNINC_{it} + \beta_2 * NONDEPOSIT_{it} + \beta_3 * B_{it} + \beta_4 * C_{it} + \varepsilon_{it} \quad (1)$$

With

NNINC: Interest-free income

NONDEPOSIT: Funds other than deposits

B: The matrix of control banking variables

C: The matrix of control variables by country

Table 1: Definition of variables

variables	Measures	Sources
NONDEPOSIT	Deposits and short-term funding / Total liabilities	Bankscope
NNINC	(1-abs (net interest income)) / (abs gross revenue)	Bankscope
CAR	Total equity / total assets	Bankscope
The OANS	Net loans / total assets	Bankscope
NIM	Net interest income / average earnings asset	Bankscope
GDPGR	Real GDP Growth	World Bank
GDPPPC	Real GDP per Capita	World Bank

We will use the Z-score to measure the banking risk and to overcome the shortcomings of the ratio method, Stiroh and Rumble, (2006), and Demirgüç-Kunt and Huizinga, (2010). The Z-score can be estimated by the probability of default represented by Roy (1952) and

III. METHODOLOGY

With the succession of financial crises, it is necessary to study the relationship between financial stability and banking risks by taking into account the effect of prudential regulations in macro terms, in the context of Business Model in the conventional banks in the MENA zone between 2003 and 2014. Also, it is important to study the relationship between the size of banks and financial stability. This relation represents the object of this study.

The study would be based on three models to detect the relationship between Z-score and financial stability and the relationship between the level of capitalization and bank profitability and financial stability.

a) Presentation of the model and definition of the variables

With the succession of crises, the question arises about the relationship between banking risks and financial stability in this region.

Also, we will represent the following models inspired by Köhler's study (2015) and which take the following forms:

developed by Goyeau and Tarazi (1992). This last is the probability that losses exceed equity (Roy, 1952, Boyd and Graham, 1988).

This ratio could be written as:

$$Probability\ of\ default = prob(\pi < -E)$$

In this study, we will present "z-score" following the literature studies conducted by Stiroh (2004a, b), and Stiroh and Rumble (2006):

$$Z - score_{it} = \left(\frac{(ROA_{it} + CAR_{it})}{SDROA_{ip}} \right) \quad (2)$$

With:

ROA_{it} : Economic profitability

CAR_{it} : The ratio of total assets / Equity

$SDROA_{ip}$: Standard deviation of ROA.

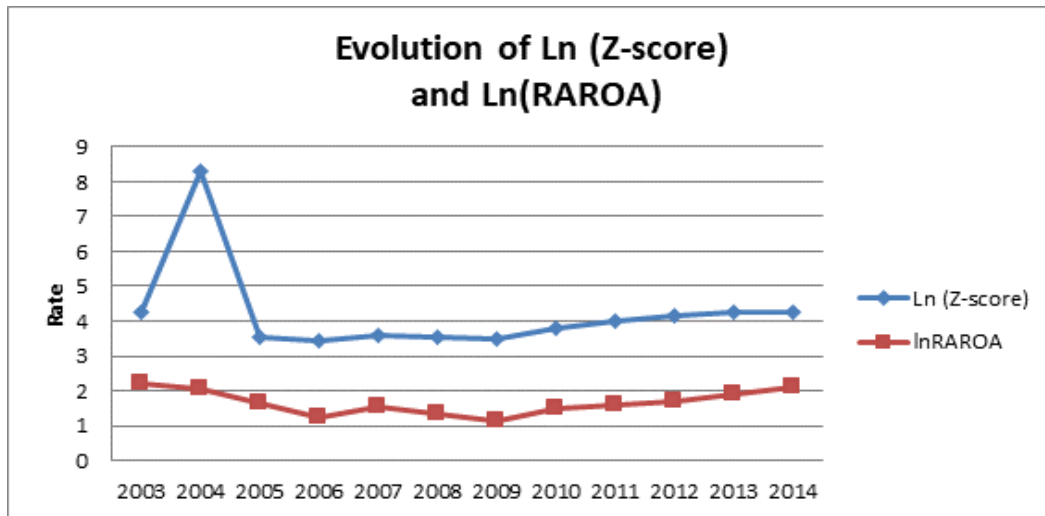
In this same context, and to get a better idea about the components of Z-score and their relationships with dangling dice variables, we use the following ratios:

$$RAROA_{it} = \frac{ROA_{it}}{SDROA_{ip}} \quad (3)$$

$$RACAR_{it} = \frac{CAR_{it}}{SDROA_{ip}} \quad (4)$$

At this level, we would like to mention that a Skewness-Kurtosis normality test had performed on the Z-score, RAROA and RACAR variables and that the latter do not follow the normal distribution, hence the integration of natural logarithms. For these three variables in the suite of econometric applications, Laeven and Levine, (2009) and Houston et al., (2010).

To get a better idea about the relationship between Ln (Z-score) and its two components, we will draw the following two graphs:

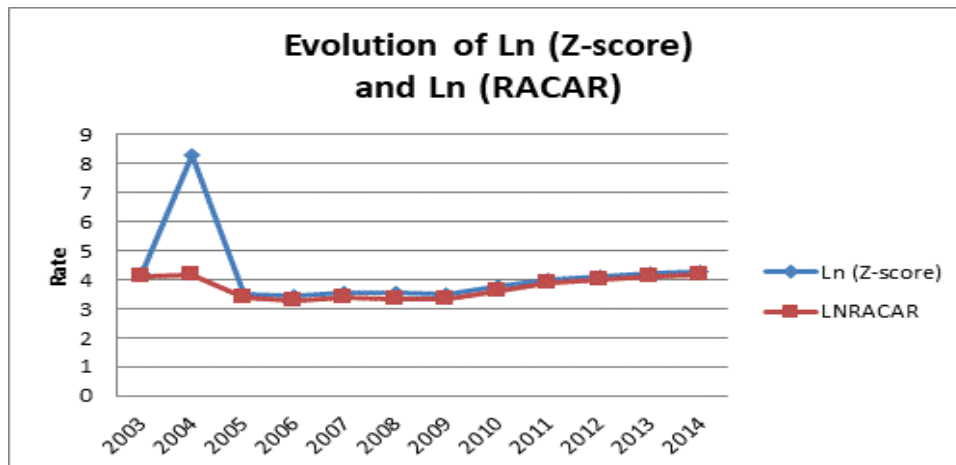


Source: The author

Figure 1: Evolution of Ln (Z-score) and Ln(RAROA) in the MENA zone between 2003 and 2014

According to this graph, we can notice that the variable Ln (Z-score) progressed between 2003 and 2004 before falling from 2005 from 8.29731255 to 3.5212993. This peak was strongly correlated with the Iraq War, which began in 2002, and particularly affected the countries of the Middle East. Also, the risk of bank

failure has experienced a second increase from 2009, which is related, on the one hand, with the subprime crisis and, on the other hand, with the geopolitical troubles in the MENA zone. Concerning the variable Ln (RAROA), it began to progress since 2009 following the same direction of evolution of Ln (Z-score).



Source: The author

Figure 2: Evolution of Ln (Z-score) and LNRACAR in the in the MENA zone between 2003 and 2014

From this graph, we can notice that, apart from the peak of 2004, the variable Ln (RACAR) followed the same direction of evolution of Ln (Z-score). In fact, since 2005, both variables have achieved almost the same values. This result means that in recent years, the level of capitalization is stable in banks in the MENA zone.

b) The hypotheses

The purpose is to determine the effect of financial stability on bank risks. Therefore, we will rely on the calculation of "z-score" as an indicator of bank failure in the framework of "Business Model."

The selection is focused exclusively on conventional banks in the MENA region. We have a sample of 146 banks for which we hold all the financial information necessary to conduct the empirical analysis.

Our sample will cover 146 conventional banks in 17 MENA countries (Algeria, Saudi Arabia, Bahrain, Djibouti, Egypt, United Arab Emirates, Jordan, Kuwait, Lebanon, Malta, Morocco, Oman, Palestine, Qatar, Syria, Tunisia, Yemen) over the period 2003-2014.

□ The relationship between size and financial stability
Kôhler (2015): He finds a negative rapport between "Z-Score" and the size of the bank. This situation means that big banks are less stable. This observation was based on the results of the subprime crisis, for which the big banks were the least stable.

H1: An increase in the size of the bank is causing a risk of bank insolvency.

□ The relationship between capital ratio and financial stability

Zhong (2007): The level of capital is a determining factor in the bank's ability to withstand operational losses. Adequate bank capital can be used to reduce bank risk by acting as a buffer against losses, providing easier access to financial markets and limiting risk-taking. So, the second hypothesis of the research is this:

H2: An increase in the capital ratio will decrease the probability of the risk of bank failure.

IV. EMPIRICAL RESULTS

We present the significant statistics followed by the models constructed concerning the regression of the variables defined above on conventional banks of the MENA zone with the empirical results obtained and their interpretations.

a) Descriptive analysis of variables and econometric tests

i. Descriptive analysis

This study will expose the descriptive analysis of the different variables. The table below gives the mean, the standard deviation, the maximum and the minimum of the variables studied during the study of the previously defined models (see appendix 1).

Indeed, we note from the table below, the disparity of the average values of the explanatory variables and their standard deviations. These two variables suggest that the sample structure is not homogeneous and that additional tests are required to select the appropriate estimator.

ii. Econometric tests

We would be based on econometric tests following: the multicollinearity, the stationarity, the heteroscedasticity, the homogeneity and, the Hausman test.

a. Multicollinearity tests

According to Bourbonnais (2009), to decide on a problem of collinearity between the independent variables included in a regression model, it is necessary that the correlation coefficient exceeds the order of 0.7. Examination of the correlation matrix and the VIF test (see appendix 2) highlights the absence of a multicollinearity problem.

b. Stationarity test

To do this, we would be based on the tests of Dickey- Augmented Float (ADF) and Phillips-Perron (PP).

Table 2: ADF & PP Tests

variables	ADF		PP	
	In level	In difference	In level	In difference
Ln (Z-score)	0.0295 **		0.0295 **	
GDPGR	0.0127 ** (With trend)		0.0127 ** (With trend)	
NNINC	0.0538 * (With trend)		0.0529 * (With trend)	
Ln (RAROA)	0.0718 *			0033 **
Ln (RACAR)		0.0592 *		0017 **
GDPPC	0.02163 **		0.02163 **	
NONDEPOSIT		0.0284 ** (With trend)		0.0703 * (With trend)
Size		0.0763 *		0.08099 *
CAR	0.0244 **		0.0220 **	
LOANS		0.0674 *		0.0990 * (With trend)
NIM	0.0293 ** (With variation)			0.0888 * (With trend)

*** Significant at 1%, ** significant at 5%, * significant at 10%

The results show the stationarity of the variables in level for the ADF & PP tests and other were difference stationery.

c. Testing for heteroscedasticity

This test is to examine the variance of the standardized residuals is constant or homoscedasticity, Evrard and al. (2003).

Table 3: Heteroscedasticity test

Model 1 (Ln Z-score)	Model 2 (Ln RAROA)	Model 3 (Ln RACAR)
Chi2 = 4.13	Chi 2 = 46.83	Chi2 = 0.04
Prob > chi2 = 0.0420	Prob > chi2 = 0.000	Prob > chi2 = 0.840
Presence of a problem of heteroscedasticity	Presence of a problem of heteroscedasticity	Absence of heteroscedasticity problem

d. Specification and homogeneity tests

It is a question of checking whether the specification is homogeneous or heterogeneous of the data generating process.

Table 4: Homogeneity test

Model 1 (Ln Z-score)	Model 2 (Ln RAROA)	Model 3 (Ln RACAR)
F = 4.72	F = 4.01	F = 5.24
P value = 0.0 00 0	P value = 0.000	P value = 0. 000

e. Hausman test

The Hausman test is a specification test that determines whether the coefficients of the two estimates (fixed and random) are statistically different.

Table 5: Hausman test

	Model 1 (Ln Z-score)	Model 2 (Ln RAOA)	Model 3 (Ln RACAR)
Effect test	57.33	15.51	64.76
Cross section Khi-two	0.0000	0.03	0.0000
	To hold the model in effect fixed s with the control Robust	To hold the model in effect fixed s with the control Robust	To remember the fixed effect model

f. Analysis of results and interpretation

The estimation results of the fixed effects model using the Ordinary Least Squares method are in the following table:

Table 6: Results of estimates

Variables	Model 1 : Ln Z-score			Model 2 : Ln RAROA			Model 3 : Ln RACAR		
	Coefficient	T-Statistic	P-Value	Coefficient	T-Statistic	P-Value	Coefficient	T-Statistic	P-Value
NONDEPOSIT	1.600113	1.94	0.055*	0.6740837	0.60	0.546	1.603194	2.55	0.011**
NNINC	-0.001328	-0.48	0.633	-0.0005733	-0.16	0.874	0.0002497	0.13	0.896
CAR	0.0213014	2.78	0.006***	0.0026515	0.26	0.792	0.0264377	4.60	0.000***
SIZE	0.3691307	2.78	0.006***	0.4325939	2.64	0.009***	0.4459224	5.02	0.000***
LOANS	1.970601	2.26	0.025**	0.4918528	0.47	0.637	1.992006	3.99	0.000***
NIM	-0.026526	-0.35	0.726	0.1871667	1.77	0.079*	-0.0355441	-0.69	0.487
GDPGR	0.0125505	1.16	0.248	0.0360702	2.49	0.014**	0.0113722	1.30	0.194
GDPPC	-5.99e-07	-0.07	0.942	-5.12e-06	-0.58	0.560	-4.96e-06	-0.77	0.439
Constante	-1.971046	-1.48	0.140	-3.516106	-2.16	0.033**	-2.652607	-2.88	0.004***
F(8,141) = 3.64				F(8,141) =2.72			F (8,1048) =8.86		
P value = 0.0007				P value =0.0082			P value =0.0000		
Model of OLS (fixed effect)	With command	Robust		Model of OLS (fixed effect)	With command	Robust	Model of OLS (fixed effect)		

*** Significant at 1%, ** significant at 5%, * significant at 10%

- Model 1 (Ln Z-score)

We note a significantly positive relationship between the NONDEPOSIT ratio and "Ln Z-score". Indeed, this result reflects a high volatility of income in banks in the MENA zone, contrary to the findings of Calomiris and Kahn (1991). This situation calls for better monitoring of banks by financiers as well as better diversification of funding sources.

Also, the capital ratio had positively related to the "Ln Z-score." This result means that this variable is among the most important determinants of banks' financial stability in our sample. Any increase in this ratio will improve the level of solidity of the bank. This result corroborates with the work of Köhler (2015).

For the variable Size, it had positively related with "Ln Z-score." This result means that big banks are generally more stable. They have more diversified portfolios than small banks.

The variable "Loans" had positively related in the regression with "Ln Z-score," which indicates that banks that are more focused on lending activities are more stable. Freixas (2005) argues that specialization in a specific type of credit offers informational benefits, which can reduce the risk of bank default.

- Model 2 (Ln RAROA)

At the level of this study, we included the variable "NIM" because banks tend to take excessive risks to restore their returns if their interest margin is low. This variable is positively related to the dependent variable. Banks, whose net interest margin is higher, are also more stable and more profitable.

Also, by introducing the macroeconomic environment control variable "GDPGR" which reflects the growth rate by country, we noticed that it is positively related to "Ln RAROA." This result confirms Kohler's (2015) findings that banks in countries with higher levels of economic development are more profitable than other banks.

Regarding the size variable, it was positively related to the variable "Ln RAROA," which means that large banks are generally more profitable.

- For model 3 (Ln RACAR)

The capital ratio is positively related to "Ln RACAR." Riskier banks tend to decrease the level of this ratio. This result corroborates with the findings of Köhler (2015).

Also, we note a significantly positive relationship between the NONDEPOSIT ratio and "Ln RACAR." Indeed, this result reflects significant volatility of incomes in banks in the MENA zone, contrary to the findings of Köhler (2015). This situation requires a better monitoring of the level of capitalization of banks by the financial managers as well as a better diversification of the sources of financing.

Moreover, the variable "LOANS" was positively related to the dependent variable at the level of this regression. This result means that banks with a higher ratio are better capitalized than other banks.

Regarding the size variable, it had positively related to the variable "Ln RACAR." Indeed, large banks rely on high capital ratios to reduce the risk of bank failure. This finding invalidates the results of Köhler (2015). This result was explained by the difference between the MENA and German banking systems, in which the big banks are less stable.

In the three previous models, we found the significance of the variable size, from which it is essential to test the evolution of the variables "Ln Z-score," "Ln RAROA," and "Ln RACAR" for small and large banks. To do this, we will use the variable "Ln (total assets)" by the work of Bourgain and al. (2012) that a bank was considered big if its total assets are superior to \$ 10 thousand. Otherwise, it is a small bank. As a result, 40 banks in the sample are considered large and, 106 banks are considered small banks.

The results of the estimate are presented in the following table:

Table 7: Results of the estimates of the 3 models for large and small banks

The variables	Big Banks			Small Banks		
	"Ln Z-score"	"Ln RAROA"	"Ln RACAR"	"Ln Z-score"	"Ln RAROA"	"Ln RACAR"
NONDEPOSIT	0331 (1.212228)	0986 (-0.0375224)	0215 (1.592371)	0.08 0 * (1.795376)	0603 (-0.311907)	0096 * (1.745977)
NNINC	0116 (-0.0123064)	0796 (0.0033991)	0592 (0.0037031)	0554 (-0.0017267)	0086 * (-0.0050844)	0.656 (-0.0011611)
CAR	0019 ** (0.0343446)	0863 (0.0044145)	0000 *** (0.0539345)	0.06 0 * (0.12962)	0340 (-0.0065317)	0031 ** (0.0150175)
LOANS	0659 (0.461685)	0990 (0.018307)	0412 (0.8822956)	0004 *** (2.962416)	0144 (0.7210746)	0004 *** (2.970298)
NIM	0.620 (-0.0659144)	0284 (0.287042)	0.866 (-0.0228532)	0332 (-0.080774)	0003 *** (0.1693388)	0245 (-0.0899614)
GDPGR	0508 (0.0084499)	0.03 0 ** (0.0284865)	0.701 (0.0050372)	0999 (0.0000176)	0140 (0.0202857)	0899 (-0.0023805)
GDPPC	0002 *** (0.0000223)	0051 * (0.0000189)	0001 *** (0.0000239)	0456 (6.35e-06)	0439 (4.71e-06)	0.650 (4.36e-06)
Constant	0529 (0.8514391)	0811 (0.6279075)	0642 (0.6475084)	0482 (0.7608145)	0350 (0.5747028)	0474 (0.756912)
	F (7.384) = 2.72	F (7.39) = 2.68	F (7.385) = 3.10	F (7.101) = 2.71	Khi2 (7) = 29.67	F (7.101) = 2.81
P value	0.0092	0.0161	0.0035	0.0128	0.0001	0.0102
The estimation method	MCO (Fixed effects)	MCO (Fixed effects with Robust command)	MCO (Fixed effects)	MCO (Fixed effects with Robust command)	MCG	MCO (Fixed effects with Robust command)

*** Significant at 1%, ** significant at 5%, * significant at 10%

Based on the above estimates, we note a significantly positive relationship between the NONDEPOSIT ratio and the "Ln Z-SCORE" and "Ln RACAR" variables for small banks. This result reflects significant volatility of income in small banks in MENA. This is explained by the difficulties encountered by these banks to access large and less risky projects, which invalidates the findings of Köhler (2015). This situation requires a better monitoring of the level of capitalization of these banks as well as a better diversification of the sources of financing.

Concerning the variable NNINC, it was negatively associated with "Ln RAROA" in the small banks of the MENA zone. This result shows that the structure of banks' income is decisive in banking stability. Indeed, the negative coefficient for this variable means those smaller banks are riskier with a less diversified income structure.

In this context, several studies have analyzed the impact of the income structure on banking stability during a financial crisis. Altunbas and al. (2011) have confirmed that banks with good income diversification are less likely to encounter difficulties during periods of crisis. As a result, small banks in the MENA zone must try to diversify their revenue structure to minimize the likelihood of bank failure risks in times of crisis.

For the capital ratio, it was positively related to "Ln Z-SCORE" and "Ln RACAR" for small and large banks in MENA. This result confirms the findings of Köhler (2015) in his Study on German banks. This result means that banks in the MENA region use capital ratios that are high enough to cope with the risks.

Also, the LOANS variable (Net Credits / Total Assets) was positively related to "Ln Z-SCORE" and "Ln RACAR" in small banks. This result means that small banks in the MENA zone generally focus on granting credit to improve their stability. This result confirms the findings of Köhler (2015). Freixas (2005) has ensured that the focus on credit agreement can be a source of informational advantage and, therefore, it can reduce the probability of the risk of bank failure.

The variable NIM (net interest margin) is positively related to "Ln RAROA" of small banks. By Köhler's (2015) results, they try to increase their net interest margin to improve their stability.

Also, by introducing the GDPGR macroeconomic environment variable that reflects the growth rate by country, we have noticed that it is positively related to the "Ln RAROA" of the big banks. This result means that an increase in this ratio was reflected in an improvement in the profitability of the large banks in the MENA zone.

Also, the "GDPPC" rate was positively related to the three dependent variables for the large banks in the MENA zone. This result confirms the findings of Köhler (2015). This means that the major banks of the most economically developed countries are more profitable and more capitalized since real GDP per capita is an indicator of the wealth of countries.

b) Cross-sectional regression

To better refine the results, under a technical analysis of the cross-section was carried out as above presented the following model based on the work of Köhler (2015) takes shape following:

$$Y_i = \alpha + \beta_1 * \overline{NNINC}_i + \beta_2 * \overline{NONDEPOSIT}_i + \beta_3 * \overline{B}_i + \beta_4 * \overline{C}_i + \gamma_t + \varepsilon_i$$

With:

Y_i : The standard deviation of ROA (SDROA) of banki between 2003-2014

\overline{NNINC}_i : NNINC average

$\overline{NONDEPOSIT}_i$: NONDEPOSIT average

\overline{B}_i : The average matrix of control banking variables

\overline{C}_i : The average matrix of control variables by country

i. *Descriptive analysis of the variables*

The table below gives the average, the standard deviation, the maximum and the minimum of the

variables studied during the study of the previously defined model.

Table 8: Descriptive statistics of variables

variables	Average	standard deviation	Minimum	Maximum
SDROA	1.215933	4.125733	0.048211	45.95497
NONDEPOSIT	0.8994124	0.1440236	0.0092897	1.093904
NNINC	-60.50845	17.88776	-97.96267	7.604923
NIM	3.375774	5.005361	-2.18	61.06
LOANS	1.537404	13.37402	0.0083532	160.8953
CAR	21.71052	10.79891	7.943333	78.08
SIZE	7.939817	1.803596	2.193664	14.62996
GDPPC	16672.43	17341.39	1099.824	71053.23
GDPGR	4.915289	1.859248	1.679477	12.55121

ii. *Multicollinearity and heteroscedasticity tests (Appendix 3)*

We performed the VIF test, which allowed us to confirm the result since the average value of VIF is $1.57 < 3$.

The Chi-Square value of the heteroscedasticity test is 132.09 with a significance level of 0.000 below the critical threshold of 5%. In this case, use the Ordinary Least Squares (OLS) method with the Robust command to correct this problem.

iii. *Analysis of results and interpretation of model estimation*

The results of the estimation of the model in the following table:

Table 9: Results of the model estimate

Variables	Coefficient	T-Statistic	P-Value
NONDEPOSIT	-1.150602	-0.93	0.353
NNINC	0.0386216	2.88	0.005 ***
CAR	0.04809112	2.80	0.006 ***
SIZE	-0.073868	-0.88	0.378
NIM	-0.0132922	-0.17	0.865
LOANS	0.4799516	1.09	0.279
GDPGR	-0.0056509	-0.12	0.906
GDPPC	4.02e -06	0.62	0.538
Constant	4.730183	1.96	0.052
F (8.132) = 2.79			
P-value = 0.041			

*** Significant at 1%, ** significant at 5%, * significant at 10%

The positive relationship between SDROA and NNINC shows the importance of the income structure as a determinant of bank stability. This result means that an increase in the volatility of banking income will increase the level of risk. This result is in line with the findings of Stiroh (2004 a,b) and DeYoung and Roland (2001). Indeed, the enrichment of product and an increase in the share of interest-free income will permit banks to reduce their insolvency risk (Stiroh, 2004b). This result corroborates with recent studies (Altunbas and al. 2011; De Young and Torna, 2013). These authors showed that banks with a diversified income structure were significantly less likely to be distressed during the crisis.

Also, the positive relationship between the ratio of capital and SDROA indicates that an increase in capitalization was associated with a lower level of risk. This result confirms the findings of Blum (1999).

The MENA region have partially weathered the global crisis, but with rhythms different growth and a level of recovery which varies from one country to another, depending on the initial conditions and the intensity of the impacts on which the global financial crisis has affected this region.

However, the area still faces a climate of uncertainty, because of the "Arab Spring" which weighs on the short-term macroeconomic prospects of some countries such as Tunisia and Egypt (World Bank, 2016).

As a result, the results show the contagion effect of financial crises around the world and justify the overriding importance given by the monetary authorities to introduce early warnings to avoid problems of instability.

V. CONCLUSION

From a macro-prudential point of view, financial stability depends on the situation of the banks, as a failure in financial institutions poses a significant threat to financial solidity.

In this context, we have tried throughout to analyze the impact of the "Business Model" on financial stability in a sample of 146 conventional banks in MENA countries between 2003-2014.

The previous results showed that banks with a poorly diversified income structure were significantly more likely to be distressed during a period of crisis and small banks will try to increase this margin to improve their stability.

For the macroeconomic environment control variables there are important of economic development of MENA countries on banking stability.

The cross-sectional regression over the entire sample shows that an increase in the volatility of banking income will increase the level of risk.

To conclude, capitalization is the most determining factor in the Z-score variable at the banks of the MENA zone.

This empirical analysis allows us to show that the major banks of the most economically developed countries are more stable. And for smaller banks, the significant volatility of revenues with a little diversified structure of these, make these banks less stable.

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APPENDIX

Appendix 1: Descriptive statistics

Table 1: Descriptive statistics

Variables	Moyenne	Écart type	Minimum	Maximum
Ln (Z-score)	3.297863	1.254814	-1.482556	10.33783
Ln(RAROA)	0.9760647	1.545632	-6.579973	8.443391
Ln (RACAR)	3.077297	1.40935	-3.131126	10.1748
NONDEPOSIT	0.8983817	0.1589657	0	1.289135
NNINC	-61.16963	25.77364	-296.2408	239.65
NIM	3.169965	4.944557	-3.88	156.06
LOANS	0.9717784	12.55295	0	419.301
CAR	20.75376	14.50058	-13.1	285.4
SIZE	8.003754	1.764696	1.8453	14.97227
GDPGPPC	16699.14	18100.23	607.9158	96732.41
GDPGR	4.920161	3.860769	-15.08839	26.17025

Appendix 2: Matrix correlate

.correlate CAR NNINC NONDeposit Loans NIM Size GDPpergrowth GDPpercapita (obs=1205)

	CAR	NNINC	NONDeposit	Loans	NIM	Size	GDPper~h	GDPper~a
CAR	1.0000							
NNINC	0.0254	1.0000						
NONDeposit	0.0329	-0.1851	1.0000					
Loans	-0.2139	-0.2260	0.1790	1.0000				
NIM	0.0967	-0.2994	0.1518	0.3137	1.0000			
Size	-0.3416	-0.1930	0.0120	0.3374	0.0395	1.0000		
GDPpergrowth	-0.0276	0.0236	0.0027	0.0480	-0.0462	0.0461	1.0000	
GDPpercapita	-0.0252	-0.0078	-0.0148	0.4088	-0.0532	0.3160	0.2549	1.0000

Appendix 3: Model of cross-section

• Multicollinearity test

.correlate NNINC NONDeposit CARTotalregulatorycapitalrat SizeIntotalassets NIM Loans GDPpergrowth GDPpercapita (obs=141)

	NNINC	NONDep~t	CARTot~t	SizeInt~s	NIM	Loans	GDPper~h	GDPpercapita
NNINC	1.0000							
NONDeposit	-0.2755	1.0000						
CARTotalre~t	0.3051	-0.0197	1.0000					
SizeIntota~s	-0.3483	0.0164	-0.4803	1.0000				
NIM	-0.4105	0.1532	0.0213	0.0527	1.0000			
Loans	-0.3912	0.2022	-0.1943	0.3410	0.3269	1.0000		
GDPpergrowth	-0.1017	0.0413	-0.2487	0.2750	-0.0472	0.2061	1.0000	
GDPpercapita	-0.0630	-0.0186	-0.0087	0.2639	0.0167	0.4243	0.5906	1.0000



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Connecting Instagram-New Age Social Learning Tool for Engaging Students

By Dr(Hc). D M Arvind Mallik

Abstract- Individual innovations and Social Media have changed the socialization experience of our 21st-century students. Any instructor today has a chance to utilize Social Media into educating viably while getting to its different highlights and Technology. Substitutes may apply online networking to stay aware of their companions, to remain in the know regarding news and recent developments, to top off extra time, to discover engaging substance, and to impart insights. In this way, the notoriety of the online life among understudies can be utilized as a device in dialect instructing. One of the world's most mainstream web-based life is Instagram. It is an informal community that empowers its clients to take pictures and recordings and offer them freely or secretly on the application, and also through an assortment of other interpersonal organization, for example, Facebook and Twitter. Understanding Instagram, an online Social application, is winding up progressively famous as a business and specialized instrument. Use of Social Media in training is driving from the front; way course content have been modified and found develop to change in accordance with the new ways of learning which have turned out to be viable device for imparting subjects contrastingly chiefly Generation Z.

Keywords: education, technology, engagement, learning, social media, instagram.

GJMBR-C Classification: JEL Code: L82



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Abstract- Individual innovations and Social Media have changed the socialization experience of our 21st-century students. Any instructor today has a chance to utilize Social Media into educating viably while getting to its different highlights and Technology. Substitutes may apply online networking to stay aware of their companions, to remain in the know regarding news and recent developments, to top off extra time, to discover engaging substance, and to impart insights. In this way, the notoriety of the online life among understudies can be utilized as a device in dialect instructing. One of the world's most mainstream web-based life is Instagram. It is an informal community that empowers its clients to take pictures and recordings and offer them freely or secretly on the application, and also through an assortment of other interpersonal organization, for example, Facebook and Twitter. Understanding Instagram, an online Social application, is winding up progressively famous as a business and specialized instrument. Use of Social Media in training is driving from the front; way course content have been modified and found develop to change in accordance with the new ways of learning which have turned out to be viable device for imparting subjects contrastingly chiefly Generation Z. By utilizing Instagram, instructors can offer their own subjects to create classroom exercises inventively. Considering the positive impact on the way students to learn subjects innovatively. This conceptual paper will give Firsthand information on creating an interest in utilizing Instagram for interfacing Students commitment and offer a rundown of exercises for which Instagram can be utilized effectively.

Keywords: education, technology, engagement, learning, social media, instagram.

I. INTRODUCTION

The Internet has changed the manner in which we express, question about, and streamlines the entrance individuals need to learning. Utilizing innovation is not anymore a choice; the present students must use their entrance and wind up capable with the most recent apparatuses. It increases current standards on the strategies used connect with Social Media, to hold, and apply enter ideas in a worldwide economy. As indicated by McGraw-Hill, President of Higher Education, Brian Kibby, "Concentrate adequately – and with the correct kind of innovation – is extraordinary compared to other approaches to guarantee that understudies prevail in class; in any case, the center is the key!" (Belardi, 2013). The quick development of innovation encourages the introduction of fast-growing online life instruments that are

progressively being utilized by understudies in social and scholastic settings. In the scholarly community, long range informal communication destinations (SNS) are esteemed as important in dialect learning as their locale focused plan underpins the scattering of true dialect, and empower connections in the classrooms. As understudies are prepared for mechanical changes in learning (Manca and Ranieri, 2013), it is time that Higher Education (HE) establishments saddle their capability to more readily serve the graduates imaginative needs (Davis III, Deil-Amen, Rios-Aguilar, and González Canché, 2015). At present, Facebook, Twitter, and Instagram are prevalent types of SNS with a high rate of college graduate's demography (Shafie, Yaacob, and Singh, 2016); can be utilized as portable learning apparatuses to decidedly affect dialect learning. Socialization, cerebrum science, and virtual personalities are only a couple of precedents of how students are impacted by innovation. Lamentably, current models of training can disregard these progressions and in this manner overlook key bits of 21st-century character; our understudies presently have various characters that are impacted by close to home innovation utilize.

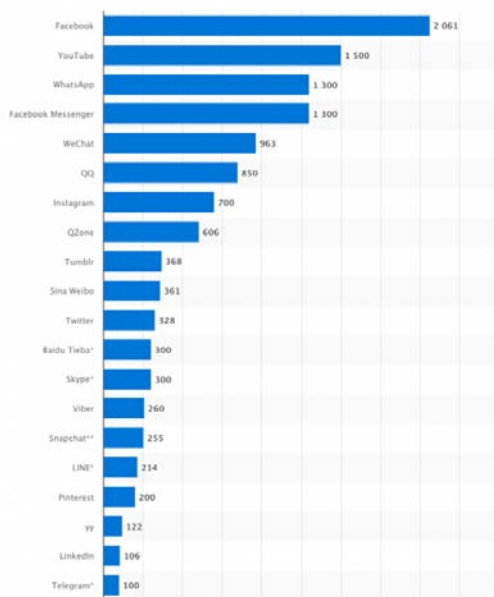
II. A SHIFT FROM TRADITIONAL

Traditional Marketing strategies have encouraged one-way correspondence; be that as it may, web-based social networking gives associations the chance to participate in two-route interchanges with their gatherings of people. Concerning correspondence, web-based life can "*encourage discourse among gatherings that is wouldn't effectively be in discussion with one another present understudies, imminent understudies, graduated class, guardians, and companions of the school*" (Bednar, 2013, p. 23). Before the presentation of web based life, advanced education foundations depended principally on sites as an essential domain for commitment among establishments and their publics because of the intelligent idea of the web (Kang and Norton, 2006). Research that analyzes these college sites gives a comprehension to the effect of the Internet as methods for exchange and correspondence among colleges and their publics, because of site's comparative reason to online networking: to enable clients to remain associated and get.

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III. SOCIAL MEDIA LEARNING

Social learning applies the convenience of online life to draw in students. Probably the most generally utilized internet-based life applications can be coordinated into the ground or online classrooms to advance accomplishment. By applying the accompanying instruments in center learning zones, teachers can gain by clients' normal propensities with these apparatuses. (Ali J. Al-Kandari, Ahmed A. Al-Hunaiyyan and Rana Al-Hajri, 2016). Graduates are agreeable in a dynamic, advanced, and social world. Their desires will grasp them extensive variety of consistently changing advancements accessible for their online instruction, and, in the classroom. The clever innovation of this decade is not just expect the utilization of web-based life, they search it out! to abstain from utilizing innovation for advances presence, teachers need to wind up as shrewd as their understudies. By applying a model of social learning, instructors can use new and internet based life in their classrooms with six of the biggest comprehensively used web based life apparatuses: Facebook, Pinterest, Instagram, Blogs, Twitter, and Evernote. This gathering of the most acclaimed relational associations generally masterminded by Statista gives a sensible photograph of the number of dynamic customers (in millions) with Facebook with 2.2 billion active registered users controlling unique authority among social media followed by YouTube presently ricochets to second place with 1.5 billion powerful customers. Facebook Messenger and WhatsApp take after behind in third and fourth place.



Source- Smart Insights, Global social media research summary 2018, Dave Chaffey

IV. SCOPE OF INSTAGRAM

Instagram is a mobile, desktop, and Internet-based photo-sharing application and service that allows users to share pictures and videos either publicly, or privately to pre-approved followers. It was created by Kevin Systrom and Mike Krieger, and launched in October 2010 as a free mobile app exclusively for the iOS operating system. A version for Android devices was released two years later, in April 2012, followed by a feature-limited website interface in November 2012, and apps for Windows 10 Mobile and Windows 10 in April 2016 and October 2016 respectively.

Since that time, the number of individuals utilized Instagram expanded quickly. From the Instagram, measurement demonstrated that it has pulled in excess of 150 million dynamic clients, with a normal of 55 million photographs transferred by them every day, and in excess of 16 billion photographs shared up until this point (Instagram 2013). Until further notice, Instagram took numerous capacities: make accounts, post content (pictures or 15-second recordings), apply channels, include inscriptions, label clients, include areas, include hashtags, similar to content, include remarks, peruse different records, check a feed created by pursued records, and investigate (look for) hashtag/clients (Ali:2014). As a rule, Instagram has particular highlights which are normally utilized by the client and the highlights are-

1. Instagram profile Interface: This part shows data about client profiles. It incorporates history, round profile photograph, number of posts, and clients 'supporter/following tally. The "+ Follow" alternative licenses clients to pursue different clients and stay refreshed on last's posted substance.
2. Profile Content: It gives watchers to look down the profile. Watchers may see all profile photographs seem together. For a more intensive look, watchers have the choice to tap on any photograph.
3. Instagram photograph Content: Clicking on a photograph shows a bigger rendition of the photograph. Here, watchers can like the photograph, leave a remark, or read beforehand posted remarks. In this photograph content likewise shows what number of individuals have "preferred" the photograph, the photograph's inscription, and remarks affixed beneath the subtitle.
4. Navigational apparatuses: There are five symbols accessible at the base of each page in the Instagram's screen the symbols are the landing page, investigate page, posting page, warning page, and client's profile page. These are the essential navigational devices for Instagram. From the highlights given above, it gives the clients "an interesting path" to utilize Instagram as an online networking.

By then, the photos and chronicles can be partake in a brief instant on different stages (e.g., Twitter and Facebook). While posting photos, Users can Tag photos which join including territory, naming friends and consigning catchphrases marks to photo. Also, the customers moreover can incorporate engravings, hashtag using # picture to depict the photographs and chronicles, and tag or determine diverse customers by using the @ picture (which enough makes an association from their presents on the referenced customer's record) before posting them. In Instagram, a customer takes after some different customers called "partners". On the other hand, the customers following an Instagram customer are designated "supporters".

Actually, Instagram isn't just about selfies, likes/remarks, or repost. Educators should bounce the chance to take advantage of this advancement. It is an extraordinary plan to begin utilizing Instagram in the classroom. Instagram can turn into an incredible instructive apparatus that makes the instructive procedure extraordinary, fascinating, and astute (Kirst: 2016). A ton of exercises should be possible by utilizing Instagram in the classroom. Utilizing this instrument, understudies can trade assessments and perspectives on various themes. Understudies can likewise take an interest in a gathering movement where every understudy requests that the others remark on a photograph or video. This makes it feasible for them to trade learning with schoolmates and instructors. Consequently, taking and altering of pictures and the inscriptions and input alternatives urge Social media to be spatially and semantically mindful (Phillips, 2013).

V. EFFECTIVE USAGE OF INSTAGRAM

Instagram is the quickest developing web-based social networking stage on the planet at display, It has more than 400 million overall clients, It is additionally the web-based social networking stage with the most noteworthy rate of client engagement, The stage is assessed to get more than 100 million new picture transfers for every day, Users draw in by means of remarks or enjoys and the stage delivers more than 10,000 engagements consistently, Instagram has gigantic infiltration with the educated millennial group of onlookers (18-30) who are likewise the best web-based spending statistic and Health, excellence and form are predominant classes inside Instagram yet travel and sustenance are additionally exceptionally mainstream. Instagram is by all accounts an ideal apparatus to help learning English for the accompanying reasons.

- To begin with, it offers a plenty of contextualized visual information that can give help in dialect classroom.
- Second, utilizing Instagram in classroom can help with making a socially associated group of students, as the instrument itself gives space for students to

impart and mingle each other past classroom requirements.

- Third, Instagram is a usually utilized online networking outlet that youthful students are currently completely drenched in and acquainted with; incorporating it in their learning procedure can be viewed as a type of applying themes learned in class, all things considered, condition.

At last, straightforwardness to access to Instagram and accessibility in most is taken care about this stage for use in dialect classroom. (Ali: 2014)

a) *Instagram as a Teaching Tool ? Really ?*

The utilization of web-based life turns out to be more well known for the Students these days. Internet-based life is electronic application that enables clients to impart, team up, and share assets with other individuals. Having access and simple to utilize eventually influence online networking to wind up an exceptionally powerful apparatus to impart and trade thoughts. Students may utilize online status to stay aware of their friends, to remain in the know regarding news and understand recent developments, to top off extra time, to discover and find themselves in engaging substance, and to impart insights. In this manner, the prevalence of the web-based life among students can be consumed as an important medium of learning, Instagram. It is an informal organization that empowers its users to take pictures and recordings, and offer them openly or secretly on the application and share among themselves. To start with.

- Its substance bolsters instructing and learning in a deep rooted learning scale; it adds to reasonableness and consideration and builds benchmarks on Higher Education organizations to enhance the quality and accessibility of their course content.
- Second, Social media gives the likelihood to the students to make computerized content individually and distribute it web based, expanding an immense asset of client made substance from which students and instructors can mutually profit, likewise promising more dynamic and proactive ways to deal with learning.
- Third, Social media is a system that interfaces students with each other, and to their educators, enabling them to share their insight and in the meantime approach particular and focused on learning in a given field of learning.

So also, Crowley (2015) offers additional inputs on how Social Media can be utilized as web- based life in the classroom:

- 1) Social media gives scenes to Students to share their accounts both inside and past the classroom.
- 2) likewise it allows an open door for them to hear stories from past their school.

- 3) Social media encourages students to perceive the intensity of individual voice. From those reasons, it tends to be expressed that internet-based life is a viable apparatus to be utilized by the educators in the classroom. Online networking is well-known for students. They are as of now utilizing them for purposes that incorporate the social media and the instructive. It is additionally valid which brings learning outside the classroom. By associating learning with whatever is left of the world's makes learning winds up motivational and creates fun.

b) *21st Century Teacher–Student Connection*

Traditional classrooms keep students from one another and, they sit at their work regions, work independently, and learn freely. In any case, this segment and specific thought of learning isn't any more reality of the gathering sourced and shared a world that understudies live in. Exactly when understudies participate and swarm source musings on the web, they bring a more noteworthy accumulation of experiences and learning and appreciate the capability of working all around rather than exceptionally. Unfortunately, the ordinary classroom does not dwell into learning could strain and test the educator to understudy relationship.

c) *Instagram Educational Benefits*

According to Instagram's use Terms and Conditions, youngsters up to 13 years old are not permitted to claim an Instagram account. In any case, these students can at present view the transferred pictures. Instagram enables the supporters of a client to see photos and these can likewise be geo-tagged. By "geo-tag" imply that the individual transferring the photos can likewise share the area where the image was taken with their friends and companions. Jason Philips (2013) proposes a portion of the manners by which the utilization of a device like Instagram can profit the instructive procedure:

1. Instagram and Spatial Intelligence: Spatial insight is a psychological procedure through which the mind endeavors to decipher specific kinds of approaching data. This data is fundamentally anything visual – pictures, maps, plans and so forth. This knowledge is utilized adequately in Instagram works out. The mind makes a decision about the separation, measure and different parts of a protest before clicking an image or when seeing them, and furthermore when altering pictures.
2. Instagram and Linguistic Intelligence: Etymological insight is tied in with sharpening understudies' dialect aptitudes. At the point when a client transfers pictures, his companions and adherents can see them. Similarly, instructors can transfer pictures and offer then with their understudies and request that they mention objective facts or give particular kinds

of criticism. This urges understudies to utilize their dialect abilities.

3. Instagram and Logical Mathematical Intelligence: It is essentially identifying the capacity to assess issues and think intelligently. This insight can be put to utilize when instructors share a few pictures with the understudies and request that they take a shot at them – like editing a picture or enhancing its look utilizing Photoshop. An exceptionally fascinating activity can be trimming an image into different pieces and making a riddle out of it.
4. Instagram and Interpersonal Intelligence: The capacity of a man to grasp wants, inspiration and the expectations of others is alluded to as Interpersonal knowledge. Educators can connect with the understudies in gathering Instagram exercises like "about my schoolmate" to practice this type of insight.
5. Instagram and Intrapersonal Intelligence: The capacity to comprehend oneself and value one's apprehensions, emotions and inspirations is known as Interpersonal Intelligence. This knowledge is tended to through the demonstration of enabling understudies to work freely and consider a portion of the photos they catch and make.

At long last, Social media makes conceivable cooperation among students and educators on a given errand or venture or a joint goal, pooling assets and get-together the ability of a gathering of individuals progressing in the direction of a typical target (Bexheti:2014).

VI. CONCLUSION

In an advancement driven world, change is steady. Teachers are finding that development has disturbed the seasons of procedures techniques that worked for Students and the present students foresee that all the all the more dazzling activities will apply course content. Hence, the suitable reaction is clear. As instructors, getting a handle on the development and using web-based systems administration frameworks to utilize commitment these applications see can upgrade the transport of substance and support. A segment without limits explore around web based systems administration frameworks could survey the creating advancement driven classroom, and furthermore, the conspicuous change in standpoint to an 'understudy facilitated' learning style. In the wake of looking over Facebook, Pinterest, Instagram, Blogs, Twitter, and Evernote frameworks, the necessity for educators to apply them in preparing is obvious to remain as development canny as the understudies being served. Ali J. Al-Kandari, Ahmed A. Al-Hunaiyyan and Rana Al-Hajri (2016).

Having inspected about Instagram and activities gave by using Instagram; it very well may be assumed

that Instagram gives worthwhile effect in upgrading students vernacular mastery. It is useful preparing roadmap in giving students and educators a basic technique to grant that goes past accessible time and classroom. Using Instagram empowers students to deliver considerations with consistently appropriate substance and offers them a learning information that they appreciate. Along these lines, teacher can use Instagram to develop particular activities in demonstrating English oddly. Finally, it very well may be emphasized that using Instagram in remote lingo learning can be a reasonable an inventive mechanical assembly as it is used by students and teacher for enlightening focuses appropriately. (Fitri Handayani, 2016).

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Exploring the Perspective of Entrepreneurship in the Energy Sector: Case Study on Renewable Energy Sector of Bangladesh

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Abstract- Bangladesh is endowed with ample supply of renewable sources of energy. By acknowledging the potential of renewable energy resources, Bangladesh could meet its unprecedented energy demand, thus enhancing electricity accessibility to all and increasing energy security through their progression. A significant number of studies demonstrated the socioeconomic impact of renewable energy, especially in Bangladesh. According to these studies, it is realized that the entrepreneurial perspective of renewable energy is missing except a few studies on innovation theory, social entrepreneurship, and micro-finance. The endeavor of this article is to argue that renewable energy is an opportunity to slow environmental degradation opening a new perspective of the research agenda in entrepreneurship. In addition to that, it is hoped that this article contributes to the connection of entrepreneurial viewpoint, its opportunities and, challenges, with renewable energy in the emerging markets in Bangladesh.

Keywords: *renewable energy, entrepreneurship, scope, challenge, bangladesh.*

GJMBR-C Classification: *JEL Code: L26*



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Exploring the Perspective of Entrepreneurship in the Energy Sector: Case Study on Renewable Energy Sector of Bangladesh

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Abstract- Bangladesh is endowed with ample supply of renewable sources of energy. By acknowledging the potential of renewable energy resources, Bangladesh could meet its unprecedented energy demand, thus enhancing electricity accessibility to all and increasing energy security through their progression. A significant number of studies demonstrated the socioeconomic impact of renewable energy, especially in Bangladesh. According to these studies, it is realized that the entrepreneurial perspective of renewable energy is missing except a few studies on innovation theory, social entrepreneurship, and micro-finance. The endeavor of this article is to argue that renewable energy is an opportunity to slow environmental degradation opening a new perspective of the research agenda in entrepreneurship. In addition to that, it is hoped that this article contributes to the connection of entrepreneurial viewpoint, its opportunities and, challenges, with renewable energy in the emerging markets in Bangladesh. This work allows introducing Bangladesh as an emerging context of entrepreneurship in renewable energy sectors of Bangladesh.

Keywords: renewable energy, entrepreneurship, scope, challenge, bangladesh.

1. INTRODUCTION

Deployment of renewable energy and energy efficiency including technological diversification would result in significant energy security and economic benefits in Bangladesh. In this regard the government of Bangladesh has planned to generate 20% of total generation by nuclear, renewable and cross border by 2030 out of 40, 000 MW total expected generation. Renewable energy (RE) technologies will result in reducing dependency on fossil fuel to a sustainable level, and it will ultimately minimize load shed, further expansion of national grid at remote rural areas in Bangladesh. In this regard, the Government of Bangladesh has planned to generate 5% of generation and subsequently 10% by 2020 from renewable sources. The average cost of power generation in Bangladesh is approximately BDT. 6.02/KWh and diesel based generation is BDT. 15.80/KWh, the cost of renewable energy appears to be pricey with a comparison to conventional energy, but the difference between conventional and RE is gradually decreasing

due to the availability of efficient RE technologies. The gradual expansion of RE in Bangladesh is getting popularity as the natural resources, e.g., gas is depleting with an approximate projection of declining time around 2017 as indicated in Power System Master Plan 2010 (PSMP 2010).

Bangladesh has also created Sustainable and Renewable Energy Development Authority (SREDA) to implement and disseminate the idea and efficient technology including utilization of reading rural and urban areas of Bangladesh through scores of the program. The power division has published programs, action plans and subsequent master plan in this regard to promote the adoption of RE and energy efficiency programs for demand-side management. The government, however, is committed to providing electricity to all citizens by 2021 at a reasonable and affordable price. So, this program is placing as the priority on developing RE resources considering the development of off-grid electrification program at all level as 40% of the people of the country live in remote areas which are far away from existing grid line and sometimes isolated from the main land (Power Division, 2014).

Hence, considerable attention has been paid to this tremendous energetic transition and its impact on economic activities around the world. Researchers have conducted many empirical studies to show the socioeconomic impact of these renewable energy projects using several methodologies, concepts and theories. Engelken et al. (2016: 798) show that the concepts used in the literature belong to economics and business research. Based on theories/concepts listed on that literature review (Engelken et al., 2016: 801), it is realized that the entrepreneurial perspective of renewable energy is missing except a few studies on innovation theory, social entrepreneurship, and microfinance. Furthermore, York and Venkataraman (2010: 450) argue that while there has been recent literature on how large companies can gain competitive advantage through 'greening', little has been produced on the entrepreneurial role in correcting environmental degradation. From an entrepreneurship perspective,

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environmental problems should be viewed as an opportunity for new value creation.

Although researchers in entrepreneurship have made considerable efforts in recognizing the role of the concept of opportunity (Shane, 2000), little existing research has been made in the discussion of entrepreneurial opportunities and challenges for renewable energy. According to Venkataraman (2010: 122), "one of the most neglected questions in the entrepreneurship literature is where opportunities to create goods and services in the future come from". One of the most important weaknesses in the entrepreneurship literature is the lack of studies on the connection of entrepreneurial perspective, opportunities and its challenges, with renewable energy business in the emerging market countries. Consequently, sustainability is viewed as an integral part of the entrepreneurship domain. As recently noted by Cohen and Winn, (2007), sustainable entrepreneurship is still a new field of research and it is in its infancy. In this extent, we strongly believe that entrepreneurship could have a positive impact on reducing environmental degradation through entrepreneurial action (Dean et McMullen, 2007).

In addition to that, Engel ken et al. (2016: 799) demonstrate, in their review on comparing drivers, barriers, and opportunities of business models for renewable energy, that academic researchers in the industrialized world do more research than in developing countries. However, Bangladesh is not among the developing countries analyzed by researchers despite the remarkably ambitious strategy Bangladesh has launched to promote renewable energy. In order to fill this gap, it is aimed in this article to investigate the sources of entrepreneurial opportunities related to renewable energy.

II. RENEWABLE ENERGY RESOURCES IN BANGLADESH

Fossil energy resources in Bangladesh consist primarily of natural gas. The supply of domestic oil is considered negligible. Several small deposits of coal exist in the northeastern region of the country, but these consist of peat, with low caloric value and very deep bituminous coal that will be quite expensive to extract. Only 15% of the total population has access to electricity. In 1990 only 2.2% of total households had piped natural gas connections for cooking, and only 3.9% of total households used kerosene for cooking. This is by no means an encouraging scenario. Per capita consumption of commercial energy and electricity in Bangladesh is one of the lowest among the developing countries. In 1990, more than 73% of total final energy consumption was met by different type of biomass fuels, for example agricultural residues, wood

fuels, animal dung, etc (Ahammed, F. and Taufiq, D.A, 2015).

The rural and remote sector of the Bangladesh economy is characterized by an abundance of open and disguised unemployment, high man-land ratio, alarmingly large numbers of landless farmers, extremely inadequate economic and social facilities, low standard of living and a general environment of poverty and deprivation. Larger energy supplies and more efficient energy use are therefore necessary to meet the basic needs of a growing population. It will consequently be necessary to include all sources of renewable energy and to use these in an efficient converted form for the people's benefit. Primarily this will be done in remote inaccessible unelectrified areas in a stand-alone system where grid expansion is expensive. This energy conversion will reduce pressure on the national power demand. This will not only save excessive grid expansion costs but will also be environmentally friendly (Barua, C.D et al., 2016).

Gradually, renewable energy and its different energy conversion technologies have become economically viable, capable of competing with fossil-fuelled technologies in the energy market. The size and economic potential of the renewable energy resources in Bangladesh are yet to be determined, and the capacity of renewable energy development is presently low. Although investment costs of renewables are generally higher compared to fossil fuel alternatives, this option becomes economically viable when all externalities, e.g., environmental cost, health hazards, etc. and lower operating costs are taken into consideration (Khan, Iqbal&Mahboob, 2014).

a) Solar Energy

Bangladesh is located between 20.30 - 26.38 degrees north latitude and 88.04 -92.44 degrees east, which is an ideal location for using solar energy. Here, the daily average solar radiation varies between 4 to 6.5 kWh per square meter (Islam, 2015). A maximum amount of radiation is available during the months of March and April while the minimum amount is available during December and January. The energy from sunlight reaching the earth is a huge potential that can be exploited and used for generating electricity. Of the number of available technologies, solar photovoltaic (PV) is the most promising. PV technology converts sunlight into direct current (DC) electricity. When light falls onto the active surface of the solar cell, electrons are energized and a potential difference is established, which drives a current through an external load. The major issue facing PV technology is cost, despite the fact that the cost of PV has fallen in several orders of magnitude and its efficiency has improved. Solar PV is becoming more and more popular due to high modularity, no requirement for additional resources, no moving parts, and only low maintenance is needed Over

the last two decades, the cost of manufacturing and installing solar PV systems has decreased by about 20% for every doubling of installed capacity (Brown & Hendry, 2009). The solar industry has grown at a rate of 35% per year over the last ten years (British Petroleum website, 2011).

Infrastructure Development Company Limited (IDCOL) has supported NGOs in installing solar home systems (SHSs) and a total of 801,358 SHSs having the capacity of about 36.5 MW have been installed up to January 2011 (Renewable energy projects, 2011). The Bangladesh Power Development Board (BPDB) has also implemented an excellent Solar PV electrification project in the Chittagong hill tracts region. Solar PV electrification has emerged as the most appropriate technological option for electrifying these areas (Renewable Energy Information Network, 2011).

b) Wind Energy

In Bangladesh's coastal areas there are some islands and inlands where wind energy can play a very important role in the country's economic development. The energy from continuously blowing wind can be captured using wind turbines that convert kinetic energy from wind into mechanical energy and then into electrical energy. Electricity generated by wind turbines can be fed to the central grid or be locally consumed using small stand-alone wind turbines. Gradually, the generation of electricity from wind energy is proving to be very promising where speed and wind power density is sufficiently high (Mondal, 2010). Wind power generating capacity growth accelerated to 31% in 2009 throughout the whole world, with capacity increasing by a record 38 GW to reach 160 GW by the end of 2009. Wind turbines for grid-connected systems are the most highly demanded on the market and the rate of capacity growth was 28% per year between 1999 and 2009 (British Petroleum website, 2011).

The BPDB installed a 160-foot tower at the Muhuri Dam site in the Feni district in May 2003. Two high-resolution anemometers were installed on this tower, one anemometer at 80 feet and the other at the height of 160 feet. One wind vane was installed at 80 feet height. The average wind speed, up to now, at the Muhuri Dam areas is found to be 6.50 m/s and the wind power density varies from 100 to 250Watt/m² in the coastal regions of Bangladesh (Kaiser, Rahman, Rahman & Sharna, 2006). For grid-connected wind turbines to be financially viable, the required annual average wind speed must be 6 m/s. The wind speeds are encouraging for the grid connected wind energy projects at Muhuri Dam in Feni (Renewable Energy information Network, 2011). This site is large enough for the larger wind energy projects.

The BPDB also implemented a 1000 kW capacity wind battery hybrid power project on Kutubdia Island (Bay of Bengal) in the Cox's Bazar district. Under

this project, a total of 50 20kW capacity stand-alone wind turbines were installed. The total capacity of all the wind turbines is 1 MW. The wind turbines producing electricity is being stored in a battery bank. WBHPP officially began on March 30, 2008. In another project, BPDB implemented a 0.90 MW capacity grid-connected wind energy (GCWE) at the Muhuri Dam area in Feni in 2004. This installation involved the commissioning and erection of 4 units of 225 kW GCWE turbines and these were completed in 2004. This represented the first ever GCWE project in Bangladesh. Thus generating electricity from wind in the coastal areas can be transmitted to other regions of the country through high voltage transmission lines (Renewable Energy Information Network, 2011). Very little operation and maintenance will be required during the whole life time of wind turbines and no fuel will be required for generating electricity from wind.

c) Biomass and Biogas

Biomass is the most significant energy source in Bangladesh which accounts for 70% of the total final energy consumption (Azad, 2011). This technology can be disseminated on a larger scale for generating electricity. Worldwide, biomass provides basic energy requirements for rural households' cooking and heating in developing countries. Biomass covers all kinds of organic matter from fuel wood to marine vegetation. Energy generation using biomass offers a promising solution to environmental problem by reducing the emission of common greenhouse gases. Several technologies exist for converting biomass into energy such as heat energy and electrical energy. Two widespread technologies are direct combustion and gasification. Direct combustion involves the oxidation of biomass with excess air, producing hot flue gases which in turn produce steam, which is used to generate electricity (Renewable Energy Technology Characterizations, 2013). Gasification involves conversion of biomass to produce a medium or low calorific gas. The obtained gas is then used as a fuel in combined cycle power generation plants. Being produced in combined cycle power plants, electricity from this technology is more efficient and more competitive than that from a steam turbine. Biogas mainly from animal and municipal wastes constitutes a promising renewable energy source for Bangladesh. It has the potential to harness basic biogas technology for cooking and rural and peri-urban electrification, so that electricity during periods of power shortfalls is still able to be provided.

In Bangladesh, Infrastructure Development Company Limited (IDCOL) financed a 250 kW biomass-based power plant at Kapasia, Gazipur. The plant uses locally available agricultural residues, i.e. rice husks as fuel for power generation. Being located in an unelectrified area, the plant is expected to supply

environmentally friendly grid quality power to 300 households and commercial entities in that area (IDCOL, 2011). There are three million potential households with adequate cattle or poultry. In Bangladesh biogas is used mainly for cooking. From 1971 to October 2009 about 41000 biogas plants were constructed by various NGOs under the national domestic biogas and manure programme (NDBMP) run by IDCOL, the sustainable energy for development (SED) program using German technical cooperation (GTZ), and other government organizations. These included for example, the Local Government Engineering Department (LGED), and the Bangladesh Council of Scientific and Industrial Research (BCSIR) (Islam, 2009).

d) *Hydro-Energy*

Kinetic energy from flowing or falling water is exploited in hydropower plants to generate electricity. Hydropower plants are classified into two categories: 1) large hydropower plants (>10 MW), usually with reservoirs, that cannot only produce electrical energy continuously, but also can adjust their output according to electricity demand; and 2) small hydropower plants (<10 MW) that are less flexible with respect to load or demand fluctuation due to their dependence on the water resource (Mondal, 2010). Hydropower technologies are mature and widely available.

In Bangladesh about 1.4 trillion cubic meters (m³) of water flows through the country in an average year. The country's major rivers have a high rate of water flow lasting for approximately 5 to 6 months during the monsoon season, which is substantially reduced in the winter season. More than 90% of Bangladesh's rivers originate outside the country, due to which proper planning of water resources is difficult without neighboring countries' cooperation. Downstream water sharing with India is a highly contentious issue for Bangladesh. The annual average rainfall is about 2,300mm, which varies from 1,200 mm in the north-west to 5,800 mm in the north-east. Most of the rainfall (about 80%) occurs from May/June to September/October (Azad, 2011). At present only 230 MW of hydro power is utilized in Karnaphuli, Rangamati hydro station, which is the only hydro-electric power plant operated by BPDB (Moury & Ahshan, 2009). Microhydro and minihydro technologies have limited potential in Bangladesh, except Chittagong and the Chittagong hill tracts. Hydropower assessments have identified some possible sites from 10 kW to 5 MW but no appreciable capacity has yet been installed (Renewable Energy Policy of Bangladesh, 2008).

III. THE CHALLENGE OF ENTREPRENEURSHIP IN RENEWABLE ENERGY SECTOR IN BANGLADESH

During the last decades, entrepreneurship and renewable energy research have been developed independently (Gabriel, 2016). Academics and practitioners in entrepreneurship theory have identified several keys that depict the entrepreneurial ecosystem. This concept includes all variables related to entrepreneurial action. Researchers of this work argue that these factors such as access to formal finance and credit, lack of investor protection, the provision of effectiveness of government regulations and incentive programs, political stability, access to information or education on how to start a new business, etc, influence strongly the entrepreneur's ability to recognize and exploit entrepreneurial opportunities. Institutional constraints and financial challenges are the most important barriers in Bangladesh. These results confirm what we can realize in Global Entrepreneurship Monitor's reports about entrepreneurship in developing countries. While some papers concentrate their thought on the lack of R&D transfer and the lack of access to information and education on creating new ventures (Urban, 2013), others consider infrastructure constraints and lack of policy, legislative and tax incentives, property rights, etc, (Stel, 2013) as big challenges facing entrepreneurship in developing countries.

According to the literature reviewed by Gabriel (2016: 366), renewable energy challenges and those of entrepreneurship are the same in developing countries like Bangladesh. These challenges include what we can consider as the most common barriers to promote entrepreneurship in the RE field. The access to institutional and regulated finance is a key issue. Governments have to play the role of a facilitator in order to enhance international private sector involvement in RE. This does not mean that government in Bangladesh does not invest directly in that sector. Experiences in some European countries, the German experience, for instance, could be adopted for overcoming this challenge. Therefore, experiences in joint public-private or public-private partnership-type developed in emerging economies like China, India, Tanzania or South Africa (Martinot, 2001) may be more important to consider for implementation in the developing context.

In emerging countries like Bangladesh, the inability to achieve economies of scale influence negatively the price of renewable energy technologies. RETs are not viable because of their high-cost production (Painuly, 2001). For this reason, RE have encountered many difficulties to compete with fossil energy during the last decades. It greatly affects the cost and endusers affordability in Bangladesh. Indeed,

this challenge should be overcome by government subsidies, tax breaks and feed-in tariffs. To surmount these barriers, entrepreneurs should rethink their business models taking into consideration the endusers ability to afford RE. Governments have to deploy incentives, in spite of their limited resources, especially in the initial stages in order to promote the innovation and R&D activities in that sector (Painuly, 2001). The return on an investment in renewable energy takes more time than fossil energy and its market size is not large enough which affects negatively the achievement of economies of scale. The lack of access to capital and its high cost may also affect the economic viability of entrepreneurial opportunities, which comes from renewable energy. The perceived risk is high, and then financial institutions hesitate to support the investments. They tend to prefer conventional energy rather than the clean one.

Similarly, there are many institutional, political and legal barriers to renewable energy entrepreneurship in Bangladesh. Painuly (2015: 81) argues that the lack of institutional mechanisms to disseminate information leads to a non-availability of information with producers as well as consumers. At the macro-economic level, instability increases risk and uncertainty for new investments. It incites investors to prefer products with low payback period. As a result, they prefer exploitation activities rather than exploration and innovation by investing in R&D activities.

IV. ENTREPRENEURIAL PERSPECTIVE OF RENEWABLE ENERGY

The Energy sector of Bangladesh is highly monopolistic and controlled by public authorities. The established firms are large and they tend to prefer to market their existing profitable technology rather than promoting RETs. Given subsidies to conventional energy, especially fossil fuels, have affected the development of renewable energy and its competitiveness. According to Power Division, 2014, the fossil fuel subsidies budget in Bangladesh more than renewable energy in 2015.

If the renewable energy market was large, costs would be driven down and competitiveness would increase. Renewable energy is also negatively affected by the competitiveness of conventional energy. This is also due to the lack of entrepreneurs, small businesses and skilled workers who can promote and expand market of RETs in Bangladesh (Bridle et al., 2014). The Market is not perfect in reality because externalities such as pollution, climate change costs and health costs are not considered. It is also imperfect because of the lack of transparency and the lack of information and data (Leidreiter and Boselli, 2015). The Bangladesh experience in renewable energy is relatively novel. That's why there is a lack of knowledge and data and thereby

the ability of entrepreneurs to evaluate the entrepreneurial potentialities of the strategy of renewable energy remains immature. The lack of transparency affects the decision-making process and the interests behind these decisions. Due to the lack of knowledge, entrepreneurs cannot understand the real potential of renewable energy, how it works, its main benefits and challenges (Leidreiter and Boselli, 2015).

V. RENEWABLE ENERGY TECHNOLOGY ABSORPTIVE CAPACITY IN BANGLADESH

Several experiences around the world demonstrate that the culture and education systems influence real income through imbedding resources in people (Islam, 2015). These variables define the concept of human capital. It plays an important role in enhancing innovation and promoting research and knowledge creation in emerging sectors. It seems difficult to achieve the strategic goals with a strong lack of knowledge and understanding of the potential of RE among citizens.

To develop a sustainable innovation and research in renewable energy field, Bangladesh has established institutions and initiated many programmes and interventions. These institutions aim to promote knowledge creation, R&D activities and innovation by networking and building collaboration among academic researchers, projects and universities to develop the national capacity of innovation. They are the pivot of an emerging innovation system in RE energy.

In the same way, knowledge transfer is one of the most important expectations. It can be achieved through the establishment of long-term relationships among SMEs, large companies, universities and training centers. Empirical observation shows that the involvement of international firms is perceived as a positive thing because it allows transferring skills, technology and operational experience required for local SMEs (Germanwatch, 2015). According to representatives of local SMEs, technology and knowledge transfer is a prerequisite for RE related projects to produce what is desired regarding opportunities and benefits in the region. Nevertheless, the limited absorptive capacity of small firms may not enable significant spillover effects.

Researchers generally agree on the fact that economic and financial factors are one of the major barriers to promoting and developing entrepreneurship in renewable energy in developing countries (Painuly, 2001). Renewable opportunities are perceived as being not viable because of the high cost of renewable technology. Consequently, the most important financial resources for RETs still fully come from the Bangladesh government and from international institutions rather than from local and private banks (Whitley and Granoff, 2014).

In the Bangladesh context, there is a strong lack of experienced banks and investment funds that make them able to provide credit and support investments in RE. Moreover, the scarcity of financial resources, the difficulty to access the capital market and lack of enhancements all contribute to increase risks and uncertainty in RETs. Specifically in Bangladesh, many studies indicate that there is a lack of accessible financial support for small scale projects able to facilitate private consumers to install RE technologies. According to Painuly's results on economic and financial barriers especially the fact that RE projects become unviable because of its high payback period. Leidreiter and Boselli (2015) assume that investors tend to prefer investing in short-termism rather than long-termism. They direct their investments to large-projects with high return on investment and within a short term. These results are compatible with Germanwatch et al. (2015: 215) study in which it is mentioned that SMEs are constrained by the lack of financial resources for upfront investment in new equipment and acquiring competencies to meet the needs of the project developers. It is also argued that they lack the cash flow necessary to wait for the stipulated three months for payments from the project developer.

In general, infrastructure capacity means the presence and the quality of existing infrastructure and manufacturing or other industrial capital. Specifically, RET infrastructure capacity refers to the extent and quality of adequate electrical grids, ancillary roads, railways, ports, and waterways. It also includes the presence and quality of existing energy technology, manufacturing or other industrial facilities (IRENA, 2013: 33).

In the conception of this capacity, researchers of this work think about the global index innovation (GII) in which we find a macro level measure and rank of countries. In this extent, GII (Cornell University et al., 2016) considers three items to evaluate the country's infrastructure: information & communication technologies (ICT access, ICT use, government's online service, e-participation), general infrastructure (Electricity output, kWh/cap, logistics performance, Gross capital formation, % GDP), and ecological sustainability (GDP/unit of energy use, Environmental performance, ISO 14001 environmental certificates). Infrastructure is one of the seven pillars, which form the global index. In 2016, infrastructure is the GII's pillar in which Bangladesh ranks 117 among 128 countries, advanced 12 points from last year's 129.

Nevertheless, the remote rural areas of Bangladesh region have the poor infrastructures in the country, especially the healthcare system. These areas lack basic community infrastructures and services, such as access to clean water and sufficient health care. The implementation of RE related projects delivers lots of

opportunities to improve regional infrastructure like highways and roads.

VI. CONCLUSION

This work has shown that the sector of renewable energy is emerging in Bangladesh. From an entrepreneurial perspective, it delivers many opportunities for new value creation. With this work, we believe that sustainable entrepreneurship will be the most important stream of research in the future in Bangladesh. This is because of the fact that the relationship between entrepreneurship and sustainability is still in emergence, more prescriptive than descriptive and optimistic. Hence, many open questions about whether and to what extent entrepreneurs have the potential for creating sustainable economic value (Hall et al. 2010: 445). The RE in emerging economies could be the sector in which these countries can develop new business models (Gabriel et al., 2016) because of its specificity and economic potential in terms of value creation, job creation, innovation, knowledge and technology transfer. While entrepreneurial opportunities depend on market imperfections, governance, the vision of policy makers and the relative ease of doing business, a factor such as absorptive capacity is considered as critical when promoting entrepreneurship in RE. It includes the entrepreneur's or region's abilities to acquire, learn, and exploit external knowledge.

Our article is focused in the Bangladesh strategy of renewable energy from an entrepreneurial perspective. Bangladesh's promising interest in renewable energy is viewed through the lens of entrepreneurship considering the market imperfections in the Bangladesh context and the RETs absorptive capacity. The results have indicated that there is a great potential in terms of value creation and entrepreneurship in RE in Bangladesh. However, barriers related to contextual variables such as legal and policy factors could obstruct the achievement of this potential. In Bangladesh, as well as in other developing countries, the emergence of business models for renewable energy fails due to corruption and deficiencies in legal frameworks. In the Bangladesh context, the regularity and policy frameworks must encourage the involvement of small entrepreneurs in the implementation of the national strategy to achieve its goals. Small firms in the renewable energy sector are still managed by first generation entrepreneurs lacking abilities to realize economies of scale.

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Cultural Dimensions Origins: Measures for Power Distance and Uncertainty Avoidance

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Abstract- This study seeks to develop a measure method of national culture based on cultural origins. Two cultural dimensions are studied; power distance (POWD) and uncertainty avoidance (UAV). Methodology used is SEM method under LISREL approach. Findings show that environmental factors are able to determine cultural dimensions studied in our sample countries. Nevertheless, we found that cultural dimensions indicators' have evolved and are no longer the same identified in prior researches suggesting that environment evolution' leads to the creation of new subsistence means and new cultural needs.

Keywords: *power distance, uncertainty avoidance, MES method, environmental factors.*

GJMBR-C Classification: *JEL Code: Z10*



CULTURAL DIMENSIONS ORIGINS MEASURES FOR POWER DISTANCE AND UNCERTAINTY AVOIDANCE

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Cultural Dimensions Origins: Measures for Power Distance and Uncertainty Avoidance

Rabeb Riahi ^α & Foued Hamouda^σ

Abstract- This study seeks to develop a measure method of national culture based on cultural origins. Two cultural dimensions are studied; power distance (*POWD*) and uncertainty avoidance (*UAV*). Methodology used is *SEM* method under *LISREL* approach. Findings show that environmental factors are able to determine cultural dimensions studied in our sample countries. Nevertheless, we found that cultural dimensions indicators' have evolved and are no longer the same identified in prior researches suggesting that environment evolution' sleeds to the creation of new subsistence means and new cultural needs.

Keywords: power distance, uncertainty avoidance, MES method, environmental factors.

1. INTRODUCTION

Culture is widely perceived as the set of values and beliefs shared with in a same community. Existing literature distinguishes several levels of culture ; national culture, gender culture, generation culture, organizational culture, professional culture... Our study concentrates on national culture because it is programmed in individuals' minds since their birth's day and developed through their daily life. It is there fore the deepest level of mental programming (Hofstede, 1989). Existing literature documents a variety of determinants used to operationalize national culture in order to easily relate it to different social choices aspects. This is why several researches try to develop methods measuring national culture by giving it attributes or dimensions. In fact, culture has been measured through some proxies like nationality (Daniels and Radebaugh, 2001), language (Nair and Frank, 1980; Pinker, 1995 ; Botazzi and Peri, 2003) or religion (Griffin and Pustay, 2003). Some other researchers developed indices to measure cultural dimensions (Hofstede, 1980 ; Schwartz 1994).

Although existing studies give many models to measure national culture, their contributions were limited and criticized because they do not take into account the dynamic nature of culture. National culture in our sample countries is identified by using Hofstede's (1980) cultural Model. Indeed, Sondergaard (1994) and Schwartz and Sagiv (1995) argue that criticisms of Hofstede's (1980) works represent a minority in national culture study researches. Therefore, Hofstede's cultural dimensions can serve as a guide for several studies studying culture influences (Magnini, 2009).

Otherwise, Hofstede (1980) considers that cultural dimensions in a given country have their origins in economic and demographic conditions. Hence, environment and society nature is a resultant of human behavior that follows a dynamic of that environment in order to achieve goals and meet specific needs (Bennet, 2005). Consequently, Steward (1955) concludes that cultural diversity is a result of "ecological" diversity, which justifies the fact that different cultures employ different technologies and subsistence practices.

The main purpose of this paper is to develop a measure to two of Hofstede cultural dimensions namely power distance (*POWD*), uncertainty avoidance (*UAV*) through ecological indicators. Cultural ecology theory initiated by Steward (1955) and developed by a number of researchers (Bennett, 2005 ; Zimmerer, 2007...) considers a dynamic relationship between individual and his environment. Then, by reference to cultural ecology theory, we measure our sample countries cultural dimensions through their economic and demographic characteristics under structural equations model (*SEM*).

Studying cultural dimensions determinants is interesting because it has been hypothesized that human behavior is widely influenced by beliefs. In fact, sociological model of human behavior (Jensen and Meckling, 1994) considers that individual's behavior and decision-making are conditioned by their values and beliefs, which are taught by cultural influences of the society in which he has evolved.

This study gives contributions to the existing literature as follows. First, it represents an extension to studies considering cultural relativism to understand human beliefs and behaviors in their contexts. Second, our study proposes a framework in order to measure national culture that can be employed in future researches studying national culture influences. Finally, the framework proposed and based on *SEM* method includes quantitative measures to cultural dimensions suggesting a more objective and actualized findings.

The remainder of the paper is structured as follows. In the next section we review relevant literature and we develop research hypotheses. In the third section, we describe research methodology and data measurement. Empirical results and their discussions are reported in section 4. The final section provides conclusion of the paper.

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II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

a) *National culture origins: The cultural ecology theory*

Cultural ecology theory refers to the ways in which a given society interacts with its environment. The theoretical framework of this relationship has been defended by several researchers in cultural anthropology and human geography such as Steward (1955), Lévis-Strauss (1962), Bennett (2005) and Zimmerer (2007). Thus, Two main approaches have been used to explain the relationship between society and environment; The deterministic or static view which considers society as a component shaped and driven by environmental factors (Davidson-Hunt and Berkes, 2003), and the possibilistic view that considers culture to be from the environment to cause or create a cultural style based on that environment (Bennet, 2005).

The concept of cultural ecology (Steward, 1955) means studying the ways in which culture is used by individuals to adapt to their environments (Sutton and Anderson, 2004). This discipline seeks to understand cultural responses that result from individual's adaptation to changing environmental conditions (Steward, 1955). It is therefore about comparing subsistence patterns related to environmental processes and their role in changing culture.

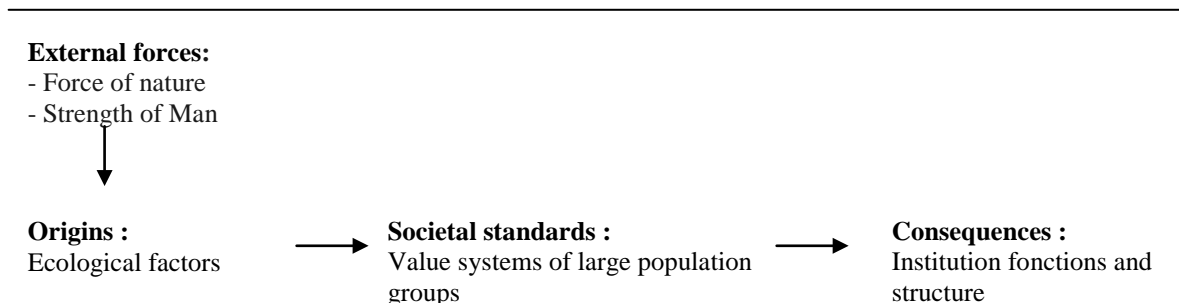
Steward (1955) shows a multilinear evolution which envisages the recurring regularity of forms and functions in different cultural areas but which come under comparable ecological conditions. The author suggests therefore the hypothesis of "cultural core" which is defined as the set of cultural characteristics that are able to link people more directly to their environments and which are necessary for their livelihood and their basic economic activities. These cultural characteristics include technologies and tools that are determined by environmental conditions and are

developed to adapt to the ecological conditions and to exploit the surrounding environment. Steward concludes that cultural diversity is due to ecological diversity, which justifies the fact that different cultures employ different technologies and livelihood practices. He also demonstrates that societies sharing the same cultural core may be very different from each other due to the secondary cultural traits that stem from the cultural core and are caused by historical factors. The cultural ecology theory was later developed to lead to the ecological anthropology approach that places the human being as a culturally driven actor within ecosystems (Vayda and McCay, 1975, Davidson-Hunt and Berkes, 2003). This approach considers that people interact with their environment affected by rituals, social institutions, communities and economies and will affect them in return.

Later, adaptive dynamics extended the field of cultural ecology research by including system and feedback concepts (Bennet, 2005). This vision follows a microsocial perspective focused on the individual's role. It assumes that the balance is not due to the automatic and unconscious process of social or cultural processes, but rather to individuals' choices and decisions. Therefore, the nature of society and the environment is a consequence of human behavior that follows a dynamic of that environment and aims to achieve goals and meet specific needs. Based on these theoretical frameworks, we expect that:

H0: There is a significant relationship between cultural dimensions and environmental factors.

Applied to our study, the cultural ecology theory supposes to decode cultural dimensions through the environmental factors of a given country. Indeed, Hofstede (1980) considers that ecological factors are a consequence of the human nature and forces, and are at the origin of societal norms which determine the institution's structure and functions (see figure 1).



Source: Hofstede (1980, P. 27)

Figure 1: Cultural Model

b) *POWD determinants*

POWD means the extent to which subordinates accept that power in institutions to be unequally distributed. It is measured by the subordinate's perception of the chief's power. Hofstede (1980) emphasizes the historical heritage notion of culture. He linked *POWD* to several characteristics such as the country geographical position, the population size, inequality in the sharing wealth and the weight of history. In the same way, the author establishes that the social organization is likely to guide the culture of a given country. That is why Hofstede (1980) states that *POWD* can be determined by the country's wealth. The author concludes that the wealthier the country, the lower the *POWD*. In addition, Hofstede (1980) links *POWD* degree of a given country to its population size. He argues that the larger the size of the population, the higher the degree of *POWD*. Indeed, the author argues that people in populous countries accept less accessible political power more than that in less populated countries. Hence the following hypothesis:

H1: POWD is negatively related to country wealth and positively related to population size.

c) *UAV determinants*

UAV means extent to which individuals feel threatened by uncertainty and unstructured situations. It deals with the way that society approach risk. *UAV* is expressed by need for formalities, predictability and security measures. Therefore, Hofstede (1980) considers three components of *UAV* degree: the need for rules, the desired stability of employment and stress in everyday life. Hofstede (1994) argues that technology, education, laws and rules help to mitigate uncertainties caused by nature. Thus, he considers that *UAV* can be identified by the extent of adoption of new technologies. Indeed, the greater the degree of *UAV*, the more the society adopts new technologies to overcome uncertainties. Hofstede (1980) also links *UAV* to attention attributed to education. He argues that the greater the degree of *UAV*, the more the society is interested to education. In addition, Noravesh and *al.* (2007) link security measures to economic stability. They argue that countries characterized by a high *UAV* do not have economic stability and do not prefer investment in financial markets. Hence the following hypothesis:

H2: UAV is positively related to new technologies adoption degree and attention given to education and, UAV is negatively related to investment in financial markets and economic stability degree.

III. RESEARCH METHODOLOGY AND DATA MEASUREMENT

a) *Data measurement*

For Hofstede (1980), the wealth of a given country can be identified through a more modern

technology, a less traditional agriculture, a development of urbanism, a better education system that favors an increase of the middle class. Development in technology is linked to those of information and communication. Hence, these can reflect the extent of modernization of technology in a given country. The number of Internet users, the number of fixed broadband Internet subscriptions per 100 people and the number of mobile subscriptions per 100 people are used to measure the degree of adoption of new technologies. Moreover, Sudarwan and Fogarty (1996) argue that the transition from technology to industry was a necessity for countries seeking to gain more wealth. Hence, the contribution of the agriculture sector to the wealth of the countries in our sample is measured by the value added of the agriculture sector in relation to *GDP*. The degree of urbanization and interest attributed to education are measured respectively by the urbanization rate, the gross enrollment rate and the average duration of schooling. The population size is measured by the logarithm of the total number of inhabitants of our sample countries.

The level of economic stability can be determined through the exchange rate and *GDP* fluctuation. Noravesh and *al.* (2007) also argue that the importance of equity portfolio investment can reflect the extent of the interest allocated to investment in financial markets.

We summarize these indicators as well as the means of their measurements as following:

Table 1: Cultural dimensions proxies

Proxies	Variables	Measures	Expected signs
POWD indicators			
Wealth	<i>AGRI</i>	Ratio agriculture sector to GDP	+
	<i>URBA</i>	Urbanization rate	-
	<i>INTE</i>	Internet users per 100 persons	-
	<i>BROAD</i>	Broadband Internet subscriptions per 100 persons	-
	<i>GSM</i>	GSM subscriptions per 100 persons	-
	<i>LITER</i>	Literacy rate	-
	<i>SCHO</i>	Average years of schooling	-
Population size	<i>POPU</i>	Naperian logarithm of total population	+
UAV indicators			
Modern technologies	<i>INTE</i>	Internet users per 100 persons	+
	<i>BROAD</i>	Broadband Internet subscriptions per 100 persons	+
	<i>GSM</i>	GSM subscriptions per 100 persons	+
Educational system	<i>LITER</i>	Literacy rate	+
	<i>SCHO</i>	Average years of schooling	+
Economic stability	<i>CURR</i>	Fluctuations of foreign currency rate	+
	<i>FGDP</i>	Fluctuation in GDP	+
	<i>SAVING</i>	Gross Domestic Saving	+
Investment in financial markets	<i>INVEST</i>	Volume of investment in stock market	-

The study measurement model is the following :

$$V_i = \lambda_i * F_a + \varepsilon_i$$

Where; V_i = obvious variables i which are ecological determinants; F_a = latent variables a which are cultural dimensions; λ_i = factor contributions of manifest variables in the determination of latent variables and ε_i = Measurement error of i .

Conceptual framework is represented as following:

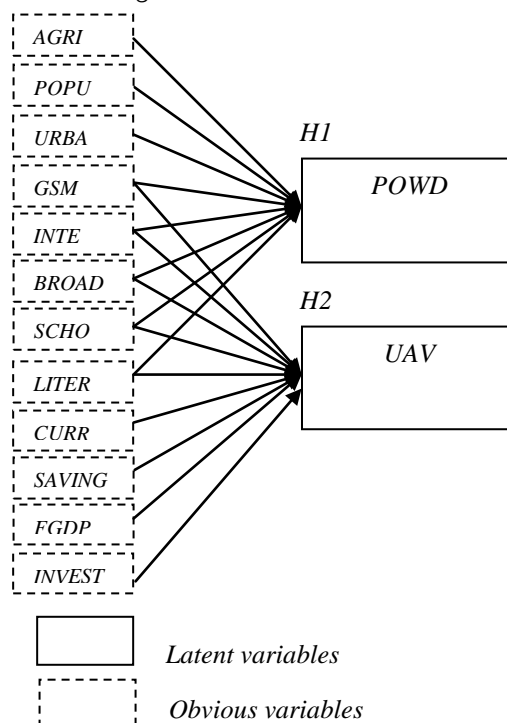


Figure 2: Conceptual framework

b) Research methodology

The study aims to construct a conceptual model for identifying cultural dimensions based on cultural ecology theory. This objective has been achieved by using *SEM* method under *LISREL* (Linear Structural Relationship) approach. This methodology was preferred to others because in the first hand, cultural dimensions have an unobservable character. In the second hand, these dimensions have been measured approximately by observable variables. Obviously, these constructs measure may contain measurement errors. That is why, it is more appropriate to use a method taking these measurement errors into account. Finally *LISREL* approach is chosen because it reduces the arbitrariness of selecting items determining latent variables. Moreover, it provides confirmatory factor analysis aiming to test the theoretical constructs validity. Our study has been conducted on a sample of socioeconomically different backgrounds (France, Canada and Tunisia) over the period going from 2003 to 2009.

Using *LISREL* approach requires the reliability and the validity of the structural equations model (Churchill, 1979). These tests are conducted through principal component analysis (*PCA*) and confirmatory factor analysis (*CFA*) also called principal axis factoring. *PCA* and *CFA* methods aim to identify structure within a set of items which are difficult to interpret by finding interrelations between them in order to find a smaller number of unifying factors. *PCA* is a part of multivariate descriptive analyzes and aims to reduce information while minimizing losses. It consists of the transition from a large number to a smaller number of items measuring the same phenomenon and, consequently, to condensing the information related to a construct that these items aim to define. *CFA* supports the *PCA* in

order to validate its analysis. Validity means that a given measure is able to describe studied phenomenon (Hair et al., 1998). *CFA* is conducted to confirm the psychometric quality of the *PCA* findings (Evrard et al., 2003). The confirmatory phase is therefore aiming at testing the assessments of fit of the global model and the constructs' content validity. In the confirmatory analysis, the measurement scales are known *a priori*. In addition, this analysis takes into account measurement errors. The model takes the following form: $Data = Model + measurement\ error$. Hence, the smaller the measurement error, the more the model adjusts to the data. The meaning of *PCA* and *CFA* analysis depends on the meeting of some requirements which we are going to examine by several tests.

IV. RESULTS AND DISCUSSION

a) The PCA results

PCA phase consists in analyzing dimensionality, reliability and internal consistency of measuring instruments. *PCA* results for *POWD* are reported in table 2. This table shows that the data relating to the measurement of this dimension are factorizable. Indeed, as shown in table 2, most of the inter-item correlations of the dimension *POWD* are greater than 0.5. In addition, this table shows a *KMO* index of 0.590 with significant *Bartlett sphericity*. In addition, the community indices found vary from 0.602 for the *GSM* item to 0.984 for the *POPU* item. These findings show the importance of the inclusion of these variables in *POWD* dimension's determination. The *Cronbach's alpha* of *POWD* dimension is 0.819, which gives information on the internal consistency of measurement scale and proves that the data retained reflect the studied phenomenon.

Table 2: PCA for *POWD*scale

	<i>AGRI</i>	<i>HABI</i>	<i>URBA</i>	<i>GSM</i>	<i>INTE</i>	<i>BROAD</i>	<i>SCHO</i>	<i>LITER</i>
<i>AGRI</i> 1,000								
<i>HABI</i> 0,068	1,000							
<i>URBA</i> -0,092	0,976	1,000						
<i>GSM</i> 0,075	0,701	0,614	1,000					
<i>INTE</i> -0,669	0,523	0,676	0,305	1,000				
<i>BROAD</i> -0,692	0,412	0,550	0,319	0,936	1,000			
<i>SCHO</i> -0,534	0,765	0,878	0,394	0,913	0,814	1,000		
<i>LITER</i> -0,191	0,950	0,993	0,571	0,740	0,625	0,923	1,000	
community 0,885	0,984	0,971	0,602	0,953	0,889	0,967	0,967	
<i>Bartlett sphericity</i> = 402,317 sign. 0,000								
<i>KMO</i> = 0,590								
<i>Cronbach's alpha</i> = 0,819								

Table 3 provides correlations between items determining *UAV* dimension. These correlation coefficients vary between 0.007 and 0.935. This table also shows *KMO* indices of 0.511 and a significant *Bartlett sphericity*, which shows that the data relating to the determination of *UAV* dimension are factorizable. The table also shows the community indices relating to the determination of *UAV* dimension. These indices provide information on the representation quality of the

items. Indeed, these are all greater than 0.7 exception for *GSM* item. However, we decide to retain this indicator given the importance of its inclusion in our study. This will be taken into account when interpreting results. *UAV* dimension shows a *Cronbach's alpha* of 0.751, which gives information on the internal consistency of the items determining *UAV* dimension and proves that the data retained reflect the studied phenomenon.

Table 3: PCA for *UAV* scale

	<i>GSM</i>	<i>INTE</i>	<i>BROAD</i>	<i>SCHO</i>	<i>LITER</i>	<i>INVEST</i>	<i>CURR</i>	<i>FGDP</i>	<i>SAVING</i>
<i>GSM</i>	1,000								
<i>INTE</i>	0,305	1,000							
<i>BROAD</i>	0,319	0,936	1,000						
<i>SCHO</i>	0,394	0,913	0,814	1,000					
<i>LITER</i>	0,571	0,740	0,625	0,923	1,000				
<i>INVEST</i>	0,124	0,092	0,104	0,231	0,209	1,000			
<i>CURR</i>	-0,080	-0,049	-0,264	0,112	0,168	-0,007	1,000		
<i>FGDP</i>	0,212	0,216	0,022	0,361	0,415	0,155	0,690	1,000	
<i>SAVING</i>	0,399	0,453	0,249	0,647	0,824	-0,075	0,245	0,341	1,000
community	0,309	0,862	0,868	0,951	0,932	0,931	0,828	0,802	0,740
<i>Bartlett sphericity</i> = 194,381 sign. 0,000									
<i>KMO</i> = 0,511									
<i>Cronbach's alpha</i> = 0,751									

b) Confirmatory factor analysis (CFA)

CFA is conducted to confirm the psychometric quality of PCA results. Our confirmatory phase is there fore aimed at testing the Goodness of fit of the global model and the validity of the constructs content. Validity means that a given measure is able to describe the studied phenomenon. CFA takes into account measurement errors.

i. Goodness of fit results

The model degree of fit s verified through absolute fit indexes, incremental fit indexes and

parsimony fit indexes. Goodness of indexes of cultural model are summarized in Table 4. CFA results are adequate: *Chi-square/degree of freedom*=2.49, *GFI*=0.99, *RMSEA*=0.05 and *CFI*=0.98. This means that unobservable variables are adequate to the theoretical model and assumes that *POWD* and *UAV* in the sample study can be measured through economic and demographic indicators. Hence, our *H0* is confirmed.

Table 4: Goodness of fit

<i>Goodness of fit indexes</i>	<i>Value</i>
<i>absolute fit indexes</i>	
<i>Chi-square/degree of freedom</i>	2,49
<i>GFI</i>	0,99
<i>AGFI</i>	0,98
<i>RMSEA</i>	0,05
<i>incremental fit indexes</i>	
<i>NFI</i>	0,98
<i>CFI</i>	0,98
<i>parsimony fit indexes</i>	
<i>AIC</i>	32,49
<i>CAIC (saturated model)</i>	87,32 (112,25)

ii. *Testing validity results*

The validity of constructs means the degree of fit between what the data measures and what they are meant to measure. Validity is measured by the *Rhô* of

convergent validity. Testing validity results are reported in table 5.

Table 5: Constructs validity

	<i>POWD</i>	<i>UAV</i>
<i>Rhô of convergent validity</i>	0,98	0,82

c) *Hypothesis Tests*

Table 6 shows that all unobservable variables significantly contribute to the determination of *POWD* dimension. The absolute values of these factor contributions vary between 0.0446 and 1.703 with significant absolute values of t Student's and measurement errors close to 0.

Findings show that country wealth positively influences the *POWD* degree. In fact, *POWD* is negatively related to *AGRI* ($\lambda = -0.0664$, $T = -51.962$, $\epsilon = 0.00128$) and positively related to *URBA* ($\lambda = 0.0498$; $= 48.215$, $\epsilon = 0.00103$), *GSM* ($\lambda = 0.0446$, $T = 12.180$, $\epsilon = 0.00366$), *INTE* ($\lambda = 0.181$, $T = 38.817$, $\epsilon = 0.00468$), *BROAD* ($\lambda = 0.145$, $T = 41.613$, $\epsilon = 0.00349$), *SCHO* ($\lambda = 1.703$, $T = 48.382$, $\epsilon = 0.0352$) and *LITER* ($\lambda = 0.127$, $T = 41.373$, $\epsilon = 0.00306$). This means that the wealthier the country, the greater the *POWD*. This

can be explained by the fact that wealth favors superiority behavior and thus, promotes power distance. Moreover, results show that *POPU* positively influences *POWD* degree ($\lambda = 0.224$, $T = 55.326$, $\epsilon = 0.00405$), which implies that the more the country is populated, the fewer individuals achieve power.

In addition, we found that the most influential factor in determining the *POWD* extent is the degree of attention attributed to education followed by the population size and the degree of technological development. Never the less, findings show a negligible effect of urbanization rate and the agriculture contribution to the wealth of the sample countries. This maybe explained by the fact that these two indicators showed weak correlations with some items at the level of *PCA*.

Table 6: *POWD* indicators

Indicators	Items	Expected signs	t-Test	Factor contributions	Error
Country wealth	<i>AGRI</i>	+	-51,962	-0,0664	0,00128
	<i>URBA</i>	-	48,215	0,0498	0,00103
	<i>GSM</i>	-	12,180	0,0446	0,00366
	<i>INTE</i>	-	38,817	0,181	0,00468
	<i>BROAD</i>	-	41,613	0,145	0,00349
	<i>SCHO</i>	-	48,382	1,703	0,0352
	<i>LITER</i>	-	41,373	0,127	0,00306
Population size	<i>POPU</i>	+	55,326	0,224	0,00405

Findings reveal significant factor contributions for all indicators of the *UAV* degree (contributions whose absolute values vary between 0.00519 and 0.420) with measurement errors significantly close to zero.

Obviously, we found that *UAV* is negatively related to the *GSM* ($\lambda = -0.113$, $T = -34.600$, $\epsilon = 0.00434$), *BROAD* ($\lambda = -0.0927$, $T = -52.969$, $\epsilon = 0.00175$) and *INTE* ($\lambda = -0.0936$, $T = -40.231$, $\epsilon = 0.00233$). This can be explained by the fact that new technologies help to overcome uncertainty. In addition, results show that this cultural dimension is negatively related to *LITER* ($\lambda = -0.0166$, $T = -23.052$, $\epsilon = 0.00072$)

and *SCHO* ($\lambda = 0.170$, $T = 34.621$, $\epsilon = 0.00490$). This result reveals that a good education system contributes to reducing the ambiguity and leads to *UAV* moderation in our sample countries.

These last two results can be explained by the cultural ecology theory under its adaptive dynamic perspective. Indeed, this theory indicates, on the one hand, that technologies and strategic actions are voluntarily implemented by individuals following the identification of their cultural needs. On the other hand, the cultural ecology theory suggests that, following the creation of the means necessary for subsistence, new

cultural needs arise according to the new environment . We also found that *UAV* is positively related to *CURR* ($\lambda = 0.0425$, $T = 34.559$, $\epsilon = 0.00123$), *FGDP* ($\lambda = 0.0459$, $T = 21.214$, $\epsilon = 0.00216$) and *SAVING* ($\lambda = 0.420$, $T = 14.175$, $\epsilon = 0.0296$). This means that countries that do not have economic ability are more vulnerable to uncertainty.

Finally, findings show that *INVEST* is positively related to the *UAV* degree of ($\lambda = 0.00519$, $T = 16.079$, $\epsilon = 0.000323$), however, this effect remains very weak. This implies that attention given to investing in financial markets is no longer just culture-related. Indeed, with financial markets, companies became increasingly

interested in it. This is due to the increasing flexibility of the rules governing access to foreign markets and the reduction of barriers to trade in financial services.

Results show that the most important determinants of the *UAV* degree are the degree of attention attributed to education and the level of economic stability. They also reveal that new technologies adoption has a weaker role in determining this cultural dimension. Although the holding rate of *GSM* shows a greater correlation, this indicator is not taken into account because of its low community index at the level of *PCA*.

Table 7: *UAV* indicators

Indicators	Items	Expected signs	t-Test	Factor contributions	Error
New technologies adoption	<i>GSM</i>	+	-34,600	- 0,113	0,00434
	<i>BROAD</i>	+	-52,969	- 0,0927	0,00175
	<i>INTE</i>	+	-40,231	- 0,0936	0,00233
Attention given to education	<i>SCHO</i>	+	-34,621	- 0,170	0,00490
	<i>LITER</i>	+	-23,052	- 0,0166	0,00072
Economic stability	<i>CURR</i>	+	34,559	0,0425	0,00123
	<i>FGDP</i>	+	21,214	0,0459	0,00216
	<i>SAVING</i>	+	14,175	0,420	0,0296
Investment in financial markets	<i>INVEST</i>	-	16,079	0,00519	0,000323

V. CONCLUSION

The study proposes a conceptual framework measuring cultural dimensions through ecological indicators and informs about items that are able to determine these dimensions.

Cultural dimensions considered in our study are power distance and uncertainty avoidance. Findings show that cultural dimensions indicators' have evolved and are no longer the same identified by Hofstede (1980). This change in culture origins is justified by environment evolution's. Indeed, referring to the cultural ecology theory under its adaptive dynamics, technologies and strategic actions are voluntarily implemented by individuals following the identification of their cultural needs. However, after the creation of the means necessary for subsistence, new cultural needs arise according to the new environment. Some indicators impact is no longer the same as identified in Hofstede studies'. For example, new technologies development and adoption, and education systems development may reduce perplexity. This study was limited in development indicators identified in prior researches. Regarding future research, the impact of other development indicators can be studied in order to enrich the conceptual framework developed by our

research. Indeed, due to the unobservable character of cultural dimension, we assume that *SEM* is a relevant method in determining items related to these dimensions.

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The Impact of Corporate Governance on Bank Performance: Empirical Evidence from Bangladesh

By Md. Ataur Rahman & Jahurul Islam

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Abstract- This paper effort to find out the impact of corporate governance practices on bank performance in Bangladesh. In this paper, we examine 85 observations from 17 publicly traded commercial banks listed in Dhaka Stock Exchange (DSE) over the period of 2013-2017. We use the econometric model and pooled ordinary least square regression analysis to find out the correlations and regression among independent variables (size of the board, board composition, and chief executive officer status) and dependent variables (return on asset, return on equity and earnings per share). This research reveals that the board of director has a positive significant impact on ROA, ROE, and EPS. Independent board of director has a positive significant impact on ROE and EPS. Chief executive officer has a positive significant impact on ROA. In addition, most of the cases large bank size positively affecting the performance of Bangladeshi bank. Finally, there is a positive significant relationship between corporate governance and bank performance in Bangladesh.

Keywords: corporate governance, board of directors, ROA, ROE, EPS.

GJMBR-C Classification: JEL Code: F65



Strictly as per the compliance and regulations of:



The Impact of Corporate Governance on Bank Performance: Empirical Evidence from Bangladesh

Md. Ataur Rahman ^α & Jahurul Islam ^ο

Abstract- This paper effort to find out the impact of corporate governance practices on bank performance in Bangladesh. In this paper, we examine 85 observations from 17 publicly traded commercial banks listed in the Dhaka Stock Exchange (DSE) throughout 2013-2017. We used the econometric model and pooled ordinary least square regression analysis to find out the correlations and regression among independent variables (size of the board, board composition, and chief executive officer status) and dependent variables (return on asset, return on equity and earnings per share). This research reveals that the board of director has a significant positive impact on ROA, ROE, and EPS. Independent board of director has a significant positive impact on ROE and EPS. Chief executive officer has a significant positive impact on ROA. Also, most of the cases large bank size positively affecting the performance of Bangladeshi bank. Finally, there is a significant positive relationship between corporate governance and bank performance in Bangladesh. The findings of the paper will help the Bangladeshi banks to ensure proper corporate governance practices to optimize the performance of the banks leads to maximization of the stockholder's wealth.

Keywords: corporate governance, the board of directors, ROA, ROE, EPS.

I. INTRODUCTION

In current time, banking sector financial crisis is common issues around the world. One of the major reasons behind this problem is an inadequate practice of corporate governance. Corporate Governance is the technical, process and relations by which organization are regulated and directed towards the wealth maximization of shareholders. All organization should have practiced good corporate governance (Steger and Amann, 2008). This paper demonstrates the effects on corporate governance and banking sector performance. A lot of studies have on corporate governance but few on banking corporate governance (e.g., Adams and Mehran, 2005; Caprio et al., 2007; Levine, 2004; Macey and O'Hara, 2003). This all studies are analyzed on the proper corporate governance practices. However, banking business has become more complex. It is impossible to monitor all of

the activities of banks and its manager decision. That is why banking business is frequently facing the crises. Most of the crises are happened due to the lack of practices of corporate governance. In Bangladesh, corporate governance practices are a rare case. So, Bangladeshi bank faces financial crises in several times. Generally, banks are subjected to dual monitoring system by the regulatory body and bank board. The monitoring of the regulatory authorities and bank board provides a sound banking governance practice (John, Mehran and Qian, 2003). These practices develop the performance of the banking companies. Banking governance practices are mobilized by Bangladesh Bank. Bangladesh Bank capped the number of director of a bank. It is also set up a rule of establishing the private commercial bank on its official website.

To maintain the good corporate governance, the legal act and law were given by Bangladesh Bank like the Banking Companies Act 1991, the Security and Exchange Commission Act 1993, The Financial Institutions Act 1993, etc. It is good news that corporate governance practices in Bangladesh have improved day by day in the banking industry. Corporate governance notification is issued by the Securities and Exchange Commission (SEC) in 2006. It specifies the board composition, Chief Executive Officer (CEO) status.

II. OBJECTIVES OF THE PAPER

The main objective of this research is to find out the impact of corporate governance on bank performance in Bangladesh. To accomplish the main objective these papers also have the following specific objectives:

- Impact of board size on bank performance.
- Impact of board composition on bank performance.
- Impact of Chief Executive Officer on bank performance.
- Impact of bank size on bank performance.

III. REVIEW OF RELATED LITERATURE AND HYPOTHESIS DEVELOPMENT

There are so many articles on corporate governance and bank performance. They all try to consider numerous factors that affect the firm

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performance. In this paper, we mainly consider some factors that are bank size, number of board of directors, number of independent member of a board of directors, CEO's position status. We are tried to use this specific factors and show how it affects the firm performance.

a) *Board Size*

Board size means the number of member in the bank board. There are so many literatures on board size and bank performance. They are negatively related with each other. Generally, board sizes vary on firm size and nature of the business (Dehaence, De Vuyst, and Oogne, 2001). It also varies in different countries. When board size is too large, then different co-orientation problem arises. The CEO is lost their efficiency, and that lead the poor performance (Eisenberg et al., 1998; Fernandez et al., 1997). The empirical study also proves the negative relationship between board size and bank performance. Large board paves the way of bad performance (Jensen, 1993; yermack, 1996; Eisenberg, Sundgren and Wells, 1998; Dalton, Daily, Ellstrand and Johnson, 1998; Singh and Davidson, 2003; de Andres, Azofra and Lopes, 2005; Cheng, 2008). Mak and Yuanto (2005) provided the inverse relation on board size and firm value. They have used data in Malaysia and Singapore. Agency theory provides us an idea, about the conflict between shareholders and managers and its, also provides the tools how we should monitor the conflict and increases the firm performance (Fama and Jensen, 1983). That's means proper corporate governance increase banks efficiency.

Finally, Mak and Kusandi (2005) argued the positive relationship between small firm size and performance. So, from the prior literature, we finally say that optimal board size is positively related to the firm performance. But large boards are negatively, and small boards are positive affects the bank performance. Most of the researcher believed that large board size is increased the banks monitoring power, but it is devalued by lack of communication and decision making inefficiency. So we can say, optimal board size positively impacts on banks performance.

b) *Board Composition*

Board Composition is shown the number of independent, non-independent directors on the board. This combination also affects bank performance. Boards are assigned to control the internal monitoring and enhance the effectiveness of the organization. So board composition is another vital part of bank performance. In Bangladesh SEC have specified the board composition in (Feb. 20, 2008) its notification. At least one-tenth of the total number of companies think to be minimum one. According to Chiang (2005) companies performance is enriched if we keep considering on board composition. Independent board directors impact positive effects on the bank performance. There are some studies that show a

negative impact on independent directors and firm performance (Adams and Mehran, 2012; Andres and Vallelado, 2008). Some authors provide a positive relationship between non-independent directors and firm performance. They are showed that if the directors are non-independent. Then the amount of agency problem is decreased (Williamson, 2002; Jenson and Meekling, 1976; Baysinger and Hoskisson, 1990). Empirical studies suggest that if the directors are independent, then bank performance is increased because of monitoring activities are developed that lead to better performance. Much existing literature proposes that there is a positive relationship between some independent board of directors and the value of the firm. That is, when the independent board of directors is not involved in banking activities, then it affected wealth maximization positively (e.g., Cornett et al., 2008; Baysinger and Butler, 1985; and Ravina and Sapienza, 2009).

c) *Chief Executive Officer Status*

The duality of CEO and chairman also affect the firm performance when the chairman and CEO are the same entity that increased the value of the firm (Brickley et al., 1997). The works become easy when the same person is chairman and CEO position. But now-a-days most of the frauds are occurred due to when chairman and CEO are the same people (e.g., Enron, WorldCom). According to Beasley et al. (1999), most of the frauds are involved when the same person held in two positions. Empirical studies suggest that, if we can separate the position of chairman and CEO then agency problem will be resolved, and firm performance are increased. When firm's decisions are taken by two persons in two different positions in Chairman and CEO, the firm can increase its performance (Larcker et al., 2007). Most of the agency problem decreases the firm value when we keep the same person in two positions (Carpeto et al., 2005). So if we keep two people on two positions, then we hope that the value of the banks will be increased.

d) *Bank Size*

Bank size has a potential impact on bank performance. Bank characteristics and bank performance are the relevant elements that depend on each other. Any bank efficiency is closely related to bank size. Bank size increase has a positive impact on the bank. Through increasing bank size, a bank can exercise good control over efficiency and that also increase the bank performance (Molyneux and Iqbal, 2005). An increasing bank size also impacts on the economy. Increasing bank size leads to develop the performance of the bank (e.g., Akhavein et al., 1997; Bourke, 1989; Molyneux and Thornton, 1992; Bikker and Hu, 2012; Goddard et al., 2004). Sometimes increased bank size has a negative impact on bank performance too.

e) *Hypothesis*

H_1 : There is a positive relation between optimal board size and Bangladeshi banks performance.

H_2 : There is a positive relation between the outside board of directors and Bangladeshi banks performance.

H_3 : There is a positive relation between Bangladeshi banks performance and CEO status. But it happens when CEO and Chairman are separated person.

H_4 : Bank size positively impacts on Bangladeshi banks performance.

IV. RESEARCH METHOD AND ECONOMETRIC MODEL

a) *Data and Sampling*

To find out the impact of corporate governance and bank performance in listed banking companies of Bangladesh, 85 secondary observations are taken from annual reports of 17 banks listed in Dhaka Stock Exchange (DSE) during 2013-2017. Panel data are used to calculate the performance of the banking companies in Bangladesh. Data are taken which fulfill the research criteria otherwise rejected.

b) *Econometric Model and Variables Specification*

Multiple linear regression model is used on panel data with pooled Ordinary Least Square (OLS) estimator. Descriptive statistics, correlation matrix, and pooled OLS regression output are used to analyze the data. The equation of the regression model that is used in this paper is as follows:

$$BP_{it} = \alpha + \beta_1 BSM_{it} + \beta_2 BOD_{it} + \beta_3 IBM_{it} + \beta_4 CEO_{it} + e_{it}$$

Where,

α = constant;

β_1 to β_4 = Coefficient of determinants of explanatory variables;

i (banks number) = 1.....17;

t (time-interval)=1.....5;

e = Error term.

Banks performance (BP) is the dependent variable and measured by the following three ratios:

- Return on assets (ROA). It is calculated by the net profit of the bank divided by the total assets.
- Return on equity (ROE). It is calculated by the net profit of the bank divided by the shareholder's total equity.
- Earnings per share (EPS). It is calculated by the net profit of the bank divided by the total number of outstanding shares.

The independent variables that are considered to measure the Bangladeshi bank's performance are shown below:

- LBSM: Banks size measure. It is the natural logarithm of the bank's total assets.
- BOD: Number of Board of directors of the banks.
- IBM: Independent Board of directors of the banks.
- CEO: It is a binary variable it equal one if chairman position and Chief Executive Officer (CEO) position is separated otherwise it is zero.

V. FINDINGS AND ANALYSIS

a) *Statistical Descriptions*

Descriptive statistics of the variables that are used in the model are shown in Table 1. The table shows the corporate governance and bank performance by some specific variable effects over some time. The mean value of return on asset and return on equity are shown positive effects on the bank performance and is an increased trend notifying by ROA and ROE are 1.02% and 12.27% respectively. Bank size means 5.34 million, and the number of board of directors is 14.58 on an average. It is in the stable format set by the Bangladesh Bank.

Table 1: Descriptive statistics of variables

Variable	Observation	Mean	Std. Dev.	Min	Max
ROA	85	1.028118	0.457562	0.01	2.36
ROE	85	12.27671	3.925215	0.13	22.16
EPS	85	2.647412	1.022058	0.04	6.14
LBSM	85	5.344132	0.189899	4.373067	6.18678
BOD	84	14.58333	4.107614	7	23
IBM	84	2.02381	1.728403	0	11
CEO	84	0.952381	0.214238	0	1

Source: Results obtained (STATA output) by the authors

The mean value of the independent board of directors is 2.02%. All the bank hold the rules, for keeping the specific number of independent directors of the banks.

b) Correlation Matrix

Nature of correlation among dependent and independent variables and its direction is presented in the following Table 2. ROA has positive correlation with

LBSM($r = 0.0032$), BOD ($r=0.0519$), IBM ($r=0.1369$) and CEO ($r=0.2594$). ROE has positive correlation with BOD ($r=0.0048$), IBM ($r=0.077$) and CEO($r=0.047$). Where ROE has a negative correlation with LBSM ($r=-0.1644$). Finally, EPS has a positive correlation with IBM ($r=0.2926$). Where EPS has negative correlation with LBSM ($r=-0.1613$), BOD ($r=-0.0137$) and CEO($r=-0.0285$).

Table 2: Correlation matrix: 2013-2017

	ROA	ROE	EPS	LBSM	BOD	IBM	CEO
ROA	1						
ROE	0.6313	1					
EPS	0.5208	0.7597	1				
LBSM	0.0032	-0.1644	-0.1613	1			
BOD	0.0519	0.0048	-0.0137	-0.026	1		
IBM	0.1369	0.077	0.2926	-0.2292	-0.0766	1	
CEO	0.2594	0.047	-0.0285	0.0059	-0.0502	0.0031	1

Source: Results obtained (STATA) by the authors

c) Regression Results and Description

We use pooled OLS method to find out the regression results. We measure the bank's performance by ROA, ROE, and EPS. The independent variables are the board of directors, independent board member, CEO status, and bank size measured by total assets. The coefficient of BOD and CEO has a positive impact on ROA at 5% significance level. That supports our hypothesis. The coefficient of BOD and IBM has a positive impact on ROE that means the board of directors and an independent board member can play a positive role in bank performance. This result also supports the prior hypothesis. LBSM, BOD, and IBM coefficients have a positive impact on EPS. Our results

are also supported by some related literature that is discussed before. LBSM and IBM have a negative relation with ROA. This result is also matched with the findings of (Hoque et al., 2013). The coefficient of CEO has a negative impact on ROE that is mismatched with the given hypothesis. LBSM has positive effects on ROE. CEO coefficient is negatively impacted by EPS that is not satisfied with this paper hypothesis. Regression results in this paper partially supported by Al-Manaseer et al., (2012). The results R^2 we find on ROA is 0.2250 that is also fitted with the model. R^2 is also getting at 0.2579 and 0.2010 for ROE and EPS respectively. This result is also copied with the best fit results with some prior literature.

Table 3: Result of Pooled OLS regression analysis

	ROA	ROE	EPS
α	-0.002167	-6.899774	-2.96048
LBSM	-0.058313	1.188077	0.525756
BOD	0.058301*	0.957755*	0.188896*
IBM	-0.022391	0.604568*	0.16665*
CEO	0.559076*	-2.526242	-0.321102
R^2	0.2250	0.2579	0.2010
No. of Groups	17	17	17
Observation	84	84	84

* Statistically significant at 5% level

Source: Results obtained (STATA output) by the authors

VI. CONCLUSION

This research finds out the relationship between corporate governance and bank performance and explores the impact of corporate governance on bank performance to what extent. We take panel data and OLS estimation to test the hypothesis. This research finds the positive relationship of an outside board member, CEO status and board of directors on the profitability of publicly traded banks in Bangladesh. The bank size has both positive/negative influence on bank performance by ROA, ROE, and EPS but not statistically significant. This paper offers the proper guideline of good corporate governance practices and increases the performance of banking companies in Bangladesh.

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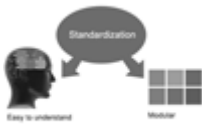
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4. Manuscript to be submitted must include keywords, an abstract, a paper title, co-author(s) names and details (email address, name, phone number, and institution), figures and illustrations in vector format including appropriate captions, tables, including titles and footnotes, a conclusion, results, acknowledgments and references.
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6. Proper permissions must be acquired for the use of any copyrighted material.
7. Manuscript submitted *must not have been submitted or published elsewhere* and all authors must be aware of the submission.

Declaration of Conflicts of Interest

It is required for authors to declare all financial, institutional, and personal relationships with other individuals and organizations that could influence (bias) their research.

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- Words (language)
- Ideas
- Findings
- Writings
- Diagrams
- Graphs
- Illustrations
- Lectures



- Printed material
- Graphic representations
- Computer programs
- Electronic material
- Any other original work

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2. Drafting the paper and revising it critically regarding important academic content.
3. Final approval of the version of the paper to be published.

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Unless specified in the notification, the Editorial Board's decision on publication of the paper is final and cannot be appealed before making the major change in the manuscript.

Acknowledgments

Contributors to the research other than authors credited should be mentioned in Acknowledgments. The source of funding for the research can be included. Suppliers of resources may be mentioned along with their addresses.

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PREPARING YOUR MANUSCRIPT

Authors can submit papers and articles in an acceptable file format: MS Word (doc, docx), LaTeX (.tex, .zip or .rar including all of your files), Adobe PDF (.pdf), rich text format (.rtf), simple text document (.txt), Open Document Text (.odt), and Apple Pages (.pages). Our professional layout editors will format the entire paper according to our official guidelines. This is one of the highlights of publishing with Global Journals—authors should not be concerned about the formatting of their paper. Global Journals accepts articles and manuscripts in every major language, be it Spanish, Chinese, Japanese, Portuguese, Russian, French, German, Dutch, Italian, Greek, or any other national language, but the title, subtitle, and abstract should be in English. This will facilitate indexing and the pre-peer review process.

The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.



Manuscript Style Instruction (Optional)

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27" x 11", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word "Abstract" in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

Structure and Format of Manuscript

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

- a) A title which should be relevant to the theme of the paper.
- b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.
- c) Up to 10 keywords that precisely identify the paper's subject, purpose, and focus.
- d) An introduction, giving fundamental background objectives.
- e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.
- f) Results which should be presented concisely by well-designed tables and figures.
- g) Suitable statistical data should also be given.
- h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

- i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.
- j) There should be brief acknowledgments.
- k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.



FORMAT STRUCTURE

It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

All manuscripts submitted to Global Journals should include:

Title

The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

Author details

The full postal address of any related author(s) must be specified.

Abstract

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

Keywords

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, "What words would a source have to include to be truly valuable in a research paper?" Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

Numerical Methods

Numerical methods used should be transparent and, where appropriate, supported by references.

Abbreviations

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

Formulas and equations

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

Tables, Figures, and Figure Legends

Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.



Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

PREPARATION OF ELETRONIC FIGURES FOR PUBLICATION

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

TIPS FOR WRITING A GOOD QUALITY MANAGEMENT RESEARCH PAPER

Techniques for writing a good quality management and business research paper:

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of management and business then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.



6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

8. Make every effort: Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. Pick a good study spot: Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice. Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

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

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

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

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

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

19. Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

20. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.



21. Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

22. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

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

INFORMAL GUIDELINES OF RESEARCH PAPER WRITING

Key points to remember:

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

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.

Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.



- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.



Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

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

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

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

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.



Content:

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

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.



Approach:

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

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Written material: You may discuss this with your guides and key sources. Do not copy anyone else's paper, even if this is only imitation, otherwise it will be rejected on the grounds of plagiarism, which is illegal. Various methods to avoid plagiarism are strictly applied by us to every paper, and, if found guilty, you may be blacklisted, which could affect your career adversely. To guard yourself and others from possible illegal use, please do not permit anyone to use or even read your paper and file.



CRITERION FOR GRADING A RESEARCH PAPER (COMPILATION)
BY GLOBAL JOURNALS

Please note that following table is only a Grading of "Paper Compilation" and not on "Performed/Stated Research" whose grading solely depends on Individual Assigned Peer Reviewer and Editorial Board Member. These can be available only on request and after decision of Paper. This report will be the property of Global Journals.

Topics	Grades		
	A-B	C-D	E-F
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring



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