UNIVERSITY OF GHANA

LISTING OF GHANAIAN POWER UTILITIES ON THE GHANA STOCK EXCHANGE

BY

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(10701210)

A THESIS SUBMITTED TO THE UNIVERSITY OF GHANA BUSINESS SCHOOL IN PARTIAL FULFILMENT FOR THE REQUIREMENT OF THE AWARD OF A MASTER OF BUSINESS ADMINISTRATION DEGREE IN FINANCE

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ABSTRACT

The study sought to investigate whether public trust in Ghana's key power utilities (VRA, GRIDCo & ECG) would be strengthened and whether people would be interested in buying shares if they were to be listed. It also sought to determine whether the board members of the respective power utilities had the requisite expertise and skills to oversee the operations of the companies.

A survey was conducted to determine public confidence in listing power utilities on the stock market. Annual reports were used to evaluate the knowledge and skills needed to run these utilities. Guidelines from the Corporate Governance Manual (CGM) for public companies was used to aid in the identification of these skills.

According to the results of the survey, 62 % of respondents assert that the listing of power utilities would lead to an increase in the trust of those utilities. 63% also registered their interest in purchasing shares of these utilities should they be floated. These findings are significant at 5% level. An appraisal by the Board of Directors of the three key power utilities from 2009 to 2020 revealed that 96% of them met the skill requirement needed to be board members of Ghana Public Services as set out in the CGM. An analysis of the breakdown of qualifications however reported that the Information and Communication Technology (ICT) category have had low representation over the years. It is imperative that individuals with the requisite expertise are appointed as board members to provide insight into how technology can be leveraged for the efficient and smooth operations of the power utilities. The study shows public credibility and a viable opportunity to raise capital and ensure effective management if the utilities are listed.

***Keywords and phrases**: Board Members, Corporate Governance Manual (CGM), Electricity Company of Ghana Limited (ECG), Ghana Grid Company Limited (GRIDCo), Ghana Stock Exchange (GSE), Volta River Authority (VRA).*

DECLARATION

I, Stephen Opoku Agyeman, do hereby declare that, except for references to other people's work, the study herein presented is the first of its kind to be submitted to the University of Ghana Business School (UGBS) under the supervision of Dr. Charles Andoh. I take sole responsibility for any mistakes or shortcomings that may be found in this thesis.

……. ……

Stephen Opoku Agyeman DATE

(10701210)

CERTIFICATION

I hereby certify that this thesis was supervised in accordance with procedures laid down by the University of Ghana. The work has been submitted for examination with our approval as supervisors.

……. …….

DR. CHARLES ANDOH DATE

(SUPERVISOR)

DEDICATION

To my Parents and Siblings.

Who greatly influenced my decision to apply for this program and continued to encourage me throughout.

ACKNOWLEDGEMENTS

I am most grateful to the Almighty God for His protection, strength and good health throughout the course of this programme.

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LIST OF ABBREVIATIONS

GSE	Ghana Stock Exchange
ECG	Electricity Company of Ghana Limited
GRIDCo	Ghana Grid Company Limited
VRA	Volta River Authority
CGM	Corporate Governance Manual
GoG	Government of Ghana

CHAPTER ONE

INTRODUCTION

1.1 Research Background

Power Utility Companies are a section of utility companies that provide electricity services to consumers in a geographic region. The services provided could be generation, transmission or distribution. In Ghana, the generation sector is handled primarily by the Volta River Authority (VRA), a government owned company and other Independent Power Producers (IPPs) such as Sunon Asogli, Kar Power, Cenit Power and AKSA. The transmission sector is the sole responsibility of Ghana Grid Company (GRIDCo) which is a government entity. The distribution sector which involves providing electricity services to consumers is operated by the Northern Electricity Company (NEDCo) and Electricity Company of Ghana (ECG) both government entities. NEDCo serves customers in the Northern Sector of the Country, ECG provides electricity services to customers in the Southern part of the company whiles Enclave Power looks at customers in the Free Zones area in Tema.

Evidently, these power utilities are very crucial to the development and sustainment of the economy. It is therefore imperative that they operate in a profitable and efficient manner. However, over the years, many of these utilities especially the state owned ones have not performed to the level expected of them and have often required the assistance of government, which provides capital injections to the detriment of the economy. This is because; funds that could have been used in more productive areas of the economy are rather being used as bailouts for inefficient utilities. The opportunity cost of these bailouts are therefore high.

The causes of the underperformance of these power utilities have been attributed by many to weak management, interference from government especially in procurement processes and

financial profligacy. Most often than not, because the government appoints both the heads and board directors of these government owned power utilities, the management is hesitant to make the right decisions that may not be favoured by the government.

In light of the above, a number of initiatives have been introduced by successive governments to help curb the growing trend of operational and financial inefficiency by the power utilities in the country. Chief amongst them is the Private Sector Participation (PSP). The role of a PSP is to encourage private public partnership in order to encourage investment in vital sectors of the economy to enable job-creation opportunities.

1.2 Problem Statement

The power utility sector in Ghana is made up of three (3) segments. The generator segment which is handled by VRA and other IPPs, the power transmitter segment made up of GRIDCo and the power distributor segment which comprises ECG, NEDCo and Enclave Power. Electrical power is critical to many sectors of the economy such as Health, Education, Agriculture and Industry. A collapse therefore of any segment of the power sector will adversely affect the lives of citizens in many ways and effectively bring the nation to a halt.

Evidently, the three aforementioned segments of the power sector are essential to the success of any economy. It is, therefore, a national problem that the four main power utilities (VRA, GRIDCo, ECG & NEDCo) have consistently underperformed and are saddled with debt. The inability of these utilities to service loans offered them threatens to collapse the country's financial sector. The situation of these loans have arisen because the companies involved have not been profitable enough to pay of loans that they acquired with the backing of the state.

These issues have manifested in unreliable and poor quality supply of electricity to Ghanaians, both at the residential and commercial levels especially around the period from 2013-2016. The effect of which has led to the collapse of businesses and loss of employment.

For instance, (Abeberese, Ackah, & Asuming, 2017) in their research on how the 2012 – 2015 power crisis affected medium and small manufacturing firms in Ghana, revealed that, power outages have a substantial negative effect on productivity. The study also found that ways employed by small and medium manufacturing firms to deal with the power crisis (including the use of generators), were futile in reducing the adverse effect of the crisis on productivity.

According to the 2017, State Owned Enterprise Annual Aggregate Report by the Ministry of Finance, the financial performance of VRA, GRIDCo and ECG were not impressive. VRA, GRIDCo and ECG recorded net loss margins of 30.61%, 4.39% and 13.56% respectively in 2017. These losses were attributed to high indebtedness and liquidity constraints, inadequate supply of natural gas, inadequate thermal generation to complement hydro generation due to lack of funds to purchase fuel and tariff governance, amongst others." (Ministry of Finance, Ghana, 2018).

Looking at the challenges faced by the three main power utilities, it is important that these utilities find alternative strategies to become more operationally and financially efficient in order not to worsen their debt profile. One of the options that may be considered is for the power utilities especially the state owned ones is the weaning off of government's influence and managed in a more financially efficient manner with a business minded board of directors overseeing their operations.

1.3 Research Purpose

Over the years, power utilities especially state owned ones have depended on government in times of financial crises. This has led to the interference in the efficient management of the companies by government.

The aim of this research is to examine alternative ways by which power utilities in Ghana can raise enough capital to undertake projects, manage the debt they incur and manage their operations effectively. One of such approach is the listing of power utilities on the stock exchange.

1.4 Research Objectives

I. To investigate if there will be improved confidence in the Ghanaian Power Utilities from both the public and business partners if they should be listed on the Ghana Stock Exchange.

II. Assess the qualifications and skills that the Board of Directors that the Ghanaian Power Utilities have had over the years possessed.

1.5 Research Questions

I. Will there be improved confidence in the Ghanaian Power Utilities from both the public and business partners if they should be listed on the Ghana Stock Exchange?

II. Will individuals be interested in purchasing shares of Ghanaian Power Utilities?

III. What qualifications and skills did the Board of Directors that the Ghanaian Power Utilities have had over the years possess?

1.6 Significance of Study

There exists very little research in Ghana about stock exchange listing as a strategy for raising capital and ensuring effective management among power utilities. In the West,

however, this strategy is widely used to ensure that enough capital is raised to fund important projects and also instil transparency in the management of important companies like utilities.

The main Power Utilities in Ghana are saddled with debt mainly due to poor management as well poor financing decisions. It is therefore important to research into the possibility of enabling proper management of the utilities as well as generating capital to fund crucial projects.

The implications of not looking at the listing on the stock exchange option mean a continuation of the status quo, which is clearly not sustainable. The power utilities will continue to incur debt due to bad management and imprudent financial decisions and Government will consistently have to intervene and provide bailouts. This may eventually lead to the collapse of some or all these power utilities which are vital to the running of the economy. The lack of electricity to any economy is disastrous, as most domestic and industrial functions cannot be carried out without electrical power. It goes without saying therefore that a collapse of the power industry will be disastrous to the Ghanaian economy.

1.7. Scope

This scope of the study is limited to the three main public Power Utilities in Ghana namely, VRA, GRIDCo and ECG.

1.8 Organization of Study

Chapter one (1) would be made up of the research background, purpose, objective, questions significance, limitations and scope of the study. The chapter will showcase what the

intentions of the author is for the study. It will introduce the study from various angles and sets the tone for the subsequent chapters.

Chapter two (2) will discuss and review relevant literature on stock exchange listing in other jurisdictions especially in the power industry. Chapter three (3) will deal with proposed methodology for the research, the research strategy, design, type, data collection, data processing and mode of analysis.

Chapter four (4) will deal with data presentation and discussion of findings whiles Chapter five (5) will have the summary, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section will be a presentation on the conceptual, theoretical and empirical literature review of listing on a stock exchange. The conceptual review will explain what it means to be a publicly traded company in its general term as well as in connection with utilities. The theoretical review will lay down the mechanisms involved in the listing of a company on a stock exchange. The author will attempt to demonstrate through empirical literature how utilities in other jurisdictions have taken advantage of the listing process in their operations. There will also be a review of existing literature pertaining to research on the topic. The link between the literature and the study will therefore be highlighted and by so doing making a case for Ghanaian utilities taking advantage of the process.

2.2 Conceptual Review

According to the (Ghana Stock Exchange, 2019), a company is said to be listed when its securities are given approval to be traded on the Stock Exchange. The term 'security'' means any "note, stock, treasury stock, security future, security-based swap, bond, debenture, certificate of interest or participation in any profit-sharing agreement or in any oil, gas, or other mineral royalty or lease, any collateral-trust certificate, preorganization certificate or subscription, transferable share, investment contract, voting trust certificate, certificate of deposit for a security, any put, call, straddle, option, or privilege on any security, certificate of deposit, or group or index of securities (including any interest therein or based on the value thereof), or any put, call, straddle, option, or privilege entered into on a national securities exchange relating to foreign currency, or in general, any instrument commonly known as a ''security''; or any certificate of interest or participation in, temporary or interim certificate

for, receipt for, or warrant or right to subscribe to or purchase, any of the foregoing; but shall not include currency or any note, draft, bill of exchange, or banker's acceptance which has a maturity at the time of issuance of not exceeding nine months, exclusive of days of grace, or any renewal thereof the maturity of which is likewise limited" (USA's Securities Exchange Act, 2018).

There are basically two types of securities namely the equities securities and debt securities. Stocks are *equity* securities, suggesting that the owners of such securities have an ownership position—a "piece of the action"—in a corporation. The two main kinds of stocks are common stock and preferred stock. Bonds are *debt* securities. The holder of the bond has loaned out money to the enterprise (corporation or government) and has a debtor−creditor connection with the issuer of the bonds rather than an ownership interest (Rini, 2003).

The widely used security is the stock with the common stock being the preferred option. A lot of companies issue only one type of common stock. These stocks carry voting rights. Owners of the stocks (shareholders) vote for the directors they prefer and are also expected to approve a number of issues that may not be the day-to-day decisions made by officers and directors of the company. Shareholders normally approve unusual issues such as name changes, sudden changes in the company's core business, mergers or stock splits. These issues are typically taken by the shareholders during special meetings organized yearly. These meetings are usually referred to as Annual General Meetings, (Rini, 2003).

The two main reasons why investors buy stock are to receive dividends and the ability to trade their stock for more than they originally paid for thereby having a gain.

When stocks are first issued, they are sold to investors by the company. The company takes in the money and the investors in return become part owners of the company in the form of shares of common stock. This is typically referred to as the primary market. After the new shares of stock are all sold by the company, investors can trade these shares amongst themselves. These transactions, which does not involve the corporation, are executed on the secondary market (Rini, 2003).

Utilities are companies that provide amenities, mainly electricity, gas, water and in recent times internet services, to the public for both domestic and industrial use. The institutions that make available these services could either be publicly or privately. The owners of privately held utilities are usually the governments of the countries they reside. A number of them however are publicly owned. Operating a utility requires heavy capital and therefore it is important that they are run efficiently. Due to the high cost in operating a utility coupled with strict supervision over its finances, owners of these companies have had to go public (list on a stock exchange) to ensure that enough funds are secured to finance projects and ensure efficient operation of the utility.

The utilities sector in the United States of America (USA) and European countries has long attracted investors due to the less volatility in the sector and the respectable dividend payouts. According to (Investsnips, 2019), a number of Utilities have been listed on two of the largest stock exchanges in the world (New York and NASDAQ stock exchanges). There are about twenty-three (23) Electrical Utilities, eight (8) Electric & Gas Utilities and thirteen (13) Water Utilities listed on these exchanges.

There are several advantages of benefits of listing of utilities on the stock exchange, some of which include:

- Ability to raise additional funds through the issuance of stock (Gupta & Rust, 2017).
- Companies can use securities in the acquisition of other companies (Gupta & Rust, 2017).
- Stock options can be offered to potential employees, making the company attractive to top talent.
- Companies have additional leverage when obtaining loans from financial institutions (Brau & Fawcett, 2006)
- Listing of a utility on a stock exchange gives the company increased credibility with the public because the company is indirectly endorsed by having its stock traded on the exchange (Norman, 2011).

2.3 Theoretical Review

There exist a number of theories aimed at explaining the behaviours of companies listed on a stock exchange as the well as the mechanisms that go into the operation of the stock market.

Theory of Capital Structure

The decision by a company to go public can be viewed as getting an additional source for raising capital (other than banks, venture capitalists and other sources of financing) to finance their growth and expansion. The ability to get equity capital from public markets is very appealing for firms with enormous present and future investments and may have limited access to other financing alternatives due to high leverage (Manas & Manoj, 2006).

When a company is listed, the common price at which equity is sold is publicly made available to investors. The implication is that the scale of the total costs involved in the

outsiders' appraisal of the firm's projects will be minimized in a way by many unsophisticated investors being able to depend on the information they can deduce from the publicly observable share price of the listed stock of the company (Chemmanur, 1999).

Chemmanur (1999) further argues that the public equity market is viewed as a place where investors contribute to a firm's capital necessities by having a momentous portion of their wealth in the company.

Asymmetric Information Theory

The concept of Asymmetric Information as first introduced by George A. Akerlof in 1970 revolves around a scenario in which there is unequal knowledge between each party to a transaction; that one party has better information than the other party. This type of asymmetry gives birth to a disparity in a transaction (Agarwal, 2020).

Asymmetric information is an issue in financial markets such as lending and borrowing. In these markets the borrower is better informed about his financial state than the lender and this may lead to a market failure (Matagu, 2018). A typical example is when a buyer of a corporate bond is willing to pay an amount for the bond which is a reflection of the average default risk of comparable companies. Management in efficient companies with a very low default risk will, however, not be willing to sell bonds at a price, which they believe is too low. It is therefore doubtful that good companies will want to borrow in the market. On the other hand, high-risk companies will want to offer their bonds. If bond investors are aware of this, they will possibly look for other investment opportunities such as junk bonds. In the end the market for corporate bonds will not function properly (Balling & Gnan, 2013).

Balling & Gnan (2013) also suggests that asymmetric information is vital in the distribution of power between managers and shareholders of a firm, because managers always tend to know more about the company than the external owners do.

To reduce the adverse effect of information asymmetry, rating agencies can make available analysis of bond issuing companies to potential investors. These companies can therefore be classified based on their credit worthiness (Balling & Gnan, 2013).

Agency Theory

Agency theory looks at the issues companies face when there is a separation of owners and managers of firms and the attempts made to reduce these problems. This theory is useful in implementing the various governance mechanisms to control the action of the agents in especially publicly held companies (Panda, Leepsa, & M., 2017).

A public company comprises the contractual relationship between two interested parties and they are referred to as the principal and agent. The principal is the entity that owns the firm and the agents on the other had manage the business of the firm on behalf of the principal. These two parties are all part of the firm but have diverse and conflicting goals and interest. This leads to a conflict and this conflict is termed as the agency problem. With the advancement of time, the agency problem is not only limited to the principal and agent. Parties such as creditors, major shareholders and minor shareholders not participate in the agency problem (Panda, Leepsa, & M., 2017).

The agency problem which exists between the principal and agent in companies sterns from a number of causes (Chowdhury, 2012). Chowdhury in his study indicated reasons such as separation of the ownership from control, differences in risk preferences between the

principal and agents, short period involvement of the agents in the organisation, unsatisfactory incentive plans for the agents and the prevalence of information asymmetry within the organization as the causes of agency problem.

Certain remedies have been postulated. These include the following:

a) Making available stocks to the agents in a bid to increase their affiliation to the firm. This method of managerial ownership makes the manager work as the owner in the organisation and focus on the company's performance. The interests of the principal and agent are aligned in the process (Jensen & Meckling, 1976).
b) An adequate incentive package coupled with periodic review of compensation can encourage the managers to work harder for the better performance of the firm enabling owners to maximise their wealth (Core, Holthausen, & Larcker, 1999).
c) The inclusion of independent and outside directors in the board may assiduously monitor the actions of the managers and aid in aligning the interest of both owners and managers (Rosenstein & Wyatt, 1990).
d) The profit distribution as dividends leads to decline in the agency conflict. Dividend distribution reduces the internal funds available to a firm. Managers in a bid to attract external funds to finance projects need to ensure that the firm perform (Park, 2010).

2.4 Empirical Review

Private sector participation is very vital in developing an efficient and sustainable power sector. Leaving the power sector to the government to manage will be very costly and inefficient. The public sector has mostly been attributed with mismanagement and may also lack the required capability and funds to totally harness the potential of the different energy

sources. Properly managing both power options (demand and supply sides) by making use of environmentally friendly energy sources, and ensuring efficient transmission, distribution, and reliable supply of power will advance sustainable development by improving human, social, economic, and environmental conditions (Eshun & Amoako-Tuffour, 2016).

A study into the privatisation of the government controlled Tennessee Valley Authority (TVA) in the United States revealed the realisation of the following benefits. Funds will be raised for the government from the initial selloff. Revenues will be raised for the federal, state and local governments because the new private entities would pay income and property taxes. Also an end to the provision of subsidies by government would end and this would benefit the federal budget. The paper further argues that privatization would improve operational efficiencies and allow tariff prices to be set at prevailing market rates. Incentives to waste power as a result of relatively low price would therefore be ended. Privatization would also increase transparency since these new private power entities would be monitored constantly by shareholders, creditors and state regulators. With the privatization of the British electricity industry, hidden financial issues were uncovered (Edwards, 2018).

Privatization is seen by many economists as a key final step although the least common in the economic reform of a country's power sector. A research into the progress of electricity reforms by Southeast European countries (SEECs) who are seen as transition countries revealed positive gains although they were lagging their more advanced European counterparts. Privatization in electricity sector of Southeast European countries has been undertaken in different ways but with the unique aim of promoting foreign direct investment into the sector and to allow market liberalization and increasing competition. A lack of past investments into the electricity network in many countries of the region has culminated in an inefficient electricity industry, inadequate electricity supply and non-compliance with EU

environmental standards. As evidenced in most countries, the success of electricity privatization is mostly based upon the prior restructuring of the sector, setting up of a fair and effective regulatory framework and the provision of appropriate market conditions for investors to enter the market (Vlahinić-Dizdarević, 2011).

Research into the listing of utilities is very limited. However empirical evidence of the performance of some state owned companies after they had portions of their shares transferred to public hands have been outlined below.

In a research paper about Privatization of State Owned Enterprises (SOEs) around the world, the authors argued that empirical literature gathered indicates systematic evidence that privately-owned companies outperform SOEs, and that privatisation improves the financial and operating performance of firms. The production of information and availability of market liquidity of privatised firms increase the market value of the company and allows the divesting shareholder to raise more proceeds from the sales. Provision of revenue to shareholders is therefore an indication of the economic impact of privatisation. Privatisation according to the paper is seen as a way of reducing the political interference in the operations of the SOEs. Another vital reason for privatisation is to give a government credibility and to marshal the support of private investors (Bortolotti, Fantini, & Siniscalco, 2002).

An evaluation of the performance of Ghana Commercial Bank (GCB) after it was listed on the Ghana Stock Exchange in 1997 indicated that the bank had been deriving the best from its Human Resources, as shown by an inverse relationship between total assets and number of employees of the bank (Owusu & Ayimah, 2012). The Government of Ghana currently holds

51.25% shares in GCB (Ghana Commercial Bank, 2019) with the remaining 48.75% held by institutional investors and individuals.

The Government of Ghana currently owns 34.23% shares in Ghana Oil Company with the remaining 65.77% (Ghana Oil Company Limited, 2018) owned by individuals and other corporate bodies. The company was listed on the GSE in 2007. GOIL since its listing has done tremendously well in the petroleum industry. Their consistent performance earned them the CIMG (Chartered Institute of Marketing Ghana) Petroleum company for three consecutive years from 2015 to 2017 (Ghana Oil Company Ltd, 2020).

With the exception of MTN Ghana, a telecommunication utility which listed in September, 2018, there are no utilities currently listed on the Ghana Stock Exchange. There were talks of Ghanaian utilities, especially the Government owned ones listing on the exchange in 2012. The reason for this was to enable these institutions raise enough capital for expansion works. This however has failed to materialize.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Basically, the study seeks to investigate if there would be improved public confidence in Ghanaian power utilities if they should be listed on the GSE. To accomplish this objective, a quantitative approach would be adopted by conducting a survey. The study will focus on the three main public utilities namely, VRA, GRIDCo and ECG.

The study also seeks to query the Board of Directors that, the utilities have had over the years to find out if the members of these respective boards had the requisite knowledge and skills to oversee the operations of the companies. To achieve this task, secondary data from the annual reports of the utilities would be extracted and the information analysed.

3.2 Research Approach

A variety of research approaches is always at the disposal of a scientific researcher. These approaches are dependent on the research problems at hand as well as the data collection tools and techniques available (Bhattacherjee, 2012). There are three (3) main research approaches used by most researchers. These include quantitative, qualitative and mixed approaches. In the quantitative approach, outcomes are based on close-ended questions and responses (quantitative hypotheses). A qualitative approach looks at open-ended questions and responses (qualitative interview questions). A mixed approach is a combination of the quantitative and qualitative approaches (Creswell & Creswell, 2018).

This study adopts the quantitative research. Inferences would be made from the both the survey and the evaluation of the past Board of Directors of the three main power utilities.

3.3 Research Design

A research design provides the outline of a research work (Creswell & Creswell, 2018). The research design is all about the procedures adopted for the study. Both primary and secondary data was used for the study. The design links the questions or objectives of the study to the data gathered.

The primary data collected was in the form of a survey. Questionnaires were administered in the hope of answering two of the stated research questions stated below:

a) Will there be improved confidence in the Ghanaian Power Utilities from both the public and business partners if they should be listed on the Ghana Stock Exchange?
b) Will individuals be interested in purchasing shares of Ghanaian Power Utilities?

The secondary data was extracted from the annual reports of the utilities under study. Information extracted from this data was vital in answering the last research question which is outlined below:

What requisite qualifications and skills did members of the Board of Directors that the Ghanaian Power Utilities have had over the years possess to oversee the operations of the companies?

3.4 Population and Sample

The population denotes the entire persons, issues, substances or measures with a similar recognizable feature in which the researcher is interested. The population for the study is the labour force of Ghana. The labour force can be defined as the economically active population and comprises all persons aged 15 years and older, of either sex who furnishes the supply of labour for the production of economic goods and services (Ghana Statistical Service, 2016).

The labour force was considered due to potential of these section of the population to participate in economic transactions including the purchase of shares. The population of this study based on data from the 2015 Labour Force Report issued by the Ghana Statistical Service is about 15 Million (Labour force of about 14 Million in 2015 and applying a growth rate of 2.5%)

Sampling is very instrumental in research. Sampling techniques are employed because it is not feasible to use the whole study population. Researchers generally deploy two major sampling techniques: probability sampling and nonprobability sampling. With probability sampling, a researcher can specify the probability of a participant being included in the sample. With nonprobability sampling, there is no way of estimating the probability of an element being included in a sample (Turner, 2003). A probability sampling technique called random (representative) sampling was employed since the interest of the research is in generalizing the findings derived from the sample to the general population of labour force.

The sample size was determined using the Krejcie & Morgan formula below (Krejcie & Daryle , 1970):

Formula for determining sample size

$$s = X^2NP(1-P) \div d^2(N-1) + X^2P(1-P)$$

s = required sample size.

X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size.

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (.05).

Source: Krejcie & Morgan, 1970

Based on the formula provided above and the population determined, a sample size of 384 was chosen.

3.5 Source of Data

Both primary and secondary sources of data were used. The primary data is in the form of the survey carried out to through the completion of questionnaires. Secondary data were extracted from the annual state ownership reports issued by Ministry of Finance on the state owned companies for the past eight years.

3.6 Data Collection Instruments

Online surveys were conducted. Annual reports of the utilities were collected from their respective websites and the websites of the relevant state institutions such as Ministry of Energy, Ministry of Finance, Public Utilities Regulatory Commission and the State Enterprises Commission.

3.7 Data Analysis

The data extracted was analyzed using Microsoft Excel application. The analysis of the primary data included coming to a conclusion on whether Ghanaians would be interested in buying shares of the utilities under study and also if there will be improved confidence in these utilities.

A hypothesis test was conducted on the sample data to determine whether the sampled data is consistent with that of a randomly sampled data. In hypothesis testing an assumption is initially made about a population parameter. This tentative assumption is called the null hypothesis and is denoted by H_0. Another hypothesis called the alternative hypothesis is defined. This hypothesis is the opposite of what is stated in the null hypothesis. The

alternative hypothesis is denoted by *Ha* (Anderson, Sweeney, & Williams, 2011). A null hypothesis of the mean being less than or equal to 3 was chosen. An alternative hypothesis of the mean being greater than 3 was also chosen. The p-value of the z-test calculated was compared with the confidence level (α) of the sample to determine whether the null hypothesis should be rejected or not. A rejection of the null hypothesis simply means that there is a relationship in the population under review and that the relationship in the sample reflects this relationship in the population. The relationship did not therefore occur by chance (Price, Jhangiani, & Chiang, 2015). The following hypothesis will be

H_0: $\mu = \mu_0$ versus H_a: $\mu > \mu_0$

The test statistic is

$$Z = \frac{\bar{x} - \mu_0}{\sigma_x/\sqrt{n}}$$

Reject H_0 if p-value of z $< \alpha$

where:

μ_0 is the hypothesized population mean.

Z is the test statistic.

$\bar{x}$ is the sample mean.

σ_x is the standard deviation.

n is the sample size.

p-value is the probability that provides a measure of the evidence against the null hypothesis provided by the sample.

α is the confidence level.

The analysis of the secondary data constituted comparing the Board Members that the Utilities have had over the period under consideration with the guidelines laid out for appointing board members in the Corporate Governance Manual for Governing Boards of

Ghana Public Services (Public Services Commission, 2015). Five main categories of qualifications have been considered as required by board members of public institutions in the Corporate Governance Manual. They include Human Resource Management, Law, Financial Management, General Management and Information & Communication Technology (ICT).

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter presents the results and discussion of findings. The sections below presents the key findings along with the discussion. Tables are also incorporated into the results to enhance understanding.

4.2 Improved confidence in the Ghanaian Power Utilities if they are listed

A total number of 388 responses were received in the survey that was administered. 21 of the respondents (representing 5.4%) strongly disagreed with the assertion that there will be improved confidence in a publicly traded Ghanaian Power Utility. 22 respondents (5.7%) disagreed and 103 (26.5%) were indifferent. 122 (31.4%) of those that responded to the survey agreed that there will be improved confidence whiles 120 (representing 30.9%) strongly agreed.

The figure below presents the various responses to the survey question in a bar chart form.

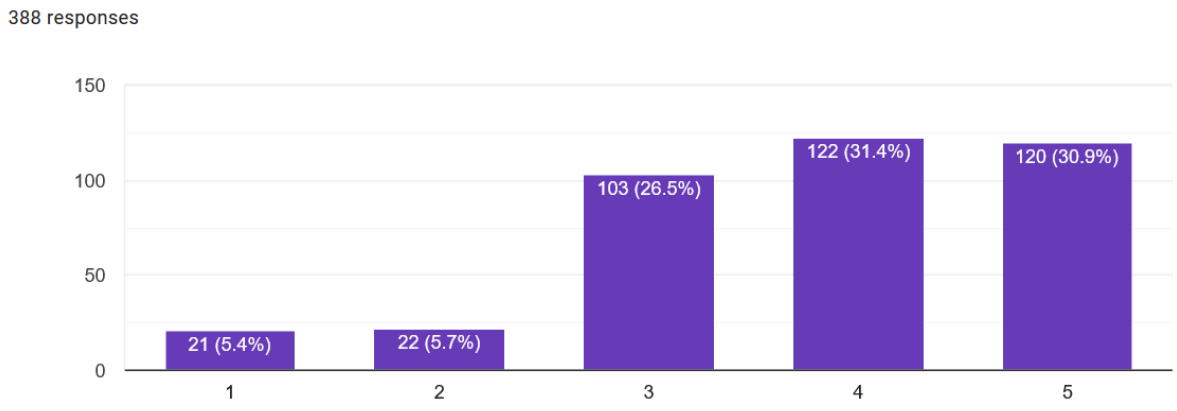

Figure 4.1 Responses on improved confidence survey

It is evident from the above chart that majority of the respondents believe that listing of the power utilities will lead to an improvement in the confidence of these utilities. 31.4% and 30.9% of the respondents agree and strongly agree respectively with this statement.

Hypothesis testing carried out on the sampled data indeed confirmed the existence of a relationship in the sample data. Tabulated below is the results of the hypothesis test carried out

Parameter	**Value**
Sample Size (n)	388
Sample Mean ($\bar{x}$)	3.7680
Standard Deviation (σ_x)	1.1127
Hypothesised Mean (μ_0)	3
Test Statistic (Z)	13.5956
p-value	0
confidence level (α)	0.05

Table 4.1 Results of hypothesis testing on improved confidence survey

Since p-value < 0.05, we reject the null hypothesis (H_0)

This implies that the alternative hypothesis of mean greater than 3 is correct signalling the presence of a relationship in the population and confirming the survey results that majority think that there will be improved confidence.

4.3 Interest in purchasing shares of Ghanaian Power Utilities

A total number of 388 responses were received in the survey that was administered. A total of 63 (16.2%) respondents indicated that they would not be interested in purchasing shares (31 of the responses strongly disagreed and 32 disagreed). 81 (20.9%) of the responses were indifferent about their interest in purchasing shares of the Power Utilities. 107 (27.6%) and 137 (35.3%) of those that responded to the survey however agreed and strongly agreed

respectively to the purchasing of shares of the utilities should they be listed on the Ghana Stock Exchange.

The figure below presents the various responses to the survey question in the form of a bar chart.

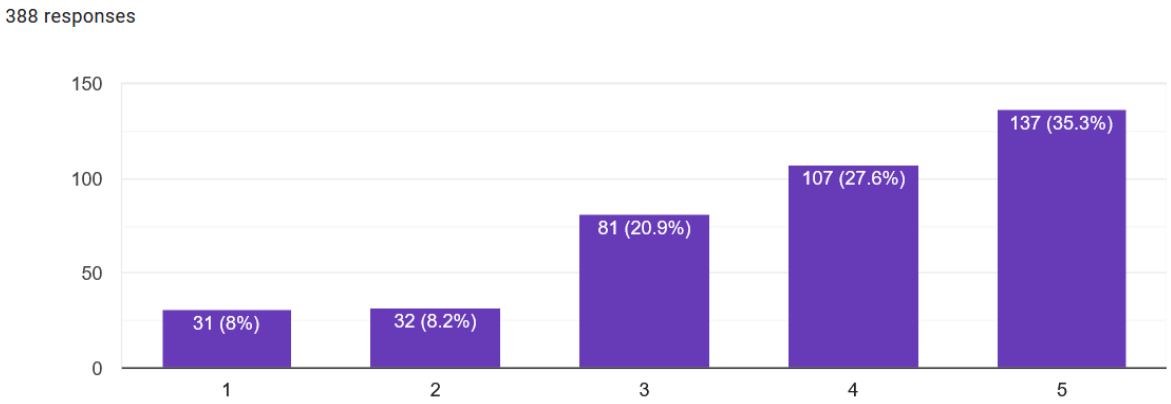

Figure 4.2 Responses on purchase of shares survey

It can be deduced from the above chart that majority of those who responded to the survey would be interested in purchasing shares of the power utilities in question should they be listed on the GSE. A total of 62.9% of respondents indicated that they will be interested in purchasing shares.

Hypothesis testing carried out on this sampled data also confirmed the existence of a relationship in the sample data. Tabulated below is the results of the hypothesis test carried out

Parameter	**Value**
Sample Size (n)	388
Sample Mean ($\bar{x}$)	3.7397
Standard Deviation (σ_x)	1.2438
Hypothesised Mean (μ_0)	3
Test Statistic (Z)	11.7144
p-value	0
confidence level (α)	0.05

Table 4.2 Results of hypothesis testing on purchase of shares survey

Since p-value < 0.05, we reject the null hypothesis (H_0)

This implies that the alternative hypothesis of mean greater than 3 is correct signalling the presence of a relationship in the population and confirming the survey results that majority will be interested in purchasing shares of the power utilities.

4.4 Qualifications and skills possessed by the Board of Directors of the various Ghanaian Power Utilities

A total number of seventy board numbers from the three main power utilities (VRA, GRIDCo & ECG) from 2009 to 2020 were evaluated. The qualifications and skills of these board members were compared with those stipulated in the Corporate Governance Manual for Governing Boards of Ghana Public Services. Sixty-seven of the board members that served on the respective boards of the utilities met the required qualifications and skills. Three however, did not. The qualifications and skills as stipulated in the Corporate Governance Manual have been grouped into five categories. They include Human Resource Management, Law, Financial Management, General Management and Information & Communication Technology (ICT).

For VRA, twenty-seven out of twenty-nine board members that served on the board met the required qualifications and skills. Seven of them were under the Human Resource Category, Six in the Law category, three in the Financial Management category, Ten in the General Management Category and One in the ICT category.

For GRIDCo, all nine board members who served on the board from 2017 to date met the required qualifications and skills. Four of them were under the Financial Management Category, Four in the General Management category and One in the ICT category.

For ECG, thirty-one out of thirty-two board members that served on the board met the required qualifications and skills. One of them was in the Human Resource Category, Three in the Law category, Eight in the Financial Management category, Nineteen in the General Management Category and None in the ICT category.

The table below shows a breakdown of qualifications of the past and present board members of the three power utilities under the five categories indicated in the Corporate Governance Manual.

Category/Power Utility	**VRA**	**GRIDCo**	**ECG**	**Total**
Human Resource Management	7	0	1	8
Law	6	0	3	9
Financial Management	3	4	8	15
General Management	10	4	19	33
Information and Communication Technology	1	1	0	2
Total	27	9	31	67

Table 4.3 Qualifications of past and present board members of VRA, GRIDCo & ECG

It can be deduced from the above table that board members from the Information and Communication Technology category have not had a lot of representation over the years. It is imperative that board members with this qualification are appointed since they will be in the best position to offer insight and advice when it comes to leveraging technology for the efficient and smooth operations of the power utilities.

4.5 Conclusion

This chapter elaborated on the main analysis conducted for the study. The results of the surveys carried out were evaluated. Secondary data in the form of annual reports was analysed to determine whether board members of the three main power utilities had the requisite qualifications and skills to direct the affairs of the companies.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter ends the study. The summary of findings, conclusion, and recommendations are discussed. The summary of findings summarizes the study, the specific objectives, the methodology, analysis and findings. The conclusion is a synthesis of the study. These conclusions are extracted from the analysis and discussions of the findings. The recommendation looks at recommendations derived from the outcome of the study.

5.2 Summary of Findings

The study seeks to investigate if there would be improved public confidence in Ghanaian power utilities and would people be interested in purchasing shares if they should be listed on the GSE. It also sought to find out if the board members of the respective Power Utilities had the requisite knowledge and skills to oversee the operations of the companies.

A survey was conducted in the hope of finding out if there would be improved public confidence in the power utilities under study. Secondary data in the form of annual reports was extracted to help evaluate the requisite knowledge and skills needed to run these utilities. Guidelines from the Corporate Governance Manual for public companies was used to aid in the identification of these skills.

A total of 388 responses were received from the survey that was conducted. According to the survey, majority of the respondents believe that listing of the power utilities will lead to an improvement in the confidence of these utilities. 31.4% and 30.9% of the respondents agree and strongly agree respectively with this statement. A total of 62.9% of respondents

indicated that they will be interested in purchasing shares of these utilities should they be listed on the GSE.

A total number of seventy board members from the three main power utilities (VRA, GRIDCo & ECG) from 2009 to 2020 were evaluated. The qualifications and skills of these board members were compared with those stipulated in the Corporate Governance Manual for Governing Boards of Ghana Public Services. Sixty-seven of the board members that served on the respective boards of the utilities met the required qualifications and skills. Three however, did not. An analysis of the breakdown of qualifications of the past and present board members of the three power utilities under the five categories indicated in the Corporate Governance Manual revealed that board members from the Information and Communication Technology category have not had a lot of representation over the years. It is imperative that board members with this qualification are appointed since they will be in the best position to offer insight and advice when it comes to leveraging technology for the efficient and smooth operations of the power utilities.

5.3 Conclusion

The continuation of the status quo whereby the three main power utilities in the country incur debt due to bad management and imprudent financial decisions and Government consistently having to intervene and provide financial assistance is clearly not sustainable. There is enough theoretical and empirical literature to support the use of equity financing in the form of issuance of stocks. Ability to raise additional funds through the issuance of stock, companies having additional leverage when obtaining loans from financial institutions and increased credibility with the public are some of the benefits of listing on a stock exchange. The survey conducted reaffirms an increase in credibility with the public should the power utilities be listed on the Ghana Stock Exchange. It also reveals listing as a viable option since

most people will be interested in purchasing shares of the power utilities under study should they be listed.

5.4 Recommendations

The study makes the following recommendations

1. It is recommended that Government considers giving up some ownership of the three (3) main utilities in the form of floatation of shares on the Ghana Stock Exchange. Ghana Commercial Bank (GCB) and Ghana Oil Company (GOIL) have been listed on the GSE with 51.25% and 34.23% GoG ownership instead of complete ownership by Government. These two companies have performed admirably since their listing and there is no reason why the power utilities will also not perform should they be listed. The survey conducted confirmed that majority of the Ghanaian population (62.9%) will be interested in becoming shareholders should the shares of the utilities be floated.

2. It is also recommended that future board members of these power utilities comprise members with a qualification in Information and Communication Technology. This is due to the little representation (a total of only two in the past ten years) on the boards of the respective utilities over the years. It is imperative that board members with this qualification are appointed since they will be in the best position to offer insight and advice when it comes to leveraging technology for the efficient and smooth operations of the power utilities.

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