

**THE EFFECT OF ERRATIC POWER SUPPLY ON SMEs IN THE KUMASI  
BUSINESS DISTRICT OF GHANA**

**By**

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## DECLARATION

I hereby declare that this submission is my own work towards the Executive Masters of Business Administration and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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## **DEDICATION**

I dedicate this work to my wife, Mrs. Rosina Naa Adaku Gbeve and our children Miss Justine Faakor Gbeve and Ethan Kekeli Gbeve, my mom Kafui Lawoekpor and to Mr Batawura Mathew Ajonghah. Thank you all for your support, love and care. You have been a great source of inspiration to me. God bless you all!

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## **ABSTRACT**

Energy supply is the major driving force for business sustainability in today's competitive world. It is therefore important that an access to reliable power supply is essential for the success of any business which in turn leads to consumer satisfaction, high productivity, profitability and overall economic growth. The drive for this study was to find out the effect that erratic power supply is having on the profitability of the SMEs in the Central Business District (CBD) of Kumasi. The study used a simple random sampling technique which is a probability sampling method which draws a portion of a population so that each member of the population has an equal chance of being selected. The study also used 80 structured questionnaires to collect primary data directly from the selected SME owners to supplement secondary data from literature. The study identified that the erratic power supply from the national grid is a major challenge to SMEs profitability. The response to the questionnaire received indicates that some of the SME owners have acquired alternative sources of electricity such as petrol/diesel-powered generators to guarantee continuous supply of electricity with unbudgeted extra operational costs raging from GH¢50.00 to GH¢100.00 every month in addition to the perceived high tariffs they paid to the Electricity Company Of Ghana (ECG). The study further revealed that the energy situation in the country now is as a result of a systemic failure by various institutions responsible for power supply; because they haven't invested consistently enough, planned well or addressed the issue of demand in the power sector. Based on these challenges the study recommends that government interventions are required to install solar panels for small consumers of power such as hairdressers, barbering shops and dressmakers to enable their businesses operate without any setbacks from energy crisis and also strategic power plants should be constructed for medium scale industries use.

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## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0 BACKGROUND OF THE STUDY**

Small and medium enterprises contribute significantly to the economic development of many developing and developed countries in the area of job or employment creation and revenue generation.

Data shows that about 90 percent of companies registered in Ghana are SMEs. “The Ghanaian private sector consists of about 300,000 SMEs, which employ more than 80 percent of the workforce and contribute about half of the country’s GDP and therefore have catalytic impacts on the economic growth, income and employment” (Mensah, 2004).

In India, which has about 30 million SME businesses, SMEs contribute about 20 percent to GDP, 45 percent of industrial output, 40 percent exports, employ 60 million people, create 1.3 million jobs every year and produce more than 8,000 quality products for the Indians and international market (Frimpong, 2013).

In the work of Sanders and Wegener (2006), one would not dither in agreeing with the fact that small businesses play a central role in any economy in terms of employment, income, innovation and development of local markets and supply chains. In developing countries, the social value and economic role of SMEs are even more significant. In these developing countries, employment and better income effects translate directly to fulfillment of basic human needs like health services, education, better homes and buffers for risk, etc. These also happen in developed economies as well.

According to Antoine et al., (2013) SMEs use a combination of innovation and improvisation to develop local products and services for local needs using local resources. Their impact on the poorer in the community is greater simply due to their local activity radius through employment, procurement and sales. Small businesses often succeed in transforming informal

activities into formal ones, directly contributing to economic health of the market environment.

Studies on the macro-economic effect of national development programmes reveal that the dynamics in the economy depend largely on the small and medium enterprise sector. Therefore, SMEs contribute directly to both developing and developed countries.

SMEs are particularly important in supporting economic growth and livelihoods in developing countries, because they tend to use more labour intensive production processes than large enterprises, boosting employment and leading to more equitable income distribution; provide livelihood opportunities through simple, value-adding processing activities in agro-based economies which tend to nurture entrepreneurship; build systemic productive capacities and they create resilient economic systems, through linkages between small and large enterprises. It is clear that SMEs as they stand are a major economic force, upon which a large number of people in developing countries depend for their livelihood Adade & Ahiawodzi, (2012). The SME sector continues to offer various opportunities worth exploiting. Whilst such opportunities can be found in the private sector, some can as well be found in the public sector.

Despite the important roles and commendable contribution to the national economy, Ghanaian SMEs have faced several challenges like high interest rates curbing access to finance, lack of critical infrastructure to facilitate smooth business operations, and the most disturbing phenomenon is the erratic power supply that is crippling the SMEs in the country.

## **1.1 STATEMENT OF THE PROBLEM**

According to a 2012 report by *Consultancy Africa Intelligence* (a South African-based research and strategy firm with a focus on social, health, political and economic trends and developments in Africa) stated that, SMEs are increasingly being recognized as productive drivers of economic growth and development for African countries. For example, it is estimated that SMEs account for 70% of Ghana's gross domestic product (GDP) and 92% of its businesses. They also make up 91% of formalized businesses in South Africa and 70% of the manufacturing sector in Nigeria. SMEs not only contribute significantly to the economy but can also serve as an impetus for economic diversification through their development of new and unsaturated sectors of the economy.

In Ghana, for instance, the sector employs the largest number of workers and constitutes about 90% of all registered businesses in the country Adade & Ahiawodzi, (2012). SMEs also contribute an estimated 49 per cent of the Gross Domestic Product and this target group has been identified as the catalyst for economic growth of the country, as they are a major source of income and employment. It would appear however, that this important sector continues to face several challenges one of which is the excessive power outages that is affecting SMEs in Ghana.

The recent power crisis is pushing businesses in the country to the brink of collapse. While some are taking austere measures to survive; others who cannot bear the adverse effect of the situation have folded up. Ghana has had to halve its economic growth forecast for this year partly due to the chronic power crises that is hurting investor confidence in the economy. The current power crisis being experienced in the country is the greatest disincentive to businesses and investments nationwide.

Electrical Power, in the short span of two centuries, has become an indispensable part of modern day life. Our work, leisure, healthcare, economy, and our very livelihood depend on a constant supply of electrical power. One may not believe it, but even a temporary stoppage of power can potentially lead to relative chaos at train stations and airports, and also big monetary setbacks in investment trading companies and possible loss of life in many countries, including Ghana.

Small and Medium scale Enterprises (SMEs) are considered the main drivers of every economy of which Ghana is no exception. However, it is also true that they are the most vulnerable of business entities with the recent power crises in the country which has impacted their businesses negatively. Mechanics, hairdressers, small scale manufacturers and traders all depend on reliable supply of power to run their businesses profitably without which they will be out of business. Due to the energy situation, the manufacturing sector of the economy grew by an unprecedented negative eight percent, according to the Association of Ghana Industries (AGI). Some SMEs are also experiencing excessive job cuts which have led to decreased volume of output and ultimately a low profit margin which have also affected government revenue accruing from the sector. The manufacturing sector continues to shrink and Ghana risks losing its industrial base if government policies do not quickly address these challenges to revive the industrial sector.

Therefore the problem the research paper seeks to investigate into is the effect of erratic power supply on SMEs in their pursuit of growth: more specially, in Ghana and how this challenge tends to inhibit their growth and what interventions should be made to remove these bottlenecks.

## **1.2 OBJECTIVES OF THE STUDY**

To highlight the specific challenges inhibiting SMEs in empowering them to drive economic growth of the Ghanaian economy with a view to proposing some recommendations to help mitigate these challenges.

The specific objectives of this study are;

1. To find out the effect of erratic power supply on the profitability of SME businesses.
2. To find out the cost of alternative sources of power supply and its impact on the profit margins of SMEs.
3. To examine the effect of erratic power supply on competitiveness of SMEs.

## **1.3 RESEARCH QUESTIONS**

The following are the research questions to be addressed by this study;

1. What are the effects of erratic power supply on the profitability of SMEs?
2. What are the alternative sources of power available to SMEs?
3. How does the erratic power supply affect the competitiveness of SMEs?

## **1.4 JUSTIFICATION OF THE STUDY**

The study is expected to contribute to what other researchers have already done by finding out other reliable sources of alternative power that will help reduce the impact of the erratic power supply on SMEs, especially the SME industry in the Kumasi Metropolis, academia and the general public.

### **ACADEMIA**

The outcome of this study is to augment the existing store of knowledge on the subject and serve as a catalyst for further research on innovative ways of providing energy infrastructure for SMEs to gain the requisite competitive advantage for the overall academic well-being of the nation. It is useful as a source of reference to researchers, academics, students, policy makers and other stakeholders interested in the challenges been faced by SMEs.

### **REGULATORS AND GOVERNMENT**

To policy makers like government agencies such as the Ministry of Energy and Power, Ghana Chamber of Bulk Oil Distributors, National Board for Small Scale Industries and the Association of Ghana industries, the findings and results of the study provides insights and a more reliable guide for monitoring the challenges faced by SMEs. It serves as a benchmark for measuring partly their respective policy goals and objectives.

### **GOVERNMENT**

This will help the Government to commit to creating an enabling environment to stimulate and ensure the growth of Small and Medium Enterprises (SMEs) in the country.



## **EXPERTS/PROFESSIONAL**

This research is to bring to bear modern trends of energy sources available to SMEs for cost effectiveness in the supply chain management industry; ensuring that the SME customer satisfaction is attained. It would also help SME managers/owners to implement the necessary structures to curtail the high incidence of bad costs through obsolescence and deterioration of stocks.

## **OTHER STAKEHOLDERS**

To stakeholders like investors, employees, pressure groups, etc., the study provides information for suggesting improvement in service delivery of the respective SMEs in Ghana.

## **1.5 RESEARCH METHODOLOGY**

This involves the various stages in collecting data for the study, which includes: Research Design, Types and sources of data, Study population, Sample Size, Sampling Size and Technique, Data Collection Procedures, Data Analysis.

### **1.5.1 RESEARCH DESIGN**

The study would use both quantitative and qualitative research design. Quantitative research uses objective measurement and statistical analysis of numeric data to explain a phenomenon, while qualitative research focuses on understanding social phenomenon from the perspective of human participants in the study.

### **1.5.2 TYPES AND SOURCES OF DATA**

The sources of materials for the study were both primary and secondary. The primary data would be collected using questionnaires for respondents to answer and structured interviews. All questions will be close ended and arranged in proper order, in accordance with its relevance. This is to make interpretation a lot easier. The questionnaire will be designed in a straightforward manner for easy understanding to elicit the exact and appropriate responses required for the study. The questionnaires will be self-administered to staff and owners of selected SMEs and this will help to explain to respondents the essence of the research. The information gathered will be tabulated and then presented in both bar and pie charts for interpretation and analysis using Microsoft Excel 2013. Secondary materials were extracted from relevant textbooks, newspapers, reports/articles, journals, bulletins and documents presented by corporate financial analysts and policy planners.

### **1.5.3 STUDY POPULATION**

The research will be conducted among selected SMEs in both Service industry and in the business industry as well as customers of the SMEs who use one or more of their services or products.

### **1.5.4 SAMPLE SIZE**

A sample size of one hundred (100) would be used for the entire study, made up of eighty (80) questionnaires for customers and the remaining ones for management staff of selected SMEs in Kumasi Metropolis.

### **1.5.5 SAMPLING TECHNIQUES**

The study used a simple random sampling technique which is a probability sampling method which draws a portion of a population so that each member of the population has an equal chance of being selected. In other words, in a random sampling all possible samples of fixed size have the same probability of being selected. A sample drawn at random is unbiased in the sense that no member of the population has any more chance of being selected than any other member.

### **1.6 SCOPE OF THE STUDY**

The study covers the SMEs of the Kumasi Central Business District of Ghana, such as food processing, bakery, wood products, furniture works, metal works, mobile phone shops and auto and machinery works within the Kumasi Metropolis. The study was conducted within the framework of evaluating how the erratic power supply is affecting SMEs whose aim is to drive economic growth in Ghana. The study is meant to cover the informal sector where little or no attention is paid due to the lack of proper infrastructure and regulation framework by the stakeholders in the industry.

### **1.7 LIMITATIONS OF THE STUDY**

As stated above, this research will focus on describing the status of negative effects that the erratic power supply is having on SMEs. The study is also centered on the various alternative sources of energy available and how affordable they are to SME businesses in the Kumasi Metropolis. This study is limited to only some selected SMEs and their staffs. Questionnaires were administered to officials and customers of the SMEs.

## **1.8 ORGANIZATION OF THE STUDY**

The entire research was organized into five parts and the outline of each chapter is given as

**Chapter One:** This chapter discussed the Introduction, Background of the study, Statement of the problem, Objectives of the study, Research Questions posed, Significance of the study, Methodology, Scope of the study, and Limitations of the study and Organization of the study.

**Chapter Two:** This chapter was on Literature reviewed from relevant textbooks, journals, reports/articles, newspapers, bulletins, websites and other referenced sources. It also included the theoretical framework used for the study.

**Chapter Three:** This chapter covered research methodologies used for the study.

**Chapter Four:** This chapter covered the presentation and analysis of data by way of figures, graphical presentation and statistics.

**Chapter Five:** This chapter comprised a summary of the research, conclusion and recommendations on how SMEs can be empowered to promote economic growth in Ghana as a case study.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 INTRODUCTION**

The literature review refers to aspects associated to the study of the effect of erratic power supply on SMEs profitability in the Kumasi Metropolis. It follows a specific arrangement. First, some definitions relating to SMEs are given, which is followed by the characteristics of Ghanaian SMEs. Then comes the contribution SMEs make to the economic development and growth and also looked at other alternative sources of power supply for SMEs to enable them grow and expand. Attention is also given to the effect of the erratic power supply on the cost of production pattern and the competitive environment of SMEs in their quest for growth and expansion in the Metropolis.

#### **2.1 SOME SME DEFINITIONS**

There is no generally established definition of SME's even though many efforts have been made. Some define it in terms of the number of workers, annual revenue, capital engaged or size of the business. For example the E.U. defines a medium size enterprise as "one with a head count of less than 250 and a small firm as one with a head count of less than 50".

According to Gibson and Van derVaart (2008), In their paper "Defining SME's: A less Imperfect way of Defining Small and Medium Enterprises in Developing Countries", defines SME as: "A formal enterprise with annual turnover in U.S. dollar terms, of between 10 and 1000 times of the mean per capita gross national income, at purchasing power parity, of the country in which it operates." Though, the constraint of this definition is that in our part of the world most businesses are reluctant to reveal turnover records.

In the Ghanaian situation, the National Board for Small Scale Industries (N.B.S.S.I.) defines SME as “an enterprise with turnover greater than \$200,000 and not more than \$5million equivalent”. According to Mensah (2004), the small and medium enterprise (SME) sector is defined as follows: “Micro Enterprises: Those employing up to 5 employees with a fixed asset not exceeding US\$10,000 in value. Small Enterprises: Those employing between 6-29 employees with a fixed asset of US\$100,000. Medium Enterprises: Those employing between 30-99 employees with fixed assets of US\$10million”.

The Ghana Statistical Service (GSS) considers “firms with fewer than 10 employees as small-scale enterprises and their counterparts with more than 10 employees as medium and large-sized enterprises. Ironically, the GSS in its national accounts considered companies with up to 9 employees as SMEs” (Kayanula & Quartey, 2000).

Steel & Webster (1991) and Osei *et al* (1993) used an employment cut-off point of 30 employees. Osei *et al* (1993), on the other hand, “classified small-scale enterprises into three categories”. These are: (i) micro - employing less than 6 people; (ii) very small - employing 6-9 people; (iii) small - between 10 and 29 employees. A modern definition is the one given by the Regional Project on Enterprise Development Ghana manufacturing survey paper. The survey report classified firms into: (i) micro enterprise, less than 5 employees; (ii) small enterprise, 5 - 29 employees; (iii) medium enterprise, 30 – 99 employees; (iv) large enterprise, 100 and more employees (Teal, 2002).

Given this synopsis of SMEs definition the over-all consensus has been that the statistical definition of SMEs varies by country and mostly based on the number of employees or the worth of assets. Though, one should be overly worried about the lack of consistency in employment based SMEs definitions, since the number of employees, seen in segregation from the size of markets or the economy, may be deceptive. For example, a 50 employee firm

in the advanced nations like U.S. would be considered 'smaller' (relative to the size of the economy) than a 50 workers firm in emerging countries like South Africa or Ghana. Moreover, other features of the firm, such as the degree of casualness or the level of technological complexity, may matter more than the number of employees as a dissection factor in advanced countries.

It is clear from the explanation of the numerous definitions that there is not a universal agreement over what constitutes an SME. Definitions differ across industries and also across countries.

It is further noted that SMEs in Ghana can be categorized into urban and rural enterprises. The former can be subdivided into 'organized' and 'unorganized' enterprises. "The organized ones tend to have paid employees with a registered office whereas the unorganized category is mainly made up of artisans who work in open spaces, temporary wooden structures, or at home and employ little or in some cases no salaried workers. They rely mostly on family members or apprentices. Rural enterprises are largely made up of family groups, individual artisans, women engaged in food production from local crops. The major activities within this sector include:- soap and detergents, fabrics, clothing and tailoring, textile and leather, village blacksmiths, tin-smiting, ceramics, timber and mining, bricks and cement, beverages, food processing, bakeries, wood furniture, electronic assembly, agro processing, chemical based products and mechanics" (UNECA 2010, Kayanula and Quartey 2000).

### **2.1.1 CHARACTERISTICS OF SMEs IN GHANA**

The role of SMEs as a vehicle for economic self-sufficiency cannot be over-stressed. They play a massive role in terms of employment creation, provision of goods and services at reasonable costs and justifiable growth as a whole as it is in other nations.

SMEs are seen as “the bedrock of entrepreneurial activities and the backbone of economic development in most economies. In Ghana, SMEs are seen as playing an important role in the transition from a state-led to private oriented development strategy” (Aryeetey et al., 1994). SMEs “provide employment and incomes to a large portion of the population and are significant source of total output” (Aryeetey, 2001).

According to Steel and Webster (1991), “the small enterprise sector provides about 85 percent of businesses in Ghana and contributes over 70 percent to the Gross Domestic Product of Ghana”.

In India, SMEs contribute nearly 45percent share of manufactured products, 40percent of overall export of the country and employment to over 32million people and produce more than 8,000 quality products for the Indian and international markets.

In South Africa, “SMEs contribute 30percent to GDP, 70-80percent in employment. SMEs have been the engine of Europe’s economy during the period of the Eurozone crises accounting for 80percent of the European jobs in the last 5 years” (Arkoh, 2013). This goes to prove that “for Ghana to attain economic self-sufficiency it desperately seeks then SMEs must be the focal point of major government policies to develop the economy. The high degree of unemployment in the country combined with the relatively lower standards of living can be reduced if SMEs are given the necessary support to expand and overcome the numerous challenges that they face. This will go a long way to accelerate our vision in attaining economic self-sufficiency” (Arkoh, 2013).

### **2.1.2 SMEs CONTRIBUTION TO ECONOMIC DEVELOPMENT AND GROWTH**

SMEs are significant players to national growth, whether one contemplates the state of a developed economy or a developing economy. Aside being vital sources of employment and



income in many emerging countries, SMEs with their malleable nature have a better flexibility to fluctuating market situations, making them better suited to withstand recurring downturns. The scattering of SMEs across the country also encourages better supply of revenue, and creates extra value in raw materials and products, even as they bring about effectiveness in domestic markets. Small businesses nonetheless thrive because larger public companies create opportunities through forward and backward linkages, and governments serve as operational institutional support for creating market access and providing a favorable environment.

In Ghana SMEs are now open to better prospects than ever for increase and diversification across the sectors. While developed global markets may be shrinking on account of the financial and economic crises prevailing, Ghana's market size is growing and opportunities within Africa are also beginning to look attractive for SMEs in manufacturing, food processing, pharmaceutical, IT and service sector among others, transportation difficulties discounted.

## **2.2 THE ROLE OF ELECTRICITY IN BUSINESS**

“Electricity is today's most important energy form for small and medium, and large-scale businesses. Secure supply of electricity at transparent market prices, and high and well-defined quality standards are crucial to economic growth and our whole way of life. Energy supplies have a significant impact on economic activities” (Velasquez and Pitcher, 2010). This is because it is used for diverse purposes extending from production, storage, powering of office equipment and product display. Access to power enlarges the number and diversity of business and job prospects available. Electricity means that businesses, such as hair salons, bakery and welders, all of which rely on energy to function. Energy also leads to the formation of new markets, businesses and job openings, which offer more opportunities for

individuals to earn an income and lift them, their families and their communities out of poverty. Electricity provides business owners with access to online information and resources. Power provides business owners with information that is critical to operating their business successfully, whether that information is about local or national markets, new economic policies or tax regulations. This allows small business owners in rural areas to involve the wider business community and learn best practices from other individuals working in the same industry.

A lack of a “consistent access to reliable power costs businesses and the economy as a whole. Even with access to energy, unreliable power makes operating a business even more challenging than usual. African manufacturing enterprises experience power outages 56 days a year on average. As a result, firms lose six percent of sales revenues in the informal sector. Where back-up generators are limited, losses can be as high as 20 percent. These losses have severe consequences for the health and growth of the wider economy, not to mention the dramatic impact in achieving other development objectives outlined by the Millennium Development Goals”(Gretchen, 2013).

### **2.2.1 Background of the Energy Crisis**

Ghana’s core cradle of power generation was the Akosombo Dam. It was built under the Nkrumah’s government with four turbines which were generating 588MW. Nevertheless, in 1972, the Acheampong administration added two turbines which augmented the generation capacity to 912MW.

The generation capacity was once more augmented to 1020 MW under the retrofit project by the Rawlings government. The Akosombo dam, nonetheless, depends solely on rain water, hence in 2007 when water level in the dam dipped under the then Kufuor administration, the country lost about 600MW, compelling the country for the first time in its modern history to

go through load management. This forced President Kufuor in his sectional address of February 8, 2007 to publicize short to medium term proposals “to put an end to the embarrassing and expensive load shedding which society and industry have been subjected to over the past six months.” Apart from the Akosombo dam, the Volta River Authority also operates the Kpong hydroelectric dam which has affixed capacity of 160MW and other thermal plants like TAPCO(T1), 330MW; TICO (T2), 220MW, T3,132MW; TT1PP,110MW; TT2PP,50MW; MRP,80MW and solar 2.5MW.

This brings the country’s installed capacity that VRA manages to 2104MW or 75 percent of total generation. Installed capacity for Independent Power Producers (IPPs) and Bui Power Authority are: SunonAsogli, which depend solely on gas, 200MW; CENIT, which uses light crude, with installed capacity of 120MW and 400MW from Bui hydroelectric dam.

In essence, Ghana’s contemporary total installed capacity (minus thermal plants and dams under construction) is 2846.5 MW. Temporarily, the country’s total energy demand at peak period (6-10pm) is a little under 2000MW while non-peak period is between 1600-1700MW. Though, the modest question demanding response is why with an installed capacity of 2846MW and a total demand of less than 2000MW, the nation is still under load management.

### **2.2.2 History of Ghana’s Energy Problems**

Between 1998 and 2000, resulting from the sudden high demand for electricity as a result of rapid enlargement of settlements and industries and fast economic growth, the Energy Commission of Ghana fashioned a report instructing consecutive administrations to add at least a minimum of not less than 10 percent of the country’s mounted generation capacity yearly. At the period the report was made, the nation’s installed capacity was around 1700MW. This means, governments since 2000 ought to have been adding an average of

250MW annually over the past 14 years, and this should have brought the republic's total installed capacity by now to about 7000MW.

But unfortunately “we all went to sleep” as a result of which the country is now paying dearly. The Energy Commission's good word was to cater for the fast growth in population and businesses with its attendant energy demand.

Parts of the difficulties worsening the energy problem also is the government's failure to diversify the economy in favor of exports to earn more foreign exchange to decrease the load in the procurement of crude and gas to power the various thermal plants.

The failure of the West African Gas Pipeline Project to meet its predetermined agreement with Ghana with the steady supply of gas to fire some of the thermal plants has also compounded the nation's energy difficulties.

Other complications that has aggravated the energy condition in the country apart from the low level of water in Bui and Akosombo dams correspondingly is the unanticipated breakdown of thermal plants which occasionally concurs with the shutting down of other plants due for routine maintenance thus, occasionally dipping the nation's installed capacity to as low as 1500-1600MW without any margin of reserves. Worryingly, over the ages Ghanaians have refused to pay “realistic tariffs” even as prearranged by constitutional authorized body like the Public Utilities and Regulatory Commission (PURC).

Even more alarming is the fact that, utility tariff regime in Ghana has been reduced to political games often, with politicians beating behind organized labour, political pressure groups and civil society organizations to kick against realistic tariff regulation thereby forcing governments to surrender to the popular demand of no tariff adjustment in the name of political convenience (peacefmoline.com)

## **2.3 THE EFFECT OF ERRATIC POWER SUPPLY ON SME BUSINESSES**

“Despite the fact that electricity supply in Ghana contributes only 10 percent of its energy-supply mix, the industry is a key driver of economic growth and development, powering the country’s industrial, commercial and urban development. The industrial, agricultural, mining and services sectors of the economy account for 75 percent of the country’s GDP, and rely critically on the electricity industry for survival” (Daily Guide. 2013).

According to Ayanda (2011), Small- and Medium-scale Enterprises (SMEs) are considered “the main drivers of every economy. However, it is also true that they are the most vulnerable of business entities and the recent power crisis in the country has impacted their businesses negatively. Mechanics, hairdressers, small scale manufacturers and traders all depend on reliable supply of power to run their businesses profitably without which they will be out of business.

Ghana has been experiencing erratic power supply for the past three years, which has led to several thousands of jobs being lost in both the formal and informal sectors of the economy”(www.bftonline.com).

It is by no means that the power outages in Ghana have had serious catastrophic effects on many areas of the general economy. Human lives have been lost due to life-support system failures. Hospitals and nursing homes have suffered losses, and companies have collapsed, all due to consistent power failures. Co-ordination facilities such as airports/Aviation, and traffic controls are still suffering. Ghana Ports and Harbour Authority (GPHA) was reported to have lost over US\$100,000 profit in 24 hours continuous power failure at Tema Harbour site.

A study steered by the Institute of Statistical, Social and Economic Research (ISSER) has discovered that businesses lose about \$686.4 million yearly due to the incessant supply of electricity which has beleaguered Ghana over the past three years.

The current situation has an unrelenting and escalating effect on businesses through the increase in their operational costs, limiting production and output growth, predominantly in energy sensitive sectors such as mining and small manufacturing, all of which have serious implications for the profits and employment as well as for government to achieve its projected revenue target.

### **2.3.1 EFFECT OF ERRATIC POWER SUPPLY ON THE REVENUE OF SMEs**

The poor quality of electricity supplies to micro businesses as a result of the energy crisis costs

their annual sales US\$686.4 million (GH¢2.74 billion), according to the Institute of Statistical, Social and Economic Research (ISSER). This is based on crude estimates from the research think-tank which specified that the over four million micro and small businesses in the nation, which offer over two-thirds of all jobs in the country, are losing US\$2.2million daily from their sales target due to the chronically erratic power situation. The figure represents between 30 to 50 percent of total sales of these businesses, costing the economy around two percent of national output of annual Gross Domestic Product (GDP) lost due to the electricity crisis.

Cold store operators whose stocks go bad for lack of power are the hardest hit in this regard.

According to the report, “firms that do not have access to sufficient electricity have lower output or sales compared to those with sufficient electricity, while firms that own or have access to standby generators do better than their counterparts without a generator. The

electricity insecurity has affected the total factor and labour productivity, firm competitiveness, investment, profits and employment” (Ackah, 2015).

Ackah (2015), further revealed that, “despite the advantages of frequent power supply, Ghana have been struggling to provide reliable and consistent power supply since the first crisis in 1983”.

### **2.3.2 JOB CUTS IN THE SME SECTOR**

It is recognized worldwide that small and medium enterprises (SMEs) are the engines of economic development and industrial growth, solving the twin problems of unemployment and poverty. They are said to account for approximately 95 percent of all the companies in the world

In most countries, the contribution of small and medium manufacturing, service and business enterprises is significantly greater than that of large enterprises when it comes to innovations, productive employment including self-employment and optimum utilization of latent resources.

Small and Medium Enterprises (SMEs) are defined differently by researchers. They are mainly described as the engine of growth in most economies but also in most cases are not given the due recognition and needed support. All the SME definitions are particularly formed around the number of employees and the size of capital investment. In Ghana, there is no generally accepted definition for SMEs. The various institutions and stakeholders have their own definitions to suit their operations. However there is a strong indication of collaboration between stakeholders to carve a generally acceptable definition.

In Ghana, “SMEs contribute immensely to the industrial output and export of goods and services. They play an important role as the engine of growth of our economy registering

about 90% of businesses in Ghana with about 70% contribution to GDP, accounting for 85% manufacturing employment and 75% general employment”

([www.smeghanaawards.com/index.php](http://www.smeghanaawards.com/index.php)).

According to the latest International Labour Organization (ILO) World Economic and Social Outlook “the greatest single source of new jobs will be found in the private sector services such as business, administrative services and real estate. According to the report industrial employment is expected to stabilize globally at slightly below 22 percent, while job creation in the construction sector will decline in comparison to the period 2010 and 2013, although it is expected to remain above 2 percent per year on average. The report also noted that employment in the manufacturing sector will remain largely unchanged over the next five years and will account for only 12 percent of all jobs in 2019”. These claims by the International Labour Organization (ILO) will not materialize due to the erratic power supply and its negative impact on SME businesses in the country.

The rate at which companies from manufacturing, media, agro processing, telecoms to other services such as banking and insurance are either laying-off their workers or freezing employment as a prudent measure to stay in business, because most of their profit made is used to purchase generators, fuel and maintenance of the generators. The recent power crisis is pushing businesses in the country to the brink of collapse. While some are taking austere measures to survive; others who cannot bear the adverse effect of the situation have either laid-off workers or folded up.

According to *myjoyonline.com* “about 200 workers of mining firms in Ghana are set to be laid-off. This move has been influenced by the rising cost of production, which has been compounded by the erratic power supply amidst the challenging business environment and the marginal increase in utility tariffs and may be laying off more if the situation does not



improve according to management. This phenomenon of laying off workers is going to further increase the already high unemployment rate in the country and the social vices that goes with it”.

This assertion has being long-established by a survey carried out by Association of Ghana Industries (AGI) that businesses are neither engrossing job seekers nor sure of doing so in the next six months, as about 60 percent of CEO’s interviewed were undecided as to whether to hire more or lay-off workers. This phenomenon is dangerous because for any progressive economy we should see growth in employment creation as large numbers of students are being churned out of our universities ready for the job market yet there are no jobs.

“To be able to grow and expand their businesses and employ more people SMEs require regular and affordable access to electricity and energy to sustain their business operations”

(Credit to [www.bftonline.com](http://www.bftonline.com)).

### **2.3.3 HIGHCOST OF ELECTRICITY TARIFFS ON SMEs**

Electricity in Ghana is a “key determinant of the country’s continued economic growth, but supply has recently struggled to keep up with demand. Sustained demand growth of over 6 percent per year has strained the already overburdened electricity system. A major power crisis in 2006–7 is estimated to have reduced GDP growth by one percent” (Energypedia).

The Public Utilities Regulatory Commission (PURC), the authorized institution to regulate the utility sector has introduced an Automated Adjustment Formula (AAF). In July, 2014 electricity tariffs went up by 6.1 percent while water tariffs were increased by 12 percent and in September the same year, PURC announces an increment of 6.54 percent for electricity with the prices of water going up by 4.54 percent despite the inefficiencies in the services of

utility providers. According to Annan (2013), “the increases have been necessitated due to the shift to crude oil for generation of power occasioned by erratic gas supply from Nigeria. The Commission also in its deliberations considered the current inadequate electricity supply situation which has resulted in load shedding in the country and its impact on Consumers and Customers of Electricity and water. “According to the Volta River Authority (VRA) officials, “it costs them 54p per kilowatt/h for generating electricity through fuel while the PURC tariff approval translates into a cost of 11.4p per kilowatt/h. They also said about 80 per cent of funds received from the PURC was spent on fuel, while the rest was expended on maintenance. Manufacturing and service sectors are the areas that suffered most from high utility tariffs”. According to Association of Ghana Industries (AGI) Business Barometer has revealed high utility tariffs and additional taxes have been identified as some of the key challenges confronting businesses in Ghana in the last quarter of 2013.

The Trades Union Congress (TUC), in response, described Government’s approach to utility price management as “unfair, adding that it demonstrated selfishness on the part of governments” (both present and past). Effective October 1, this year, water and electricity bills will go up by 52 percent and 78.9 percent respectively.

## **2.4 THE COST OF ALTERNATIVE SOURCES OF POWER AVAILABLE TO SMEs**

The role of energy in sustainable development was echoed with greater emphasis by the June 1997 Special Session of the UN General Assembly that reviewed Agenda 21. This is further explained by Youngquist’s when he argued that “energy is the key that unlocks all other resources and influences the living conditions of mankind” (Youngquist, 2001) Similarly, Ogunlade and Youba (ibid) maintain that “sustainable patterns of energy production, distribution and use are crucial to influencing the standard of living of people. Improved

access of the poorer sections of the population to energy services contributes directly to poverty reduction” (UN-Energy, 2008).

Thus access to “affordable and readily available energy services should grow significantly to serve the energy needs of the growing population” (Amponsah, 2010).

The erratic power supply ongoing currently is a major challenge facing SME businesses in Ghana. The intense power cuts in the country have lasting anything between 24 to 72 hours, thereby leaving SME business owners in particular with no other choice than to resort to generator sets to keep their business activities going. The prices of these generators have risen remarkably due to the high demand which puts additional financial burden on the SME owners in the country currently, not to talk about the cost of servicing and fuel to operate the generators. This also means increased cost of production. Some of them have passed on the cost to consumers. Others have absorbed the cost till they can’t afford it anymore. However, some businesses have laid workers off to remain in business.

Majority of SMEs surveyed relied on “electricity power from the national grid for their daily operations. However, in addition to electricity, a variety of other sources of energy are used by these businesses to power their operations. This is partly due to the chronic power crises that are hurting investor confidence in the economy” (Agbola & Sokro, 2014). The current power crisis being experienced in the country is the greatest disincentive to businesses and investments nationwide. The country is presently shedding load in the range of 300 to 600 megawatts (MW) on a daily basis as a result of a deficit in power generation hence businesses are forced to spend additional funds to procure backup energy for the effective and efficient running and survival of their businesses.

Nearly one third of SMEs surveyed use diesel or petrol generators which are more expensive to run than grid electricity thus increasing the cost of operation and lowering profits cited by

(Agbola & Sokro's, 2014). The prices of fuel has been increased three times for the first and second quarters of 2015 from 10 percent to 15 percent as government has deregulated the pricing of petroleum prices to the Ghana Chamber of Bulk Oil Distributors (GCBDCs) as part of International Monetary Fund (IMF) conditionality.

According to the Institute of Economic Affairs (IEA), “approximately 40 percent of the new electricity provision required for universal access over the next 15 years is likely through grid extension. The remaining 60 percent is the natural domain of small and medium enterprises which use distributed, renewable technology to generate their own power. SMEs are comparatively more vulnerable to these factors and have no other choice but to explore the use of renewable and more sustainable sources of energy like solar energy to ensure energy security and their continued existence”.

According to Ogunlade and Youba (ibid) they argued that “the world in general and Africa in particular, need to embark on an energy growth paradigm that departs from the well-known conventional paths for sustained growth and structural transformation of the society. The new paradigm should focus on environmental–friendly sources that easily replenish themselves to sustain the energy services required for industrial, commercial, administrative and residential purposes in poverty stricken Africa”. Kemfert (2006) and Smith (2005) claimed that “the solution lies with alternative sources of energy” (Amponsah, 2010).

## **2.5 LACK OF COMPETITIVE ENVIRONMENT**

According to International Labour Organization (ILO), “getting the enabling environment right is of key importance as there is limited value in promoting enterprise development for the creation of more and good jobs in an environment that is hostile to them. This is especially relevant for small and medium enterprises (SMEs) who are often hit harder by an conducive environment than larger enterprises which is frequently referred to as a lack of

level playing field. It is expected that an improvement of the enabling environment provides access to new services that will help SMEs perform better or reduce their cost of doing business leading to additional investment and creation of more and decent and productive employment. Thus, an enabling environment seeks to improve the economic prospects particularly of SMEs, overcome decent work deficits for workers and ensure that economic activities are environmentally sustainable”.

### **2.5.1 HIGH COST OF CREDIT**

Cost is a variable input in determining profit by any business. Profit is only realizable if cost of production is less than revenue generated. Haanes et al., (2011) identified “reduced costs due to energy efficiencies” as the second highest possible source of sustainability next to improved brand reputation. In other words the higher the frequency and longer the duration of erratic power supply, the greater the cost incurred by small and medium enterprises and vice versa and the lesser or greater their ability to sustain their business interest. Many small and medium enterprises (SMEs) are folding up such as hairdressers, welders, barbers; seamstresses are virtually out of business because they cannot sustain their cost of doing business.

Cost of borrowing is just not attractive, especially when in some instances, they are competing with government. The financial institutions prefer to lend to government, rather than to businesses for a simple reason that when you lend to government it is risk free. Ghana has one of the highest interest rates in the world, with commercial banks charging close to 30% per annum and micro finance institutions charging more than 70% per annum. This phenomenon is caused by multiple factors which are both domestic and international. On the domestic front, surveys by Association of Ghana Industries (AGI) have found that

competitive government borrowing is a major cause of high lending rates in the country. Ghana has had budget deficits for a long time, which are increased during election years, financed by successive governments borrowing both domestically and internationally. This has driven up the rate for Treasury bills, which has become a de facto benchmark for bank rates, government is forced to pay relatively high interest rates, which in turn forces the private sector to pay high rates for credit.

Also, high costs in the banking industry covering operational costs; energy costs due to the current energy crisis, as well as structural inefficiencies; high borrower risks emanating from inadequate collateral, lack of credit referencing and un-bankable projects; and general macro-economic instability have contributed to the high rates. Internationally, depreciation of the cedi and high interest rate demands from foreign investors for bonds have also been contributory factors.

According to Ofosu-Ahenkora (2010), Ghana is reported as having the highest interest rate spread in Africa, and the highest lending rates in Africa, coming second only to Brazil globally and this does not prick the conscience of the powers that be. Needless to say, these high lending rates is stifling economic development and causing credit crunch as people cannot afford to borrow. It is time the Central Bank of Ghana stepped in to bring sanity into the banking sector. The high interest rates are stifling the productive sectors of the economy as it makes the cost of doing business too excessive and businessmen can't pass the benefits of their business to consumers in the form of lower prices. Businesses in these sectors such as agriculture and manufacturing are unable to borrow to expand their businesses and this is worsening the unemployment situation in the country and the few who are employed cannot enjoy the fruits of their labour in the form of higher wages all because of the high cost of doing business.

### **2.5.2 LACK OF ENABLING BUSINESS ENVIRONMENT**

The issue of “unreliable power supply has been the main potential contributor to the large productivity gap between developed and developing countries. Insufficient and unsustainable power supply is a major problem in Ghana today. The first major consideration in any feasibility studies for any multinational manufacturing company to invest in a developing country is the assurance of a sufficient reliable power supply” (Boasiako, 2015).

Furthermore, erratic power supply on SME businesses has also been recognized as a factor in deterring investors, and in weakening the competitiveness of local industries. This has resulted in reduced production and a number of companies closing shops. In a study by Alam, (2013) which sought to identify the relationship between electric power consumption and foreign direct investment as well as economic growth. He therefore recommended a policy framework that will ensure that there will be a continuous supply of electricity in order to make advances in economic growth. In the 2013 World Bank Enterprise Survey on African countries, including Ghana and Nigeria, it named the ongoing rampant poor electricity supply as one of the biggest barriers to growth of the countries' economy, and hindrance to many multinational investors.

In advanced countries, while majority of power failures from national grid last only a few hours, blackouts that last days or even weeks are classified as major catastrophic failures that can completely shut down production in companies, including critical infrastructures such as telecommunication networks, financial services, water supplies and hospitals. This situation is extremely very unusual. According to Association of Ghana Industries (AGI) “businesses in Ghana keep declining, citing a business barometer indicator of 26.7 which showed a significant loss of confidence in the business environment in the fourth quarter compared to 40.8 in the third quarter of 2013”.

Moreover, in the United States of America (USA) for example, an analysis from blackout events shows that “a 30-minute power cut results in an average loss of US\$28,709 for medium and large industrial setups, and nearly US\$95,000 for an eight-hour interruption. Even short blackouts which occur several times a year in the US add up to an annual estimated economic loss of between US\$104 and US\$164 billion”. How much more Ghana, that has had more than 12 hours and sometimes 24hrs power failures intermittently in a week for the past 3-years.

The impact of the power crisis is that “the extra funds expended on the alternative sources of power supply increase the cost of production thus raising the market costs of products and services. This makes the products to underperform in the market if there are similar products in the market that have been imported from countries where the power supply is regular” (Adepoju, 2014). For SMEs, the power crisis increases the cost of starting a new business or running an already existing one in Ghana. It becomes more difficult considering the financial constraints and difficult access to startup funding.

While we can appreciate that loss of power in smaller scale settings may not be life threatening, but it can certainly result in loss of data, missed deadlines, decrease in productivity, and loss of revenue.



## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.0 INTRODUCTION**

This chapter looks at how data of the research were gathered, the research method employed in the study, the data collection techniques used and the target population, the sample size and sampling technique as well as the data analysis method employed. It finally looks at the procedures and the limitations faced in gathering these evidence.

#### **3.1 RESEARCH DESIGN**

The study used a descriptive research design because of the nature of the variables that were at hand, to produce data, required for quantitative analysis and to allow simultaneous description of views, perceptions and beliefs at any single point in time (White, 2000).

To achieve the proposed research objectives of highlighting the specific challenges inhibiting SMEs in their quest for growth and expansion in the Kumasi Metropolis, a quantitative research method was adopted which is often the most efficient and cost-effective research method (Gerhardt, 2004).

Many researchers have looked at the issues facing SMEs in their quest for growth in Ghana.

In view of this, the case study approach was adopted, which focused on SMEs in the Kumasi Metropolis in the Ashanti Region of Ghana.

#### **3.2 DATA COLLECTION TECHNIQUES**

The data for this study were gathered through the use of primary and secondary data sources.

### **3.2.1 PRIMARY DATA**

The primary data sources for this study involved the use of questionnaire. Copies of the structured questionnaire were distributed to SME operators and/or owners for the first hand information for processing towards answering the research questions. The questionnaire was divided into three sections. Section A, which concentrated on the respondents firms such as:

Age of the firm

Form of ownership

Nature of the firm

Average monthly turnover of the firm

These helped us in identifying the type of SME that we were dealing with, whether or not they were Micro, Small or Medium enterprises as per the definition given in (Aryeetey et al., 1994) research work.

Section B of the questionnaire consisted of various questions geared towards answering the objective of the study. These questions looked at the effect of erratic power supply on SMEs profitability.

The final section also looked at how SMEs plan to overcome the excessive cost of production that is making them uncompetitive against their competitors who are not facing the erratic power supply and what they are doing to overcome these challenges to attain growth and expansion to other areas.

### **3.2.2 SECONDARY DATA**

The secondary data were obtained from reviewing journals and literature relevant to the subject matter of this research. Newspaper source and official policy documents of government of Ghana with relevance to the subject were also consulted. The electronic search site: [www.google.com](http://www.google.com) was employed extensively for up-to-date materials on the topic.

The primary data formed the crux of this study because it afforded the opportunity in obtaining at first hand and relevant responses.

### **3.3 TARGET POPULATION**

SMEs are scattered across the breadth and length of the country with most of them located in the regional capitals to mention but few Greater Accra, Ashanti, Central and Western regions. In adopting a case study method in the research, the selection of the research site is most important (Yin, 1994). With this in mind, Kumasi Metropolis in the Ashanti Region of Ghana was selected for the following reasons:

Firstly, Kumasi is the second largest city of Ghana with most SMEs dominating the region and are registered with NBSSI and also the non-registered SMEs in manufacturing sector of Kumasi Metropolis especially those in soap and detergents, fabrics, clothing and tailoring, textile and leather, village blacksmiths, tin-smithing, ceramics, timber and mining, bricks and cement, beverages, food processing, bakeries, wood furniture, electronic assembly, agro processing, chemical based products and mechanics (UNECA 2010, Kayanula and Quartey 2000).

Secondly, it was easier for the researchers to approach these SME operators since the researchers are also located in the same region. Choosing any other region apart from Ashanti would mean travelling a long distance just to collect information through the contact of the SME operators which would have been very difficult considering the time frame of this Thesis.

### **3.4 SAMPLING FRAME AND TECHNIQUES**

The sampling frame for the study included all the SMEs in the Kumasi Metropolis numbering 2000. The sampling size of the research was 80 which represented both SMEs that suffer from the erratic power supply those that did not because of their backup supply. This helped the researchers to track the effect of the profitability and its effect on growth of SMEs. Eighty (80) questionnaires were distributed to these SMEs out of which we received responses from 65 respondents, representing about 81% of the response rate which we deemed to be impressive for this study.

The study used a simple random sampling technique which is a probability sampling method which draws a portion of a population so that each member of the population has an equal chance of being selected. In other words, in a random sampling all possible samples of fixed size have the same probability of being selected as a result the simple random sample provides us with a sample that is highly representative of the population being studied. A sample drawn at random is unbiased in the sense that no member of the population has any more chance of being selected than any other member. Since the units selected for inclusion in the sample are chosen using probabilistic methods, simple random sampling allows us to make generalizations (i.e., statistical inferences) from the sample to the population.

### **3.5 DATA COLLECTION INSTRUMENT**

The instrument employed for this study was a semi-structured questionnaire. Copies of the questionnaire were administered by the researcher to the owners of SMEs in the Kumasi Metropolis to ascertain whether the constant access to alternative sources of energy could lead to the profitability and growth of SMEs.

The questionnaires were both close and open ended questions. The open ended questions gave the respondents freedom to decide the detail and the length of his/her answer. It enabled

the respondents to give a more adequate presentation of their particular case and convey flexibility in their choice. The closed ended questions, however, were designed to keep the questionnaire to a reasonable length and this encouraged response and validity in terms of the responsiveness of the return. It also minimizes the risk of misinterpretation unlike the open ended questions. Lastly, it permitted easier tabulation and interpretation by the researcher.

The question on whether to use either of the questionnaires can be resolved on the basis of validity and reliability. This study employs the use of both open and closed ended questions.

### **3.6 DATA ANALYSIS TECHNIQUES**

A descriptive statistics was found to be an ideal analysis technique and subsequently used in ascertaining the challenges that SMEs faced in this era of erratic power supply in order to grow and expand. Aided by the tabulation of data extracted from a close-ended questions surveyed, it was easier to understand the issues identified by the respondents.

Also to help answer the question whether or not SMEs in the Kumasi Business District have challenges in coping with the effect of erratic power supply on their businesses to aid their growth as contained in the objectives in chapter one.

### **3.7 PROCEDURES**

After deciding on the target population, a list of SMEs was received from the National Board for Small Scale Industries (NBSSI). After contacts have been made to seek the consent of some of these SMEs to be part of this research, the numbers of 80 SMEs were therefore arrived at. The various SMEs that agreed to be part were subsequently contacted and given a brief background about what the study sort to achieve through the means of telephone. After getting the required number for the study, the questionnaires were then dispatched. The

respondents were then given a week to complete the questionnaires, as this gave them ample time in giving out the right responses. The data gathered were then analyzed through the means of relative frequencies and graphs; tables and charts after the data were edited for completeness.

### **3.8 VALIDITY OF INSTRUMENTS**

Validity is the extent to which the instruments used during the study measure the issues they are intended to measure (Amin, 2005). To ensure validity of instruments, the instruments were developed under close guidance of the supervisor. After the questions are designed, they were pre-tested with five SMEs at Kumasi. This helped to identify ambiguous questions in the instruments and be able to re-align them to the objectives

### **3.9 RELIABILITY**

Reliability is the “extent to which the measuring instruments will produce consistent scores when the same groups of individuals are repeatedly measured under the same conditions” (Amin, 2005). The study administered one kind of questionnaire to SMEs and using Cronbach reliability test, Alpha values of 0.753 were gotten indicating that the tool was suitable for assessing the challenges inhibiting SMEs in empowering them to drive economic growth of the Ghanaian economy.

### **3.10 ETHICAL ISSUES**

At the start of data collection, the investigator sought approval from the Metropolitan Assembly. In addition, each questionnaire contained an opening introductory letter requesting for the respondents cooperation in providing the essential information for the study. The respondents were further assured of confidentiality of the information provided and that the

study findings were to be used for academic purposes only. Respondents were further assured of their personal protection and that they had the right to refuse or accept to be questioned.

### **3.11 LIMITATION**

Due to time constraint, a relatively small sample size of 80 SMEs was employed and as such it limits the extent to which we can generalize the issues raised. Again it would have been better to have sample some SMEs in the Middle and Northern belt of the country compared to just those in the Southern belt forming the sample frame. But due to time constraint, we could not have travelled to those areas.

It was also very difficult in getting information from the selected SMEs because of fear that the information given would one way or the other get to the tax authorities as most of them do not fulfill their tax obligations despite the assurance the researchers have given them.

## **CHAPTER FOUR**

### **DATA PRESENTATION ANALYSIS AND DISCUSSION OF FINDINGS**

#### **4.0 INTRODUCTION**

In this research, we describe the constraints and performance of businesses in the context of erratic power supply and its effect on businesses in the Kumasi Central Business District. Further, we quantify and explain how a business in the Kumasi Business Districts' performance is related to some of their characteristics, as well as to some characteristics of the environment in which they are involved. The study is cross-sectional in its design. Data are collected on a sample of businesses, with 2012 as the reference year. After a descriptive analysis of the information obtained, we proceed with an econometric analysis to evaluate how businesses' productivity are related to the erratic power supply in the country.

#### **4.1 BACKGROUND CHARACTERISTICS OF SMEs**

The analysis of objective one was done using descriptive statistics mainly frequency percentages to represent the background characteristics of the enterprises in the Kumasi Central Business District.

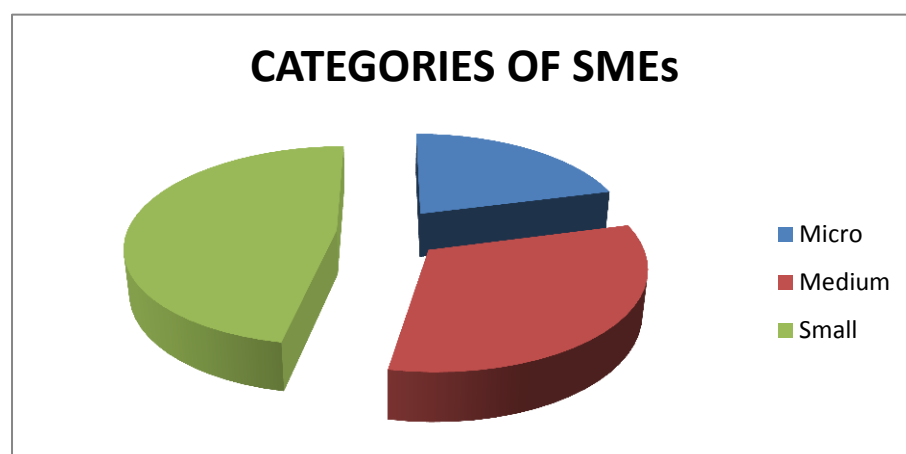


#### 4.1.1 CATEGORIES OF SMEs

Enterprises qualify as micro, small or medium-sized enterprises if they fulfill the maximum ceilings for staff headcount and either a turnover or a balance sheet ceiling. (See table below)

SME Definition				
Enterprise category	Ceilings			
	Staff Headcount (number of persons expressed in annual work units)	Annual Turnover	Or	Balance sheet total
Medium	250	GHS45million		GHS15million
Small	50	GHS15million		GHS90,000

Using UNIDO's classification, SMEs studied were classified into three categories namely, micro, small and medium enterprises. The results are showed in the chart below. Data shows that Ghanaian SME sector is determined by small businesses constituting 46 percent. Micro and medium enterprises form 20 percent and 31 percent respectively. Thus 67 percent of SMEs employ less than 20 people. This is an improvement upon SNNIT's (2004) report that 90 percent of companies in the Ghanaian private sector employ less than 20 persons. It appears the rapid economic growth in the last few years has increased the job creation capacity of SMEs hence the increasing number of larger SMEs.



**Table 4.2: Frequency Distribution of type of Participant SME firms:**

<b>SME Types</b>	<b>Frequency</b>	<b>Percentages (%)</b>
Private Ltd Company	35	54
Public Ltd Company	0	0
Partnership	4	6
Sole Proprietorship	20	31
Family Owned Business	6	9
<b>Total</b>	<b>65</b>	<b>100%</b>

**Source: Survey Data, 2015.**

From *Table 4.2* above, it could be observed that the bulk of the respondent SME firms are registered as Private Limited liability Companies. They accounted for 35 out of 65 sample, representing 54 percent. There was no respondent from Public Limited Liability Company. Out of 65 respondents, 4(6%) operate Partnership business, while 20(31%) were Sole Proprietorship. The remaining 6(9%) of the respondents were registered as family owned businesses.

The Small and Medium Enterprises (SMEs) surveyed cut across the various sectors of the Ghanaian economy and also have an average monthly sales ranging from as low as GH¢2,000 to a maximum amount of GH¢40,000 as can be seen from tables below.

## 4.2 CATEGORIES/TYPES OF SME BUSINESSES

From the *Table 4.2* below, it could be seen that, out of a total of 80 respondents received, most of the SME firms are dominated in wholesale/retail business sector, representing 30(46%) of the total responses. The services sector accounted for 10(15%), while the dressmaking sector accounts for 12(18%). Welding/Carpentry work sector records 8(13%), while Farming/Agro processing and Manufacturing sector records 3(5%) and 2(3%) respectively

The result of the research reveals that the erratic power supply made significant impact on SMEs in various ways. These can clearly be seen from the analysis that shows that the country is losing its industrial base due to an availability of electric power to produce hence most of the SMEs have resulted to distributors and retailing.

**Table 4.3: Categories of SME Operators.**

Nature	Frequency	Percentages (%)
Welding/Carpentry works	8	13
Wholesale/Retail Business	30	46
Dressmaking	12	18
Services	10	15
Farming/Agro Processing	3	5
Manufacturing	2	3
<b>Total</b>	<b>65</b>	<b>100%</b>

**Table 4.4: Number of years SMEs are in Operation**

<b>Number of Years</b>	<b>Frequency</b>	<b>Percentage</b>
0-1	5	8
2-5	35	54
6-10	12	18
11-20	10	15
20 and above	3	5
<b>Total</b>	<b>65</b>	<b>100%</b>

**Source: survey data, 2015**

From the results in Table 4.4, it could be observed that the number of years SMEs surveyed were in operation has been analyzed. The result above indicates that 5(8%) of the total respondents have been in operation for just one year. Also 35(54%) of the total respondents haven been in operations from two to five years. Whiles 12(18%) of the total respondents claimed they were in business about six to ten years and 10(15%) claimed they have been in business from eleven to twenty years and finally 3(5%) claimed they have been in operation from 20 years and above.

From the above analysis, it could be seen that greater proportion of themes sampled indicates that they have been in operation for five years, from ten years period going the percentages keep declining from 18%, 15% and 5%.

**Table 4.5: Frequency Distribution of Average Monthly Sales of Respondent SME firms.**

<b>Amount (GH¢)</b>	<b>Frequency</b>	<b>Percentages (%)</b>
Less than 20,000	3	5
20,000 – 25,000	8	12
25,000-35,000	30	46
35,000-40,000	24	37
<b>Total</b>	<b>65</b>	<b>100%</b>

From *Table 4.5* above, which represents the average monthly sales of the 65 SMEs sampled, 30(46%) of the respondents recorded an average sales below the GH¢40,000 threshold when power was inconsistent. This result represents SME firms mostly from the Wholesale/Retail trading business, Dressmaking and services sector of the economy. Majority of the respondents experience power fluctuations which include high production capacity deficiency, limitation in sales and high labour cost (Irjayanti and Azis, 2013) and damage to their properties (Wang, 2002).

Also 24(37%) of the respondents whose average monthly sales were slightly within the GH¢35,000 to GH¢40,000 threshold and 8(12%) fell within the GH¢20,000 to GH¢25,000 and 3(5%) respondents recorded a monthly sales of less than GH¢15,000.00

In terms of service delivery to customers when power was inconsistent, the average sales reduced considerably from 46 percent to 37 percent as can be seen in the table above.

### 4.3 THE EFFECT OF ERRATIC POWER SUPPLY ON PROFITABILITY

On profitability, data in *Table 4.4* below shows that majority of SMEs surveyed representing 70.5 percent have agreed strongly that the erratic power supply has decreased or affected their profitability margin from 2012 to 2015 as compared to profit margin earned from stable power regime from 2009 to 2011.

SMEs in developing countries including Ghana rely solely on retained profits to operate and grow their businesses as they are mostly denied credit by the commercial banks who demand untenable collaterals (Gregson & Livesey, 1983).

**Table 4.4: Effect of power crisis on the growth and profitability of SMEs**

Statement	Strongly Agree	Agree	Neutral/Non Response	Disagree	Strongly Disagree
1. The erratic power supply has led to a decrease in our profit margin.	58 (30.5%)	76(40%)	35(18.4%)	20(10.5%)	1(0.5%)
2. We will produce/sell more goods and services if we had regular power supply.	94(49.5%)	63(33.2%)	25(12.2%)	7(3.7%)	1(0.5%)
3. Our business will make more profit if we had regular & reliable power supply.	123(64.1%)	44(23.2%)	15(7.9%)	7(3.7%)	1(0.5%)
4. We would open more branches if we had reliable and regular power supply.	12(6.3%)	25(13.2%)	78(41.1%)	60(31.6%)	15(7.5%)
5. We would expand our business to other parts of the country if we had	15(7.8%)	38(20%)	68(35.8%)	59(31.1%)	10(5.3%)

regular power supply.					
6. We had closed down all/part of our branch operations due to the erratic power supply.	5(2.6%)	18(9.5%)	28(14.7%)	109(57.4%)	30(15.8%)
7. We will employ more workers if we had regular & reliable power supply.	14(7.9%)	32(16.8%)	69(36.4%)	70(36.9%)	5(12.6%)
8. We had to lay-off some of our workers because of the energy crisis.	8(4.2%)	8(4.2%)	39(20%)	97(51.1%)	38(20%)

*Source: Adapted from Agbola & Sokro's, 2014*

From the above table it could be observed that 76(40%) of the respondents are of the opinion that erratic power supply has led to the decrease in their profit margin. Whiles 123(64.1%) strongly agree that they would have made more profit if they had regular and reliable power supply.

From the table above, it can also been observed that 94(49.5%) of the respondents strongly agree that their businesses would have produce and sell more product if they had regular and reliable power supply.

#### **4.4 OTHER SOURCES OF ENERGY AND ITS COST ON SMEs**

This study is aimed at finding out the effect of the erratic power supply on SMEs in the Kumasi Central Business District. Majority of the SMEs surveyed revealed that most of the small and medium enterprises relied on electric power supply from the national grid for their daily operations. However, the table below indicates that apart from electricity, a variety of other sources of energy are used by SME businesses to power their operations. This was as a result of the erratic power supply of electricity from the national grid which has forced SME

businesses to spend additional funds to procure back up energy for the effective and efficient running and survival of their businesses cited by (Agbola & Sokro's, 2014).

From *Table 4.4* below, it could be seen that 35(54%) out of the total of 65 SMEs surveyed claimed they rely solely on electricity from the national grid to run their businesses. The findings were emphatic as majority of the SMEs surveyed were with the view that, the alternative sources of power though necessary to keep their businesses running are generally very expensive; Also 5(8%) of the respondents claimed they use Liquefied Petroleum Gas (LPG) to power their operations which is cheaper. whiles 15(23%) out of the total of 65 SMEs surveyed indicates that they use diesel or petrol to power their generator sets as backups which are more expensive to run than electricity from the national grid, thus increasing their cost of operations and thereby lowering profits. 7(11%) of the respondents relied on solar energy as well as 2(3%) and 1(1%) of the respondents used Kerosene and Wind Energy respectively.



**Table 4.4: Sources of Energy used by SMEs**

<b>Sources of Energy</b>	<b>Frequency</b>	<b>Percentages (%)</b>
Electricity from national grid	35	54
LPG Gas	5	8
Generators	15	23
Solar Energy	7	11
Kerosene	2	3
Wind Energy	1	1
<b>TOTAL</b>	<b>65</b>	<b>100%</b>

**Source: Surveyed data 2015.**

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

#### **5.0 INTRODUCTION**

This chapter gives a summary of the findings of the study, draws conclusion and makes recommendations. Summary of findings is first followed by the conclusion.

#### **5.1 SUMMARY OF FINDINGS**

Findings from the study revealed that SMEs in the Kumasi Central Business District of Ghana suffer from erratic power fluctuations either announced or unannounced, and these have adverse effect on the profitability of most of the SMEs surveyed. Lack of a consistent access to reliable power costs businesses and the economy as a whole. Even with access to energy, unreliable power makes operating a business even more challenging than usual. African manufacturing enterprises experiences power outages 56 days a year on average. As a result, firms lose six percent of sales revenues in the informal sector. Where back-up generators are limited, losses can be as high as 20 percent. These losses have severe consequences for the health and growth of the wider economy, not to mention the dramatic impact in achieving other development objectives outlined by the Millennium Development Goals.

The study further found out that the energy situation in the country currently is as a result of a systemic failure by various institutions responsible for power supply; because they haven't invested consistently enough neither have they planned well nor addressed the issue of demand on power and energy consistently enough in the power sector over the past years.

The above thoughtful statement amply addresses the reason/s why we have this erratic power supply in this country today.

Findings from the research also revealed that the consistent power outages experienced by businesses in the country has taken a major toll on the business environment, especially the manufacturing sector. Due to the energy situation, the manufacturing sectors of the economy grew by an unprecedented negative eight percent; because of decreased volume of output which ultimately resulted in low profit margins which have affected government revenue accruing from the sector.

Findings also revealed that many small and medium enterprises (SMEs) in Ghana who are involved in electricity powered processes are compelled to find alternative means of power supply. The impact of the power crisis is that the extra funds spent on the alternative sources of power supply increase the cost of production thus raising the market costs of products and services. This has made the products to underperform in the market since similar products in the market that have been imported from countries where the power supply is regular. In order for SMEs to survive under this worsening power situation which has compelled most small and medium enterprises to cut down costs as much as possible to remain competitive in business has resulted in laying off some of workers for a while or reduce working hours so as to cut down costs of labour in cycle with the high costs of securing alternative power.

Findings from the research brings out the effect that erratic power supply is having on cost of energy, raw materials for production due to the instability of micro and macroeconomic indicators in the country currently. The result is the high interest rates which are stifling the productive sectors of the economy as it makes the cost of doing business too excessive and

businessmen can't pass the benefits of their business to consumers in the form of lower prices. Businesses in these sectors such as agriculture and manufacturing are unable to borrow to expand their businesses and this is worsening the unemployment situation in the country and the few who are employed cannot enjoy the fruits of their labour in the form of higher wages all because of the high cost of doing business.

## **5.2 CONCLUSION**

Generally the study sought to find out the negative effect of erratic power supply on the profitability of SMEs in the Central Business District of Kumasi. The intermittent and unreliable nature of the electricity supply has affected the operations of small and medium enterprises which depend on electricity generated from the national grid for their operations. This indicates that there is the need for reliable and sustainable alternative source of energy to power small and medium enterprises for economic growth. The study used 80 structured questionnaires to collect primary data directly from some selected SME owners to supplement secondary data from literature.

The study revealed that access to reliable and sustainable electricity means that small and medium businesses, such as hair salons, bakery and welders, all of which rely on energy to function which also leads to the creation of new markets, businesses and job openings, which provide more opportunities for individuals to earn an income and lift themselves, their families and communities out of poverty. For SMEs to promote economic growth and development of the country, it is essential for them to have access to reliable energy and at an affordable cost because energy is a necessity to their operations and productivity.

This research agrees with the works of (Wang, 2002) with several other researchers who affirm that intermittent and frequent power outages cause severe harm on SMEs profitability.

By focusing on SMEs, this study seeks to contribute to the body of knowledge on the negative effect of erratic power supply on the profitability of SMEs.

### **5.3 RECOMMENDATIONS**

The study revealed that the erratic power supply has negatively affected the profitability of small and medium enterprises (SMEs) by way of increase in production cost and reduce profit.

The study therefore seeks to recommend that solar panels should be installed by the government for small consumers of power such as hairdressers, barbering shop and dressmakers to enable their businesses operate without any setbacks from energy crisis and also strategic power plants should be constructed for medium scale industries use.

Furthermore, tax rebates or incentives should be given to SMEs to keep them in business in order not to lay off workers which has the potential of coursing social problems in society.

Finally, government should also encourage competition in the power sector, rather than the monopoly of Electricity Company of Ghana (ECG) is currently enjoying. We need to be proactive and embrace these renewable energies as quickly as possible as they will lead to decentralization of power supply, create more jobs, lead to lower costs, cleaner environments, and reduce our carbon footprint, thus helping to save our planet. They will create wealth for private providers. The owners of these power sources will not have to deal with ECG or VRA directly as they will be in control of their power sources. Thus, there will be no bureaucracy and power outages. The scarce resources of government will be freed for more urgent needs.

It is the hope that the recommendations made will help improve the energy situation and lasting solution to the energy crisis and also the study will serve as a stepping stone for further research.

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## **APENDIX**

### **QUESTIONNAIRE ON EFFECT OF ERRATIC POWER SUPPLY ON SMEs**

Dear Respondent,

This is an academic survey questionnaire which is aimed at identifying and collecting data about the effects of erratic power supply on Small and Medium Enterprises (SMEs) in the Kumasi Business District. Your kind and objective response will significantly highlight these negative effects from your perspective and contribute to finding practical solution to this phenomenon.

This is purely academic exercise and any information given would not be disclosed.

#### **SECTION A: DEMOGRAPHY OF THE COMPANY**

1. Name of your organization/Enterprise.....
2. What is the type of your organization? (Please tick as appropriate)
  - a) Private Limited Company
  - b) Sole Proprietorship
  - c) Partnership
  - d) Family Owned business
  - e) Others (please specify).....
3. What is the nature of your organization? (Please tick as appropriate)
  - a) Welding/Carpentry works
  - b) Whole/Retail trading
  - c) Manufacturing
  - d) Services

- e) Agro processing
  - f) Other (specify).....
4. For how long has your organization been in business (Please tick as appropriate)
- a) Less than a year (1 year)
  - b) Between 1 and 5 years
  - c) Between 6 and 10 years
  - d) Between 11 and 15 years
  - e) 15 years and above
5. How many employees have you employed into your organization.....
6. Have you employed qualified professionals in managerial positions in your organization? Yes/No
7. What are their qualifications?
- a) Senior High School Certificate
  - b) Higher National Diploma Certificate
  - c) First Degree
  - d) MBA
  - e) Other (please specify).....
8. Does your organization have an initial business plan? Yes/No
9. What is your average monthly turnover of your business?
- 1) Less than GH¢20,000.00
  - 2) GH¢20,000.00 to GH¢30,000.00
  - 3) GH¢30,000.00 to GH¢40,000.00
  - 4) GH¢40,000.00 to GH¢50,000.00
  - 5) Other (please specify) GH¢.....

## **SECTION B:**

**The following questions relate to the negative effect of erratic power supply on the daily operations of Small and Medium Enterprises.**

10. How many times the power does go off in a day?

- 1) Once in the day
- 2) Twice in the day
- 3) Three times in a day
- 4) Four times in a day
- 5) Other (please specify).....

11. Does your power go off according to the ECG scheduled time table? Yes/No

12. Do your organization uses any alternative source of power supply for your operations when national grid is off? Yes/No

13. Which type of alternative source of power supply does your company uses?

- a) Generators
- b) Solar Panels
- c) Bio Gas
- d) Plants
- e) Other (please specify)

14. How much does the alternative source of power cost your organization to acquire?

- a) GH¢500.00
- b) GH¢1,000.00
- c) GH¢1,500.00
- d) GH¢2,000.00
- e) Other (please specify) GH¢.....

15. How much does your organization spend on fuel to keep the generator running for your operations when the national grid is off?

- a) GH¢50.00
- b) GH¢100.00
- c) GH¢150.00
- d) GH¢200.00
- e) Other (please specify) GH¢.....

16. How much does it cost your organization to do maintenance of your alternative source of power supply?

- a) GH¢20.00
- b) GH¢50.00
- c) GH¢80.00
- d) GH¢110.00
- e) Other (please specify) GH¢.....

17. Have your organization lay-off some of your employees? Yes/No

18. How many employees have your organization laid off so far?

- a) One
- b) Two
- c) Three
- d) Four
- e) Other (please specify).....

19. Do your organization intend to employ in the future? Yes/No

20. How does the erratic power supply affect your cost of production?

- a) Increase in raw materials
- b) Increase in electricity tariffs
- c) Increase in the cost fuel
- d) Increase in labour expenditure
- e) Other (please specify).....