An Investigation of Electricity Power Fluctuations and Performance of Small and Medium Enterprises in Dekina, Kogi State

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Authors’ contributions

This work was carried out in collaboration between all authors. Author YZN designed the study, performed the statistical analysis wrote the protocol and wrote the first draft of the manuscript. Authors ATN and AIJ managed the analyses of the study. Author ATN managed the literature searches. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JENRR/2018/v1i39840

Editor(s):
(1) Mohammed Aslam Husain, Assistant Professor, Department of Electrical Engineering, Rajkiya Engineering College, Ambedkar Nagar, India.

Reviewers:
(1) Innocent U. Duru, University of Abuja, Nigeria.
(2) Sırrı Uyanık, KTO Karatay University, Turkey.

Complete Peer review History: http://prh.sdiarticle3.com/review-history/25911

Received 3rd June 2018
Accepted 8th August 2018
Published 17th August 2018

Original Research Article

ABSTRACT

SME owners face the problem of unreliable power supply in their routine business operations in Dekina Local government of Kogi State. Capacity installed is not utilized and this affects their performances and economic contribution. This study investigates the influence of unreliable power supply on economic contribution and performance of SMEs in Dekina Local government of Kogi State. The study adopted a survey research design. Finding shows that unreliable electricity power supply has caused increased operation cost and untimely death for SMEs in Dekina Local government of Kogi State. Furthermore, finding shows that significant differences exist between SMEs that utilized installed capacity and those that do not utilized installed capacity in terms of operation cost, productivity, competitive edge, market share, contribution to poverty and unemployment reduction. It was concluded that SMEs that utilized installed capacity witness reduced operation cost, increased productivity, higher competitive edge, larger market share, a
greater contribution to poverty and unemployment reduction. The study, therefore, recommends that the government and other economic stakeholders should device alternative reliable power supply to facilitate the economic contribution and performance of SMEs in Dekina Local government of Kogi State.

Keywords: Back-up power; electric transmission; economic contribution; performance; utilized installed capacity.

1. INTRODUCTION

The electric power supply fluctuation is a long term issue facing Small and Medium Enterprises (SMEs) in Nigeria. According to Akuru and Okoro [1], the appalling state of Nigeria’s epileptic power sector has long been a subject matter. The under-performance and contribution level of SMEs appears to be associative with the extent to which electricity is supplied. There appears to be a managerial issue on the part of the electric transmitter, but in most cases, epileptic power supply is blamed on the generating stations in Dekina Local government of Kogi State. [1] added that managers of electric transmission are quick to accuse the generating stations of insufficient generating MW capacity. It is no longer new that some SMEs have failed and are dead today as a result of inconsistent and epileptic power supply in Dekina Local government of Kogi State.

However, the potentials of SMEs may be untapped and the objectives of SME owners may be unrealistic when the issue of fluctuating power supply is not addressed. SMEs play a central role in any economy in terms of employment, income, innovation and development of local markets and supply chains. This understanding made [2] to restate that the contribution of SMEs is very significant to the economic development of many developing countries. Though, SMEs are observed to be using back-up energy such as inverter, generators and solar among others. A particular finding revealed the high cost of providing back-up energy for SMEs which sometimes is as critical as three times the cost of publicly supplied electricity [3,4]. A study conducted by [5] also found that electricity supply reliability is a significant public policy issue as a result of the enormous costs being borne by SMEs due to unreliable and inadequate electric power supply. This implies that there is the probability that SMEs will incur the lesser cost and have ample time for other operating decisions rather than being obsessed with alternative means of ensuring reliable electric supply. The economic contribution of SMEs is observed dependent on the reliability of the power sector/utilization of installed capacity or the alternative choice of reliable power supply. [6] stressed that the power sector has great importance for the large share of employment opportunities and the SME sector’s contribution to the formation of national income.

1.1 Statement of the Problem

SME owners face the problem of unreliable power supply in their routine operations in Dekina Local government of Kogi State. [6] opined that this interferes with their use of electrical appliances and machines, and equally halt their operational activities. It is observed that poor economic contribution and performance of SMEs is the function of unreliable or epileptic power supply in Kogi State. It is observed that poor economic contribution and performance of SMEs is the function of unreliable or epileptic power supply in Dekina Local government of Kogi State. [7] also posited that the poor performance of electricity supply in the state is the significance factor militating against the performance of SMEs. Many SMEs may have died due to the unreliable or epileptic power supply. In fact, there is an observed pessimism by some will be entrepreneurs as to how long will they use backup energy and the probability of making an encouraging profit and withstanding competitive pressure in their business environment. [8] argued that these challenges manifest in the loss of performance among others. Meanwhile, [9] had alarmed that poor electricity supply is a threat to productivity, investment growth and competitiveness. It is believed that there is no way that SMEs could have been contributing to the economy (in terms of poverty and unemployment reduction) without reference to the adequate and reliable power supply in Dekina Local government of Kogi State. [7] posited that
empirical studies have shown that the SMEs have in many states enhanced greater per unit of capital invested and supported the employment opportunities.

1.2 Objectives of the Study

The main objective of the study is to assess the influence of unreliable power supply on economic contribution and performance of SMEs in Dekina Local government of Kogi State. The specific objectives of the study are to:

i. Determine the extent to which unreliable electricity power supply increases the cost of operations and the risk of untimely death of SMEs in Dekina Local government of Kogi State; and

ii. Investigate the differences between SMEs utilizing installed capacity and those that do not.

2. LITERATURE REVIEW

For a long time, the SME sector has been attracting research attention based on its potentials in the economic transformation. For example, [10] expressed that SMEs are generally known for their labour intensive activities and also for their use of local resources in the creation of valuable items that are most important in the society. [6] added that support for SMEs is a common theme because it is recognized that SMEs contribute to the national and international economic growth. This is why SMEs are considered widely as the engine room of any performing economy in the world. For instance, SMEs is observed to have possessed a larger percentage of contribution in economic sustainability of Dekina Local government of Kogi State today. [11] argued that SMEs use a combination of innovation and improvisation to develop local products and services for local needs using a reliable electric power supply. [12] believed that access to a reliable electricity supply is vital to the operations of most SMEs. [2] added that their impact on their local activity radius through employment, procurement and sales. These SMEs may be successful in their local activity radius as a result of reliable electric power supply.

In the conceptual framework, the association between electric power generation and consumption, and the economic contribution and performance of SMEs in Dekina Local government of Kogi State is established. It is seen from the Fig. 1 that utilized installed capacity drives the SMEs' power consumption. It is also observed that SMEs’ power consumption has the tendency of influencing employability, poverty reduction, profitability, productivity, competitive edge and market share. This is because regular power supply can reduce the cost of alternative back-up, and this cost reduction is expected to certainly influence the economic contribution and performance of SMEs.

Fig. 1. Conceptual framework

Source: Adapted from [13]
It is no longer new that the Nigerian electricity supply companies’ performance is below average. [14] added that the Nigerian SME sector has been hampered by erratic and inadequate electric power supply. [5] attributed inadequate electric power supply to inadequate generation, transmission and distribution infrastructure. The issue of the inadequate electric power supply has been a concern to past and the current government in Nigeria, and so much effort has been directed to enabling this resolved. But yet the issue remains the same for years and the future of the electricity sector remains uncertain.

Unreliable electricity supply has been observed to be contributing to lack of trust and willingness to pay for power supply bills by SME owners. [15] argued that unreliable electric power supply in Nigeria is characterized by high voltage variations, recurrent blackouts and brown outs and pervasive reliance on self generated electricity. Studies [16][4] discovered that self generation has been the most widely adopted strategy. The self generated power supply takes high investment in back up capacity which could have been directed towards another project with high returns. [9] asserted that investment in back up generations greatly reduces firms’ investment in other productive activities. It is in this regard that [17] described the Nigerian economy as being as a generator economy, and expressed that it causes high operational costs and poor competitiveness of SMEs. The resistance on the part of SME owners is attributable to little or no satisfaction regarding the fluctuating electricity supply and the extra cost incurred from self generated electricity. In support of this, [18] discovered that a positive relationship exists between electricity customer satisfaction and their willingness to pay in Hungary. The implication of this is that poor electricity service quality may be associated with low SME owners’ compliance with bill payment in Dekina Local government of Kogi State.

[19] noted an on-going analysis of the relationship between the energy sector and economic development. Though, studies today have shown that a lot of researches have been conducted to establish a link between reliable electricity supply and economic development. In the same vein, it appears that reliable electricity supply can facilitate the economic contribution of SMEs in Dekina Local government of Kogi State. [20] had expressed that reliable electricity supply holds a decisive significance for the economic activity of SMEs; economic growth is determined by the energy resource of the country. [21] expressed that between 2007 and 2008 over 55% of the textile industries operating in the North-west zone in Nigeria were closed down due to poor performance partly orchestrated by a power failure. In line with this, the study of [19] found that without reliable energy supply, SMEs were unable to produce in increased quantities and quality leading to poor sales hence low levels of profitability. In their study, [22] also found that SMEs which experience reliable electric power supply have better market access because they offer new products and sell semi-finished products to other enterprises. [12] added that they also have the potential to outcompete firms that already existed.

However, it is noteworthy that adequate and reliable electricity supply is not a yardstick for the economic contribution and performance of SMEs in Nigeria. [23] posited that electricity access is not an automatic guarantee for the achievement of increased productivity, profits and income. Reliable electricity power supply is just a platform upon which SMEs can operate. There are many inexhaustible factors (low level of managerial skill, lack of operational and expansion capital, government policies, politics, religious belief and cultural value among others) that can constrain the entrepreneurial activities of SMEs. The full potential economic impact of electricity can be exploited only if essential preconditions are met, such as firms’ endowment of adequate capital, access to markets and transport infrastructure [23].

The argument of this study premises on the gap that unreliable electricity power supply increases the cost of operations and the risk of untimely death of SMEs in Dekina Local government of Kogi State. Also, the argument is built on the fact that, unlike larger scale enterprises, the economic contribution and the performance (profitability, competitive advantage, customers’ satisfaction and productivity) of SMEs is too low to be considered in Dekina Local government of Kogi State presently due to unreliable electrical power supply. Thus, this study intends to explore these gaps.

3. RESEARCH METHODS

The study adopted a survey research design. To facilitate this survey, well structured questionnaire was used. Content validity and test-retest method were used to ascertain the validity and reliability of the instrument. For this
study, purposive sampling was adopted based on the inability of the researchers to have access to complete enumeration or accurate population of SMEs in Dekina Local government of Kogi State. Thus, the designed sample for this study is 187. SMEs clustered in areas where there is the constant power supply (were believed to have been utilizing installed capacity) while those in the areas where there is constantly experienced power outage (were believed to have not been utilizing installed capacity). On this note, 93 respondents were selected on the ground of utilized installed capacity and 94 respondents were selected on the ground of un-utilized installed capacity in Dekina Local government of Kogi State. The questionnaires were administered in this area with the help of ten trained research assistants. The demographic characteristics of respondents were analyzed using the percentage method. Five point Likert scale was used for the descriptive analysis of the degree of unreliable electrical power supply in terms of operating cost and risk of untimely death. The mean score of responses to each item was determined through:

\[
\bar{X} = \frac{\sum FX}{N}
\]

Where: \( \bar{X} \) = means response, \( \sum \) = summation, \( F \) = number of respondents choosing for a particular scale point, \( X \) = numerical value of the scale point and \( N \) = total number of respondents to the item.

The Cut-Off Point involves adding the Mean Point of Scale with the tolerable level of error (\( e = 5\% \)).

Mean Point of Scale = \( \frac{\sum X}{n} \) = \( \frac{15}{5} \) = 3.00

Cut-Off Point = Mean + e = 2.00 + 0.05 = 2.05.

The study also used a T-test for analysis, from which deduction was made.

**4. RESULTS AND DISCUSSION**

Analyses in this section are based on the sample of 187.

### Table 1. Demographic characteristics of the respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>Items</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Mean/mode</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-25</td>
<td>9</td>
<td>4.8</td>
<td></td>
<td>37.62</td>
</tr>
<tr>
<td>26-36</td>
<td>86</td>
<td>46.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37-47</td>
<td>57</td>
<td>30.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>48-58</td>
<td>29</td>
<td>15.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>59 &amp; Above</td>
<td>6</td>
<td>3.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>187</strong></td>
<td><strong>100.0</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>123</td>
<td>65.8</td>
<td></td>
<td>123</td>
</tr>
<tr>
<td>Female</td>
<td>64</td>
<td>34.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>187</strong></td>
<td><strong>100.0</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>65</td>
<td>34.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>63</td>
<td>33.7</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>Divorcee</td>
<td>44</td>
<td>23.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widow(er)</td>
<td>15</td>
<td>8.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>187</strong></td>
<td><strong>100.0</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Educational background</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSLC</td>
<td>37</td>
<td>19.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSCE</td>
<td>82</td>
<td>43.9</td>
<td>82</td>
<td></td>
</tr>
<tr>
<td>Higher Institution</td>
<td>68</td>
<td>36.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>187</strong></td>
<td><strong>100.0</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Field Survey (2018)
Table 1 shows the demographic characteristics of respondents. The table shows that 9 respondents (4.8%) fall within the age range of 15 to 25; 86 respondents (46.0%) fall within the age range of 26 to 36; 57 respondents (30.5%) fall within the age range of 37 to 47; 29 respondents (15.5%) fall within the age range of 48 to 58; and 6 respondents (3.2%) fall within the age range of 59 and above. The mean value of 37.62 shows that respondents (who are 38 years) are active SME owners in the study area.

From the Table 1, 123 respondents (65.8%) were male; and 64 respondents (34.2%) were female. The mode value of 123 indicates that majority of the respondents are male. The implication of this in the study is that the male sex ventures in business more than their female counterpart in Dekina Local government of Kogi State.

The Table 1 shows that 65 respondents (34.8%) were single; 63 respondents (33.7%) were married; 44 respondents (23.5%) were divorcee; and 15 respondents (8.0%) were widow(er). The mode of this marital status (65) shows that majority of the respondent is single.

Table 1 shows that 37 respondents (19.8%) reported that they hold the first school leaving certificate; 82 respondents (43.9%) hold senior school certificate, and 68 respondents (36.4%) hold higher institution certificate. The mode (82) shows that majority of the respondent were holders of senior school certificate.

Table 2 shows the descriptive analysis of behavioural trend among unreliable electrical power supply, operation cost and risk of untimely death among SMEs in Dekina Local government of Kogi State, Nigeria. The table shows that unreliable electricity power supply affects operation cost of SMEs to a very large extent in Dekina Local government of Kogi State, Nigeria. The mean score of 3.588 greater than the cut-off point of 3.050 (that is, $X' = 3.588 >$ cut-off point = 3.050) also proves that the behavioural trend between the unreliable electrical power supply and operation cost of SMEs is strong. This implies that unreliable electricity power supply causes the operation cost of SMEs to increase in Dekina Local government of Kogi State. This advances the study of [24] which found that unreliable electricity power supply causes redundancy.

The Table 2 also shows that unreliable electricity power supply poses a risk of untimely death among SMEs in Dekina Local government of Kogi State, Nigeria. The mean score of 3.417 greater than the cut-off point of 3.050 (that is, $X' = 3.417 >$ cut-off point = 3.050) also proves that the behavioural trend between the unreliable electrical power supply and risk of untimely death among SMEs is strong. This implies that increasing power outage can continue to cause an increase in the risk of untimely death among SMEs in Dekina Local government of Kogi State, Nigeria.

Table 3 shows the significant differences between SMEs that utilized installed capacity and those that did not utilize installed capacity in Dekina Local government of Kogi state, Nigeria. Factors such as operation cost, profitability, productivity, competitive edge, market share, contribution to poverty and unemployment reduction were considered for the significant differences. The Table 3 shows that the operation cost of SMEs utilizing installed capacity (mean= 1.55) is lower compared with the operation cost of SMEs not utilizing installed capacity (mean= 2.10). The value of the T-test (8.792, p= 0.01) empirically supports this significant difference.

The Table 3 shows that the profitability of SMEs utilizing installed capacity (mean= 2.41) is higher than the profitability of SMEs not utilizing installed capacity (mean= 1.95). This supports the study of [25] which found that Power Fluctuations affects the Profitability of SMEs. Though, the empirical analysis proves a non-significant difference between SMEs that utilized installed capacity and those that did not utilized installed capacity in terms of profitability in Dekina Local government of Kogi state, Nigeria (given the T-test value of 8.019, p= 0.146).

The Table 3 shows that the productivity of SMEs utilizing installed capacity (mean= 2.58) is higher than the productivity of SMEs not utilizing installed capacity (mean= 1.34). This aligns with the finding of [26] that unstable power supply is instrumental to low productivity in Nigeria, and refutes the finding of [27] that power outage duration had a positive and significant impact on productivity, as measured by technical efficiency of SMEs. The empirical analysis proves a significant difference between SMEs that utilized installed capacity and those that did not utilized installed capacity in terms of productivity in Dekina Local government of Kogi state, Nigeria (given the T-test value of 11.000, p= 0.01).
Table 2. Descriptive analysis of the degree of unreliable electrical power supply on factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>SAF(%)</th>
<th>AFE(%)</th>
<th>AVA(%)</th>
<th>LEF (%)</th>
<th>VLE(%)</th>
<th>Mean score</th>
<th>Cut-off point</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation cost</td>
<td>76 (40.6)</td>
<td>38 (20.3)</td>
<td>20 (10.7)</td>
<td>26 (13.9)</td>
<td>27 (14.4)</td>
<td>3.588</td>
<td>3.050</td>
<td>Accept</td>
</tr>
<tr>
<td>Risk of untimely death</td>
<td>77 (41.2)</td>
<td>21 (11.2)</td>
<td>25 (13.4)</td>
<td>31 (16.6)</td>
<td>33 (17.6)</td>
<td>3.417</td>
<td>3.050</td>
<td>Accept</td>
</tr>
</tbody>
</table>

Source: Field Survey (2018)

Table 3. The significant differences between SMEs’ utilized installed capacity and those not utilized installed capacity in Dekina, Kogi state, Nigeria

<table>
<thead>
<tr>
<th>Variables</th>
<th>Utilized installed capacity</th>
<th>Un-utilized installed capacity</th>
<th>Util. Vs Un-util. installed capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. dev.</td>
<td>Mean</td>
</tr>
<tr>
<td>Operation cost</td>
<td>1.55</td>
<td>.929</td>
<td>2.10</td>
</tr>
<tr>
<td>Profitability</td>
<td>2.41</td>
<td>1.487</td>
<td>1.95</td>
</tr>
<tr>
<td>Productivity</td>
<td>2.58</td>
<td>1.572</td>
<td>1.34</td>
</tr>
<tr>
<td>Competitive edge</td>
<td>1.61</td>
<td>.798</td>
<td>1.00</td>
</tr>
<tr>
<td>Market share</td>
<td>2.94</td>
<td>1.498</td>
<td>1.75</td>
</tr>
<tr>
<td>Contribution to poverty reduction</td>
<td>3.25</td>
<td>1.310</td>
<td>2.04</td>
</tr>
<tr>
<td>Contribution to unemployment reduction</td>
<td>3.55</td>
<td>1.341</td>
<td>1.48</td>
</tr>
</tbody>
</table>

Source: Field Survey (2018)
The Table 3 shows that the competitive edge of SMEs utilizing installed capacity (mean= 1.61) is higher than the competitive edge of SMEs not utilizing installed capacity (mean= 1.00). The empirical analysis also proves a significant difference between SMEs that utilized installed capacity and those that did not utilized installed capacity in terms of contribution to poverty reduction in Dekina Local government of Kogi state, Nigeria (given the T-test value of 10.482, p= 0.01).

The Table 3 shows that the market share of SMEs utilizing installed capacity (mean= 2.94) is higher than the market share of SMEs not utilizing installed capacity (mean= 1.75). The empirical analysis also proves a significant difference between SMEs that utilized installed capacity and those that did not utilized installed capacity in terms of contribution to poverty reduction in Dekina Local government of Kogi state, Nigeria (given the T-test value of 6.004, p= 0.01).

The Table 3 shows that SMEs utilizing installed capacity contribute more to poverty reduction (mean= 3.25) than those SMEs not utilizing installed capacity (mean= 2.04). The empirical analysis also proves a significant difference between SMEs that utilized installed capacity and those that did not utilized installed capacity in terms of contribution to poverty reduction in Dekina Local government of Kogi state, Nigeria (given the T-test value of 14.433, p= 0.01).

The Table 3 shows that SMEs utilizing installed capacity contribute more to unemployment reduction (mean= 3.55) than those SMEs not utilizing installed capacity (mean= 1.48). His aligns with the finding of Olayemi (2012) that inadequate and unstable power supply to the industrial or manufacturing sector is the major cause of unemployment in Nigeria. The empirical analysis also proves a significant difference between SMEs that utilized installed capacity and those that did not utilized installed capacity in terms of contribution to unemployment reduction in Dekina Local government of Kogi state, Nigeria (given the T-test value of 10.961, p= 0.01).

5. CONCLUSION

Unreliable electricity power supply is a critical issue affecting the business environment of Dekina Local government of Kogi State. The finding of this study shows that unreliable electrical power supply is associated with increased operating cost and risk of untimely death among SMEs in Dekina Local government of Kogi State, Nigeria. Electricity power fluctuation affects the utilization of installed capacity.

There are significant differences between SMEs that utilized installed capacity and those that do not utilized installed capacity in Dekina Local government of Kogi state, Nigeria. The SMEs that utilized installed capacity have more probability of achieving realistic objectives than those that do not. Factors such as operation cost, productivity, competitive edge, market share, contribution to poverty and unemployment reduction provide more distinguishing power as indicated by the empirical investigation. However, SMEs that utilized installed capacity witness reduced operation cost, increased productivity, higher competitive edge, larger market share, a greater contribution to poverty and unemployment reduction. The SMEs that are not utilizing installed capacity will be saddled with finding backup power and incurring more expenses.

6. RECOMMENDATIONS

The study, therefore, recommends that:

i. The government and other economic stakeholders should device alternative reliable power supply to facilitate the economic contribution and performance of SMEs in Dekina Local government of Kogi State.

ii. SME owners that do not utilize installed capacity should not only find backup power but strive to acquire a cost-benefit one that puts operation cost at normal rate and avert the risk of untimely death of SMEs.

iii. SMEs that do not utilize installed capacity should relocate their businesses to the environment where electrical power supply is constantly available.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES


2. Kwabla GP. The effect of erratic power supply on SMEs in the Kumasi business


ISSN 2224-607X (Paper)
ISSN 2225-0565


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Peer-review history:
The peer review history for this paper can be accessed here:
http://prh.sdiarticle3.com/review-history/25911