

Effects Of Load-Shedding On The Performance Of Small, Medium And Micro Enterprises In Gqeberha, South Africa

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ABSTRACT

Small, medium and micro enterprises (SMMEs) are recognized for promoting the livelihoods of the poor and for economic growth. The purpose of this study is to investigate how load-shedding affects the performance of SMMEs in the food industry in South Africa. The study was conducted in the Central Business District and Summerstrand areas in Gqeberha (formerly Port Elizabeth). The study is explorative and adopts a qualitative research design. The study population was made up of SMMEs owners in the food industry, with paid employees ranging from 5 to 200 people in the Central Business District and Summerstrand areas within Gqeberha (formerly Port Elizabeth). The purposive sampling method was utilized to select the study participants. The study revealed that load-shedding affected the capacity of SMMEs to provide quality products and services to their customers. To mitigate the effect of power outages, SMMEs adopted alternative power sources like backup generators and adjusted their operations to keep their businesses running. Also, the study confirmed that planned load-shedding enables SMMEs to plan and alleviate the effects of load-shedding. The study concluded that load-shedding disrupts the activities of SMMEs, which impedes customer satisfaction, leading to poor business performance.

KEYWORDS: Load-shedding, Small-Medium, Micro Enterprises, Food Industry, Livelihoods, Electricity, Business Performance, Copying Mechanisms.

1. INTRODUCTION

Globally, Small, Medium, and Micro Enterprises (SMMEs) are known to stimulate economic growth and play a crucial role in income generation, economic diversification, innovation, and employment creation [1]. Likewise, SMMEs in South Africa promote inclusive growth and development and generally improve the trade and industry sector in the country [2,3]. However, SMMEs encounter several challenges, such as the lack of financial support, competition, lack of infrastructure, information opaqueness, lack of professionalism, poor management skills, low levels of technical ability, policy changes, and load-shedding, which threaten the performance and sustainability of their enterprises [2,4]. Despite government efforts to mitigate the load-shedding crisis, which began in 2008, South Africa's electricity challenges have worsened, resulting in longer hours of power interruption [5].

Charles [6] submits that load-shedding affects the performance of small business owners in the food industry due to their heavy reliance on electricity. The food industry constitutes the most delicate part of Fast-Moving Consumer Goods (FMCG). The epileptic power supply is likely to damage food stocked in refrigerators and compromise customer service quality [7]. Studies such as Onakoya [8] and Mutoko [9] have emphasized the importance of a reliable electricity supply for businesses, including SMMEs, to run efficiently and contribute to economic development and poverty reduction. SMMEs in the food sector require a reliable electricity supply to ensure good performance and attainment of set goals [1]. Therefore, this study provides empirical evidence on how load-shedding impacts the performance of SMMEs in the food industry in South Africa, with a specific focus on the Central Business District and Summerstrand area within the city of Gqeberha (formerly Port Elizabeth), which is located in the Eastern Cape Province. The following research objectives guide the study: to determine how load-shedding affects SMMEs in the food industry and to understand the coping mechanisms that SMME owners adopt during load-shedding.

2. LITERATURE REVIEW

2.1. THEORETICAL REFLECTION

2.1.1. THE ECONOMICS OF POWER SYSTEM RELIABILITY AND PLANNING THEORY

The Economics of Power System Reliability and Planning theory, which Mohan Munasinghe developed in 1979, argues that electricity is essential for productive purposes [10]. Commercial, industrial and agricultural producers rely on the availability of stable electricity to provide adequate goods and services to retailers [10, 11].

The theory prescribes generation, transmission, and distribution as the three fundamental elements through which an electric power system must provide reliable electricity for consumers at the required time and location [12, 13]. Thus, electricity becomes unreliable when there are power surges, brownouts or voltage level drops, load-shedding, and blackouts. The effects of unreliable electricity, such as load-shedding, can be calculated by estimating the industrial outage cost based on a comprehensive study of spoilage, the production made idle, and the recovery of lost production during both normal working hours and overtime which leads to poor business performance [10, 14]. Therefore, the disruption of electricity's generation, transmission and distribution components will affect the supply of electricity to customers. In some cases, disruptions are caused by exogenous factors such as adverse weather conditions and strike action by staff in the utility or the associated energy industry [15, 16].

Lastly, the theory posits that the effects of outages vary depending on the industrial consumers or type of industry involved, the duration of the interruption, and the time of occurrence [10]. For SMMEs in the food industry, a reliable electricity supply is essential for producing and distributing goods and services, especially because they are at risk of low performance and/or productivity owing to food spoilage and poor service delivery [17-19]. A study by Alby [20] shows that a reliable power supply increases the productive output of businesses. Thus, the economics of power system reliability and planning theory argues that a reliable electricity supply is an indispensable input for the productivity of SMMEs [21]. Onwumere [22] submits that electricity reliability is generally understood to be positively correlated with business performance. Since FMCG requires reliable electricity for storing and preserving goods, the disruption of electricity considerably affects the quality of goods [23]. Load-shedding is, therefore, a challenge that affects the performance of SMMEs in the FMCG sector, particularly those in the food industry. Considering the above, Figure 1 shows the relationship between a reliable electricity supply and the performance of SMMEs. In contrast, Figure 2 shows how load-shedding leads to the poor performance of SMMEs.

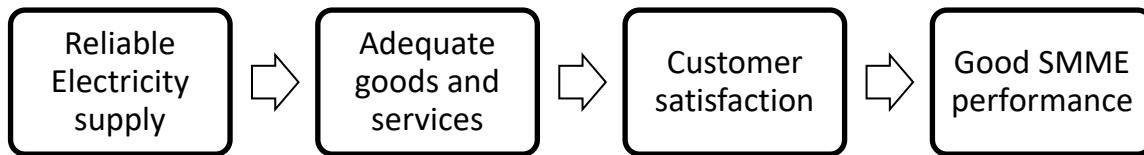


Figure 1: Ideal Process.
Source: Authors' construct [20-23].

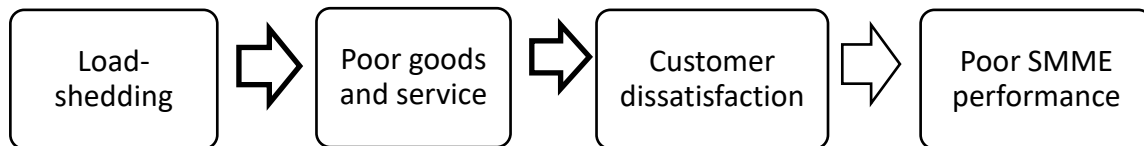


Figure 2: Reality.
Source: Authors' construct [20-23].

2.2. DISCUSSION

2.2.1. SMMEs PERFORMANCE

Considering the critical role that SMMEs play in economic development, their performance is of great interest to the government [24]. Maduekwe [25] notes that one can determine the performance of SMMEs by analyzing financial and non-financial indicators. Prevalent financial indicators include the inflow of cash, net profit margin, sales growth, and operating income. Non-financial indicators predominantly focus on customer satisfaction. However, there is no consensus on the most suitable method to measure SMME performance. Rather, clear indicators which foster easy accessibility of data collection are often utilized by researchers in this area [26].

Business performance can be defined as the extent to which enterprises achieve their goals with a focus on customer satisfaction and income generated at the close of business [1, 27]. The performance of SMMEs is reflected in their effectiveness and efficiency in providing goods and services [26]. Therefore, this study investigates how load-shedding affects the performance of SMMEs in the food industry in Gqeberha.

2.2.2. LOAD-SHEDDING

The power supply is a significant factor in the development of SMMEs. Thus, load-shedding can affect the activities of businesses through different channels that will eventually have adverse effects on the performance of such enterprises [28,

29]. Cissokho [30] observes that an erratic power supply could affect the productivity of an enterprise and increase costs due to damages, repairs, and the purchase of alternative sources of power.

There is a significant relationship between business and electricity. Electricity is essential for business activities such as storage, production, product display, and the powering of equipment, all of which are collectively geared toward achieving business goals. Electricity is crucial for manufacturing and service delivery in private and public sectors. Frederick [31] mentions that SMMEs depend heavily on power to ensure service delivery and customer satisfaction.

Nyanzu [32] adds that power outages affect efficiency and critically limit the performance of SMMEs. In South Africa, about 71% of SMMEs have access to electricity; however, load-shedding persists as a significant challenge [3]. Load-shedding has been identified as a strategy implemented to prevent a total blackout and ensure the provision of a power system during an emergency. Internationally, load-shedding is acceptable as a preventive measure that stops the power system from dilapidating further [33].

Load-shedding by the South African electrical supply commission, known as Eskom, can be planned or unplanned. Planned load-shedding is pre-determined, with a publicized time and date [34]. The scheduled structure of planned load-shedding allows SMME owners to prepare alternative sources of power supply to keep their business activities on when there is load-shedding. Unlike planned load-shedding, unplanned load-shedding occurs at an undefined time. Thus, there is no time to make contingency plans, which affects the quality of food items, damages electrical appliances, and leads to loss of clientele due to poor service and the delay of order deliveries [31, 35]. Thus, themes 2 and 3 under section 3.2.1 will discuss how planned and unplanned load-shedding affects the performance of SMMEs in the food industry in Gqeberha, South Africa.

2.2.3. SMMEs AND POWER SUPPLY IN SOUTH AFRICA

Currently, South Africa suffers from a high unemployment rate estimated at more than 29% of the total population [36]. SMMEs are crucial in tackling unemployment and inequitable distribution of income, providing sustainable livelihoods, and stimulating economic development in South Africa [37]. Micro-enterprises are the most persistent business activity in South Africa [38]. SMMEs have grown and contributed to employment creation over the years, yet the sector suffers a high rate of failure [37, 39, 40, 41].

Over 70% of SMMEs in South Africa fold up within 5-7 years of their inception. These failures are attributed to poor infrastructure, poor business planning, lack of experience, poor marketing, lack of access to funding, failure to comply with regulations, inadequate financing and government support, globalization, and inability to manage growth and access to markets [41]. Furthermore, the extreme competitive pressure from more prominent firms, the rapidly changing and evolving entrepreneurial environment, the lack of managerial skills and entrepreneurial capacity, and the poorly consolidated business framework are notable causes of SMMEs' failures in South Africa [37, 42].

In addition to these challenges, the load-shedding crisis and disruptive power outages affect SMMEs adversely [43]. Goldberg [44] adds that load-shedding is bound to persist due to the deteriorating electricity generation infrastructure in South Africa. The study investigates the performance of SMMEs in the food industry during load-shedding in Gqeberha, considering the long hours of load-shedding during business hours.

SMMEs in the food industry perform virtually all business activities when they have a reliable power supply. In this sector, SMMEs require electricity to refrigerate raw and cooked food. Transactions such as cash registers, point-of-sale systems, vending machines, and e-transactions require reliable electricity. An erratic power supply hinders job creation and economic growth because it affects the performance and productivity of businesses [7, 17, 19, 45]. Theme 1 and 2 under section 3.2.1 close the knowledge gap in this field as it pertains to Gqeberha in South Africa.

3. METHOD(S)

3.1. RESEARCH DESIGN

The research methodology and design refer to the overall plan adopted by the researcher to coherently and logically answer the research questions [46]. The study uses explorative research through a qualitative research design to investigate how load-shedding affects the performance of SMMEs in the food industry. Qualitative research questions are more concerned with trustworthiness, thus establishing the credibility, transferability, confirmability and dependability of the study's findings. Instead of generalisability, the degree to which the study results can be generalized to the broader population from which the sample size is drawn is the major distinguishing factor between a qualitative and quantitative study [46, 47].

Thus, the study population was made up of SMME owners in the food industry, with paid employees ranging from 5 to 200 people in the Central Business District and Summerstrand area within Gqeberha. The purposive sampling method guided by saturation theory was utilized to select 8 participants interviewed for the study out of the desired sample size of 20 participants. O'Reilly [48] argued that because there is no fixed minimum number of participants to ensure quality in a qualitative study, enough information must be gathered to appreciate the phenomenon under investigation. The study reached saturation point from the data generated by the fifth participant, yet the researchers went on to collect more data to ensure the richness of data.

Purposive sampling, also called judgemental sampling, is a non-probability sampling technique based on the belief that the researchers' knowledge of the population is crucial in selecting participants. Also, it enables the researcher to select participants that can answer the research question and meet the research objectives, unlike other sampling methods such as systematic, stratified or cluster sampling, where participants are randomly selected for survey research to make inferences [46]. In this study, participants were chosen because they displayed particular characteristics or features of interest to the study or were experts on the issue under study. Some participants were selected because they were owners or managers of SMMEs in the food industry in the Gqeberha CBD and Summerstrand area. Managers and business owners usually know the operations and management of the enterprises. Therefore, their insightful responses generated useful information on how load-shedding affects the performance of enterprises.

Data collection commenced with a pilot study of 2 participants before the main study commenced to determine the effectiveness of the research method and the interview questions. The researcher obtained data through semi-structured interviews, which served as the research instrument, and a semi-structured interview schedule as the guide. The interviews were recorded with a digital audio recorder, and observations by the researchers were recorded on a notepad. The cover letter describing the study's purpose and consent forms, which solicited willful participation, were distributed to participants. Participants agreed to participate in the interviews voluntarily. Since this study is not quantitative, the researchers stopped data collection at the point of saturation, which is when information became repetitive. Thereafter, the researchers transcribed the interviews verbatim, proofread them, and made necessary corrections to the transcribed data. Next, the data was loaded onto Atlas.ti, a qualitative data analysis software for data coding, which assisted the researchers in arranging the extracted data into themes. After organizing the themes, the researchers extracted the identified themes.

This study adhered to strict ethical considerations of confidentiality, anonymity, and voluntary participation of the target population. Also, the research study obtained ethical clearance (H19-BES-DEV-066) from the Faculty Ethics Committee of the Faculty of Business and Economics Science of Nelson Mandela University.

3.2. RESULTS AND DISCUSSION

The aim of the study was to investigate how load-shedding affects the performance of SMMEs in the food industry. Participants noted that load-shedding affected service capacity and reduced the quality of products that SMMEs offered. Due to load-shedding, some businesses resorted to serving warm instead of hot food, doing cash instead of POS-enabled card payments, lighting candles, using backup generators, and dismissing customers that have no cash to pay. The study appears to support the argument that load-shedding places a critical limitation on the performance of SMMEs [29].

Participants confirmed that planned load-shedding enables them to plan before the electricity disruption and prepare some products to serve customers when there is a power outage, which suggests that planned load-shedding can keep some operations of SMMEs running. However, it leads to poor business performance, strained income, increased costs, and loss of customers due to poor service delivery.

The study obtained information about the lived experiences of SMMEs owners in the food industry in Summerstrand and the CBD area of Gqeberha regarding the effect of load-shedding on their business. The themes that emerged are presented below:

3.2.1. IDENTIFIED THEMES

- Reduced service quality and capacity.
- Accessibility, affordability, and discomfort of coping mechanisms.
- Planned load-shedding enabled participants to manage their operations.

Table 1: Participants and characteristics of the study.

Participants (P) Total (n=8)	Location	Job description	Employment duration
P1	Summerstrand	Manager	3-4 Months
P2	Summerstrand	Manager	3 years
P3	CBD	Owner	39 years
P4	CBD	Owner	6-7 Years
P5	CBD	Owner	Not available
P6	CBD	Owner	9 years
P7	CBD	Owner	10 years
P8	Summerstrand	Manager	2 years

Source: Field data collection (August 2019).

THEME 1: REDUCED SERVICE QUALITY AND CAPACITY

This theme reflected the inefficiency and ineffectiveness of SMMEs in the food industry when load-shedding was active. Participants indicated that businesses do not operate at full capacity during power outages. During load-shedding, customers stay back at home to avoid frustration.

Such an assumption by the customers could be attributed to the fact that SMMEs are unable to deliver the same quality and volume of services they usually offer on a normal working day when electricity is uninterrupted. These findings are similar to Scott [49], who argued that the competitive performance of an enterprise is dependent on the product quality and the capacity of such an enterprise. Unfortunately, unreliable electricity supply affects both qualities of goods and services and the capacity of enterprises to deliver the same. The following quotations depict the lived experiences of the participants regarding these factors:

When it is 6 o'clock (evening), you see us struggling because everywhere will be dark and when customers come, they want the food to be hot, you know this is a restaurant, we serve African food, and for you to enjoy the African food, it must be served hot or warm but when there is no light, when there is load-shedding, how will you get the power to warm the food for them, they always complain... customer will come and say I want my food to be hot. We just tell the customer, please it's gonna be warm, please just manage it, or the meat will not be fresh, you see, so those are the things we face when there is load-shedding (Participants 7).

We can only as I said have a minimal offering to our customers and we are a coffee shop, so people essentially come here for coffee and it's something that we cannot offer" (Participant 8).

When such a thing happens, they use abusive words on you, call you all sort of names, they can tell you, hey my friend if you are not capable of running this business, you better shut it down and leave (Participant 6).

Participant 6's comments show the disappointment and frustration of customers during load-shedding. The implication of such distress is reduced patronage and poor performance of SMMEs. The views of the participants above confirm Cissokho's [30] argument that load-shedding reduces the quality of services and results in damaged goods, malfunctioning machines, and shoddy work due to the rush to meet deadlines before anticipated power outages. In the case of participants 6, 7, and 8 above, load-shedding reduced the quality of services because they could not deliver the same quality of food to customers because of power outages. When businesses experience load-shedding, they become ineffective and inefficient.

When customers pay for services, they expect value for money, and when service providers fail to deliver, it paints them in a bad light which could lead to a decline in their clientele over time. Poor customer service often leads to the loss of customers due to poor performance.

THEME 2: ACCESSIBILITY, AFFORDABILITY, AND DISCOMFORT OF COPING MECHANISMS

SMMEs rely on the supply of electricity for day-to-day operations. Unplanned load-shedding does not allow businesses to make plans for backup generators or other power sources as precautionary measures. However, participants indicated that some businesses purchased or used generators at one point or the other. Scott [49] argues that generators are the most common alternative source of power that SMMEs resort to in countries with poor electricity reliability. The following quotations reveal the lived experiences of participants in relation to coping mechanisms during load-shedding:

Load-shedding is a big bug bee in my life. For a small business like mine, we don't always have sufficient funds for a huge generator and along with the rules of the shopping complex that we are in, causes major problems, and we can sometimes go 4,5, 6 hours without anything and there is only so much you can do on gas. So, it does play a huge role, and we have actually tried to look at ways to sue Eskom or whoever you wanna call it but errrr, I suppose it's hitting your heads against the wall because I don't think anything will be done. But it is a very big problem for us, and we just pray that this doesn't happen (Participant 8).

I have to find a way to keep running my business because I cannot rely on the government supplying us light, I have to buy a generator, I have to go to a place where they are selling ice to buy ice in other to freeze the water people are drinking, I have to switch up to using gas instead of using electricity to cook, so all this is the way I make out by myself in other to run my business (Participant 6).

The sentiments expressed by the quoted participants resonate with Alby [20], who states that insufficient and unreliable electricity supply is a constraint that forces SMMEs to opt for alternative means of generating power. Similarly, Nooij [50] reports that the level of reliance on electricity interconnects with the level of vulnerability and unpreparedness in

the business community when load-shedding. Participants 6 and 8 stated that irregular electricity supply alerted them to consider and seek alternative power generation and service provision methods.

According to Adewuyi [29], load-shedding lowers the performance of firms that depend mainly on electricity. Correspondingly, Participants 1 and 8 displayed high levels of vulnerability because they failed to consider the shopping center's backup power policy before renting the space. Participant 1 noted that:

...with the load-shedding because there is one generator (for the entire shopping complex)... we only get like few things that is working... we can't put all the lights on with the generator, we have to decide what to put on, we have to use that for the cameras, that always has to be on, and with that hot stove in the kitchen and I would rather have the phone working you know than the computers.

Heavy reliance on electricity affects the enterprise's service capacity and reduces the performance of businesses. Businesses hardly function appropriately during periods of load-shedding because generators are sometimes limited in capacity [49]. Nooij [50] maintains that businesses should take precautionary measures such as installing backup power-generating facilities. If adequate backup power is in place and the customers are aware of this, they go to other businesses with alternative power sources. Participant 1 noted that:

load-shedding doesn't only affect this place... it's like the whole Summerstrand or whatever, so it's a whole group of people that shuts down internally and just chill at home, so no one wants to go out and do stuff because it is dark everywhere and nothing is working, and you have to like struggle everywhere you go.

Perhaps the lack of preparedness among SMMEs in South Africa is because load-shedding is a recent phenomenon. However, Schoeman [35] states that it has become a necessity for small businesses to have a backup measure readily available to mitigate the effects of erratic power outages in South Africa. Onwumere [22] observe that many SMMEs in Nigeria invest in personal stand-by generators to ensure the supply of power during load-shedding.

THEME 3: PLANNED LOAD-SHEDDING ENABLED PARTICIPANTS TO MANAGE THEIR OPERATIONS

One possible factor that enables SMME owners to sustain their businesses during load-shedding is the provision of a planned load-shedding schedule. Results generated under this theme suggest that planned load-shedding enables SMMEs to prepare minimal offerings to cater to some of the demands of their customers during load-shedding. The following quotations reflect participants' lived experiences in relation to planned load-shedding schedules.

If we know there will be load-shedding we plan and we grind our coffee ahead, get our fresh stuff in earlier, we just basically take about an hour or two to prep ourselves for what we can offer, and that is what we are offering the customers are of good qualities so that they can come back (Participant 8).

When we know, or we are informed, in the morning we already rush everything we want to do because if the light goes off around 6 pm, definitely, we cannot cook again with the lamp. So rush everything, make sure we are done cooking, so between that time that there is no light, we rush to finish up... (Participant 4).

The findings above are consistent with those of Nooij [50], who reports that the effects of electricity interruption could be reduced if the disruptions are structural rather than incidental. These findings are also in line with Scott [49], who argues that planned load-shedding mitigates the effect of an unstable electricity supply.

Although planned load-shedding enables SMMEs to strategize, it has financial implications. In this regard, the findings affirm Wang's [51] observation that the cost of mitigating or sustaining SMMEs when load-shedding is active depletes profitability. Similarly, Frederick [31] notes that the duration of electricity outages compound the cost implications of load-shedding on SMMEs regardless of the prior notice or the structural nature of the electricity disruption.

The findings of this study reiterate Scott's [49] view that planned load-shedding allows SMMEs to prepare, thus reducing the effects of power outages on their enterprises. These findings suggest that when electricity supply becomes unreliable, dependable load-shedding schedules help SMMEs to plan their daily business activities and improve performance.

4. CONCLUSION

The paper investigated the effects of load-shedding on the performance of SMMEs in the food industry in South Africa by collecting data from SMME owners and SMME managers in the food industry in Gqeberha. Participants were selected through purposive sampling and guided by the saturation theory. The generated data were transcribed, coded and arranged into themes with Atlas.ti, a qualitative data analysis software. The study's general findings reveal that load-shedding affects

the activities, productivity, and performance of SMMEs. These findings are in line with the economics of power system reliability and planning theory, which states that electricity is essential for the productivity of businesses.

The findings of this study established that when load-shedding is active, the quality and capacity of services rendered by SMMEs are reduced, leading to customer dissatisfaction. SMMEs can use backup generators to mitigate such adverse effects and adjust business operations to cater to load-shedding. The study further established that while planned load-shedding enables SMMEs to strategize, the cost of mitigating the effect of load-shedding is substantially high.

Even though SMMEs covered in this study attempted to mitigate the effects of load-shedding on their enterprises, the solution lies primarily with Eskom as the national utility responsible for electricity generation and the adjustment of tenancy agreements by shopping centers to take cognizance of the impact of load-shedding.

The findings of this study are not generalizable to other business contexts; therefore, there is a need for quantitative research that can produce generalizable results.

CONFLICT OF INTEREST

There is no conflict of interest.

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