

Investigating the impact of loadshedding on Small, Medium, and Micro enterprises in Klerksdorp, South Africa.

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Abstract

Eskom's long-running inability to provide reliable electricity is a key reason for the stagnating South African economy. The negative impact on the economy is also keenly felt in the Small, Medium, and Micro Enterprise (SMEE) sector, with many of these businesses struggling to keep their doors open. This article uses a qualitative research design to investigate the impact of loadshedding on SMMEs in Klerksdorp, South Africa. 31 SMMEs were sampled and interviewed in August 2023. The results speak to the increased operational costs and financial losses as a result of load shedding. Although a relatively small number of respondents had to resort to layoffs as a mitigation strategy, the percentage of the workforce that was retrenched ranged between 40 and 50 percent. The results of this study remind us of the urgent need to protect employment opportunities created by SMMEs, often against the odds.

Keywords: *Enterprises, Klerksdorp, Impact of Loadshedding, Small, Medium, and Micro Enterprises*

Introduction and aim:

A recent Harvard study reported that many economists consider the ineffectiveness and wastefulness of South Africa's state-owned enterprises (SOEs) as one of the key explanations for the current economic stagnation being experienced in South Africa (Hausmann *et al.*, 2022). Eskom can be considered *prima facie* evidence of the decline in the functionality of these SOEs, although several other SOEs share the same characteristics, e.g., Transnet or South African Airways (Hausmann *et al.*, 2022). Eskom, being the main electricity provider in South Africa, has the responsibility of ensuring a reliable supply of electricity to support the country's economy and society at large (Kessides, 2020; Schoeman, 2023).

Since its inception in 1923, Eskom has enjoyed a near-monopolistic position in both energy generation and transmission (Kessides, 2020; Schoeman, 2023). In 2004, it was responsible for approximately 96% of the total electricity generated in South Africa. Currently, Eskom remains the dominant electricity provider in the country, generating more than 90% of the total electricity consumed in South Africa (Kessides, 2020; Hausmann *et al.*, 2022). As a result, its performance (or lack thereof) is a key element in the overall performance of the economy (Schoeman, 2023).

The demand for electricity increases in tandem with rising population, industrialisation, and income (Umar & Kunda-Wamuwi, 2019; Umar *et al.*, 2022). This is a normal characteristic of growing and expanding economies. South Africa and Eskom is no exception. In a white paper from 1998, the Department of Minerals and Energy noted that "Eskom's current generation capacity surplus will be fully utilised by about 2007" (Schoeman, 2023). As a result, it is expected that power utilities expand their generation capacity to generate the supply needed to address increasing levels of demand from commercial users and homeowners (Umar *et al.*, 2022). Eskom was urged to take urgent steps to guarantee that demand does not exceed supply capacity (Department of Minerals and Energy, 1998; Schoeman, 2023). Eskom did not adhere to these calls, and its shortcomings are ascribed to underinvestment and poor management over a prolonged period (Schoeman, 2023).

The first load shedding¹ was enforced in 2007. Load shedding has since worsened over time with more regular occurrences (Eskom, 2023c; Schoeman, 2023) and has been a significant issue that has plagued the country's economy and development since its inception (Schoeman, 2023).

Figure 1 illustrates the gigawatt hours of load shedding between 2018 and 2023.

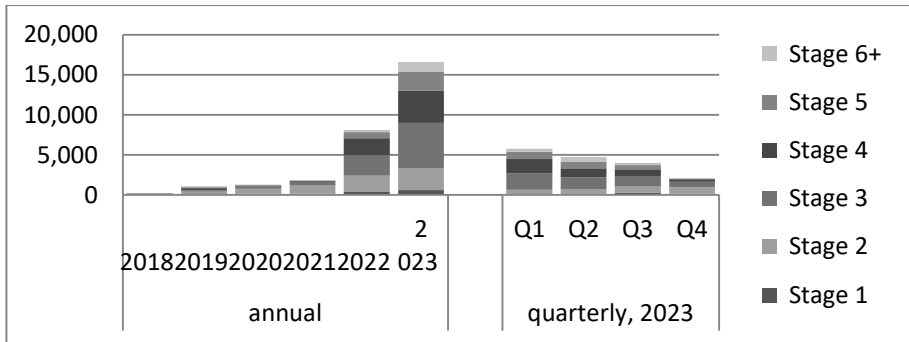


Figure 1: Gigawatt hours of load shedding between 2018 and 2023
Source: TIPS (2024)

As recent as 28 November 2023, ArcelorMittal South Africa (AMSA) indicated that it may close its long-products business; a total of 3,500 direct and contractor jobs at its Newcastle and Vereeniging operations are in jeopardy (Creamer, 2023). This comes against a background loss of R448 million in the interim period, up to 30 June 2023 (Creamer, 2023). The inferior performance was attributed to intense loadshedding during the period, which not only disrupted the group's operations because of 41 Eskom instructions during the period for a curbing of its electricity demand but also downstream demand, as fabricators also reduced production shifts (Creamer, 2023).

The knock-on effect of announcements such as this on the rest of the economy is nothing short of disastrous, with particularly serious challenges for small, medium, and micro enterprises (SMMEs) (Umar *et*

¹According to Schoeman, "load shedding is a strategic measure employed by the energy utility, Eskom, to alleviate pressure on the energy generation system by temporarily discontinuing energy distribution to specific geographical areas when the energy system lacks sufficient capacity to meet demand."

al., 2022; Schoeman, 2023) where the negative impact on SMMEs is hard felt.

Companies that depend on electricity for everyday operations cannot function during load shedding and must search for alternative electricity sources or risk going out of business (Umar *et al.*, 2022; Schoeman, 2023). Small, medium, and micro enterprises (SMMEs) are affected since they frequently lack the working capital needed to cover the additional costs of alternative energy sources (Fatoki, 2018; Schoeman, 2023). Finding alternative sources might be a theoretical possibility, but according to a study by GreenCape (2023), the investment cost per kWh for a diesel generator is between R2,000 and R4,000, while that for a lithium-ion battery is between R4,000 and R10,000, making it very expensive.

After the recent COVID-19 pandemic and the effects it has had on SMMEs, the impacts of loadshedding are felt even more intensely. With the significant contribution SMMEs make to the South African economy, it is important to establish the impact that loadshedding has on SMMEs (Schoeman, 2023).

With the above as background, the primary objective of the study is to investigate the impact of loadshedding on SMMEs in South Africa, using an exploratory case study design within Klerksdorp in South Africa's North West province. The specific objectives flowing from the primary objective of the study are the following:

- *Investigate economic aspects such as reduced sales, increased expenses, and reduced profitability;*
- *explore the adverse socio-economic effects of loadshedding on SMME owners and workers, such as increased staff turnovers and lower job security; and*
- *identify the coping mechanisms SMMEs currently use for dealing with load shedding, such as investing in backup power supplies or adapting business processes.*

The rest of the study is deployed as follows: SMMEs are defined, and their contribution to the South African economy is discussed in the next section. This is followed by a discussion of the methodology and research area. The findings and results are then presented, followed by relevant conclusions, limitations, and areas for future studies.

Small, Medium, and Micro Enterprises (SMMEs) in South Africa: conceptual framework and importance to economic performance

South Africa's National Small Business Act No. 102 of 1996 defines a SMME as: "small business means a separate and distinct business entity, including co-operative enterprises and non-governmental organisations, managed by one owner or more, which, including its branches or subsidiaries, if any, is predominantly carried on in any sector or subsector of the economy mentioned in column 1 of the Schedule and which can be classified as a micro-, a very small, a small, or a medium enterprise by satisfying the criteria "(Republic of South Africa, 1996)". It is important to mention, however, that over the years, the definition of South African SMMEs has essentially remained the same, with the only change being the classification criteria used to demarcate these entities to be more in line with international standards (Bruwer, 2020; Mbomvu *et al.*, 2021).

In addition, the National Small Business Act No. 102 of 1996 provides a schedule of small business classification in terms of aspects such as size, the number of total full-time equivalents of paid employees, total annual turnover, and total gross asset value (fixed property excluded) (Republic of South Africa, 1996). Schoeman (2023) provides a detailed description of each of these categories along with the sector- or sub sectors (in accordance with the Standard Industrial Classification) under which the SMMEs can be classified, as it is produced in the applicable legislation. See Table 1 below.

Table 1: Schedule of small business classification according to the National Small Business Act No. 102 of 1996

Sector or sub-sectors in accordance with the Standard Industrial Classification	Size or class	Total full-time equivalent of paid employees	Total annual turnover	Total gross asset value (fixed property excluded)
		Less Than	Less Than	Less Than
Agriculture	Medium	100	R 4.00 m	R 4.00 m
	Small	50	R 2.00 m	R 2.00 m
	Very Small	10	R 0.40 m	R 0.40 m
	Micro	5	R 0.15 m	R 0.10 m

Mining and quarrying	Medium	200	R 30.00 m	R 18.00 m
	Small	50	R 7.50 m	R 4.50 m
	Very Small	20	R 3.00 m	R 1.80 m
	Micro	5	R 0.15 m	R 0.10 m
Manufacturing	Medium	200	R 40.00 m	R 15.00 m
	Small	50	R 10.00 m	R 3.75 m
	Very Small	20	R 4.00 m	R 1.50 m
	Micro	5	R 0.15 m	R 0.10 m
Electricity, gas, and water	Medium	200	R 40.00 m	R 15.00 m
	Small	50	R 10.00 m	R 3.75 m
	Very Small	20	R 4.00 m	R 1.50 m
	Micro	5	R 0.15 m	R 0.10 m
Construction	Medium	200	R 20.00 m	R 4.00 m
	Small	50	R 5.00 m	R 1.00 m
	Very Small	20	R 2.00 m	R 0.40 m
	Micro	5	R 0.15 m	R 0.10 m
Retail and motor trade and repair services	Medium	100	R 30.00 m	R 5.00 m
	Small	50	R 15.00 m	R 2.50 m
	Very Small	10	R 3.00 m	R 0.50 m
	Micro	5	R 0.15 m	R 0.10 m
Wholesale, trade, commercial agents, and allied services	Medium	100	R 50.00 m	R 8.00 m
	Small	50	R 25.00 m	R 4.00 m
	Very Small	10	R 5.00 m	R 0.50 m
	Micro	5	R 0.15 m	R 0.10 m
Catering, accommodation, and other trade	Medium Small	100	R 10.00 m	R 2.00 m
	Very Small	50	R 5.00 m	R 1.00 m
	Micro	10	R 1.00 m	R 0.20 m
		5	R 0.15 m	R 0.10 m
Transport, storage, and communications	Medium	100	R 20.00 m	R 5.00 m
	Small	50	R 10.00 m	R 2.50 m
	Very Small	10	R 2.00 m	R 0.50 m
	Micro	5	R 0.15 m	R 0.10 m
Finance and business services	Medium	100	R 20.00 m	R 4.00 m
	Small	50	R 10.00 m	R 2.00 m
	Very Small	10	R 2.00 m	R 0.40 m
	Micro	5	R 0.15 m	R 0.10 m
Community, social, and personal services	Medium	100	R 10.00 m	R 5.00 m
	Small	50	R 5.00 m	R 2.50 m
	Very Small	10	R 1.00 m	R 0.50 m
	Micro	5	R 0.15 m	R 0.10 m

Source: Schoeman (2023), as adapted from the National Small Business Act No. 102 of 1996

According to Mbomvu *et al.* (2021), SMMEs make up 97% of all business entities in South Africa, employ 56% of the labour force, and contribute between 45% and 50% of the GDP (Bhorat *et al.*, 2018). These businesses are a vital part of macroeconomic growth and are crucial to the country's economic development (Maliwichi *et al.*, 2023; Schoeman, 2023). Small, medium, and micro Enterprises (SMMEs) contribute towards South Africa's national product through producing goods and services for consumers and other organisations (Maliwichi *et al.*, 2023). Practical examples of this include handmade crafts, bespoke furniture, clothing lines, and artisanal foods. Furthermore, services provided by SMMEs in, for example, the tourism and hospitality industries include boutique hotels, safari tours, and local restaurants. The provision of these goods and services by SMMEs also has a multiplier effect on the national product of South Africa. As both suppliers and consumers, their demand for goods stimulates the activity of their suppliers, resulting in a positive cycle of economic growth (Maliwichi *et al.*, 2023; Schoeman, 2023). The South African government views SMMEs as an important component in the strategy to reduce poverty among vulnerable households (NDP, 2017; Maliwichi *et al.*, 2023).

The country has between 2.4 and 3.5 million SMMEs, with the majority in the informal and micro sectors (Schoeman, 2023). The South African Government maintains that they offer significant potential for growth, job creation, and fundamental economic reform, which remains largely untapped (The Presidency of the Republic of South Africa, 2022). South Africa had 710 000 small formal businesses in 2022. The figure has risen from 590,000 in 2010 to 680,000 in 2019, following a decrease during the COVID pandemic (TIPS, 2023).

Comparing the SMME sector and its contribution to the economy in South Africa with other countries requires a movement away from the absolute number of SMMEs to their relative contribution to employment and GDP. According to Bhorat *et al.* (2018) formal and informal SMMEs constitute more than 70% of employment and 60% of GDP in low-income countries. For middle-income countries, the percentages are even higher, at 95% and 70%, respectively (Ayyagari *et al.*, 2007; Bhorat *et al.*, 2018). South Africa performed relatively weaker in both categories. SMMEs in South Africa employ roughly 56% of the workforce (Bhorat *et al.*, 2018) and contribute an estimated 45% to 50% towards GDP in comparable time periods (Bhorat *et al.*, 2018). At the end of 2022, small formal businesses were responsible for 30% of overall employment, 32% of all waged employment (including informal and domestic work), and

half of the waged work in South Africa's formal private sector (TIPS, 2023; Schoeman, 2023).

One in five private, formal small businesses provides professional services ranging from education and healthcare to engineering, legal assistance, and creative work. A quarter operates in retail and hospitality. The remainder are in construction, transportation and communications, manufacturing, and agriculture (TIPS, 2023; Schoeman, 2023). The above figures provide further evidence that SMMEs in South Africa can create jobs and build human capital (Bhorat *et al.*, 2018; Schoeman, 2023).

However, the majority of SMMEs rely heavily on electricity from Eskom for their company's operations (Schoeman, 2023). However, load shedding makes it difficult for small businesses to operate effectively because they typically lack the money to invest in alternate electricity sources (Schoeman, 2023). Loadshedding is responsible for significant challenges to their efforts, and the cost of investing in other sources, such as diesel generators or lithium-ion batteries, appears to be unsustainable for small businesses (Deichmann *et al.*, 2011; GreenCape, 2023; Schoeman, 2023). Load shedding can have a negative influence on South African SMMEs' profitability, liquidity, solvency, and efficiency (Goldberg, 2015; Umar *et al.*, 2022).

Given the importance of load shedding as a significant issue affecting the country's economic landscape, there is an urgent need for additional research and analysis to examine the effects of load shedding on SMMEs in South Africa (Schoeman, 2023). Therefore, this study seeks to help fill this need through the methodology explained in the next section.

Methodology

This study uses a qualitative research design. An exploratory design is used for this study as it allows us to explore and provisionally assess how and to what extent loadshedding affects small, medium, and micro enterprises (SMMEs) in Klerksdorp, South Africa. The qualitative component of the study allows for a better understanding of the perceived effects of loadshedding on SMMEs. This research approach is ideal to gain knowledge about the subjective experiences and perceptions of the participating SMMEs (Maxwell, 2008).

The case study area, Klerksdorp, in South Africa's North West province, provides a valuable and distinct backdrop for our study (Schoeman, 2023). See Map 1 below.



Map 1: Klerksdorp's location in perspective.

Source: Google Maps (2024)

Klerksdorp had a total population of 186 515 people within 55 351 households, with 66.7% of residents being of working age according to the previous official census data (StatsSA, 2011; Schoeman, 2023). The city includes a broad spectrum of small, medium, and micro enterprises (SMMEs), rendering it an ideal case study for this research endeavour (Schoeman, 2023).

The data collection strategy used included the administration of a survey with a combination of open-ended and closed questions to various SMMEs in Klerksdorp. The open-ended questions were specifically included to give participating SMMEs specific and extensive insights into the effects of load shedding on their operations (Schoeman, 2023). For example, there was no time limit in terms of the extent of the answers that could be provided to the questions posed, and the first author encouraged the participants to be as extensive as possible in their responses. Furthermore, the survey gathered information on the respondents' strategies for mitigating the consequences of load shedding and dealing with the associated financial and other challenges. Including this element in the survey was important for two reasons. Firstly, it

served as recognition of the resilience and continued effort to stay in business, as displayed by the entrepreneurs. Secondly, recognising the effort put in by the owners of the SMMEs served as encouragement for the participants to share and comment on their experiences and solutions, resulting in an exploratory yet in-depth insight into how load shedding affects SMMEs and how they deal with the associated challenges (Schoeman, 2023).

The absence of a database containing the details of all SMMEs in Klerksdorp negated the possibility of utilising a random sampling technique. Therefore, the alternative was to make use of non-random, purposeful sampling (Etikan & Bala, 2017). It is a specific method of selecting participants based on predetermined criteria that align with the research objectives, especially in cases where the size of the research population is unknown, as is the case in this study. Non-random purposeful sampling involves actively selecting participants that possess specific characteristics that are important to the study's focus (Suri, 2011). In this study, the criteria were adherence to the definition of a SMME (as provided earlier) in Klerksdorp, North West, South Africa. In practice, this implies that the first author conducted a preliminary telephonic conversation with a potential SMME. The purpose was twofold. Firstly, to ask if the SMME would be willing to participate, and secondly, to confirm that the SMME met the set criteria. If the SMME met the criteria and was willing to be interviewed, the first author determined how and when to conduct the survey, and then an appointment was scheduled where needed in order to complete the survey.

In addition, snowball sampling was used. Snowball sampling involves selecting initial participants on purpose based on their relevance to the study (Goodman, 1961). Practically, this implies that the chosen and willing SMMEs are then requested to refer other potential participants (who satisfy the same selection criteria) to the researchers (Schoeman, 2023). The first author then followed the same procedure by first contacting them telephonically and confirming their availability and whether they met the selection criteria. The sample size increased as this process progressed. This strategy was especially helpful because there is no complete list or database of SMMEs in Klerksdorp (Schoeman, 2023), making typical random sampling methods challenging and, essentially, not a viable option in this instance.

The questionnaire used in this study went through a comprehensive design and refinement procedure (Schoeman, 2023). All authors

scrutinised the draft questionnaire, refining the various questions of the survey instrument. The final version includes questions about the surveyed SMMEs current situation as well as the perceptible impact of load shedding on their operations. Furthermore, the questionnaire includes several open-ended questions strategically placed to allow possible qualitative analysis, particularly about elements such as the mitigation strategies used to counteract the impact of load shedding (Schoeman, 2023).

All ethical considerations and principles were followed throughout the research process. The SMMEs that took part in the survey were given the assurance that their responses would be kept anonymous, maintaining their privacy and confidentiality (Schoeman, 2023). They were also assured that they would receive no direct benefits from participating in the field survey and that their input would only contribute to the accuracy and thoroughness of the study (Schoeman, 2023).

The first author conducted the fieldwork from 18 to 31 August 2023. A total of 43 surveys were distributed. Of the 43 surveys distributed, a total of 31 were completed and received back, for a response rate of 72.1%. The response rate was deemed acceptable in terms of the norm found in the literature for this type of survey research.

The 31 surveyed SMMEs were categorised into a standard industry classification.

Figure 2 represents the distribution.

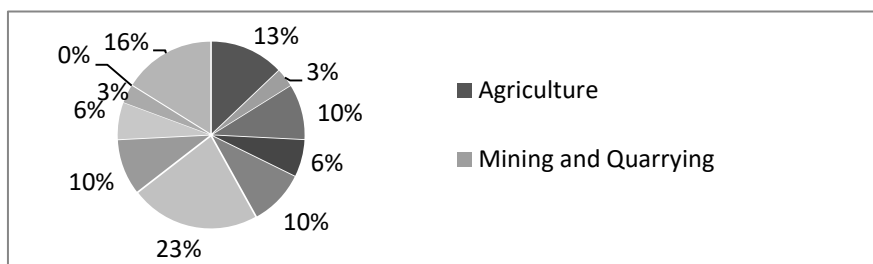


Figure 2: Sector distribution among the population (n=31)

The different sectors and the representation within the surveyed sample were as follows: Retail and motor trade and repair services had the highest representation at 23% (n=7) of the sample. This was followed by

community, social, and personal services at 16% (n=5), and agriculture at 13% (n=4). The three SMMEs in the manufacturing and construction sectors each accounted for 10%, as did wholesale trade, commercial agents, and allied services. The catering, accommodation, and other trade sectors represented 6% (n=2) of the total sample. The sectors of electricity, gas, and water also constituted 6% (n=2) of the sample. Mining and quarrying, as well as the transportation, storage, and communications sectors, each made up 3% (n=1). It can be noted that the reason for the retail, motor trade, and repair services having the highest representation in the sample is because Klerksdorp has a large number of motor vehicle retailers, especially second-hand retailers. This is noticeable when you drive along the N12 highway through Klerksdorp.

The next section presents and discusses the results, findings, and discussion thereof.

Results, Findings and Discussion

The primary objective of this study is to investigate the impact of loadshedding on SMMEs in Klerksdorp, in South Africa’s North West province. The various secondary objectives are to unpack the economic effects in terms of reduced sales, increased expenses, and reduced profitability. In addition, we endeavour to understand the socio-economic effects on owners and workers, e.g., increased staff turnovers and lower job security. We further explore the coping mechanisms SMMEs currently use for dealing with load shedding. The results will be discussed within the context of the above objectives.

The survey commenced with a test in terms of the perceptions of the impact of loadshedding on various business aspects typical of formal and informal businesses, including SMMEs. The results are presented in Table 2.

Table 2: Perceived impacts on business areas (%)

	No real impact	Slight impact	Impactful	Big Impact	Very impactful
Revenue and profitability	12%	10%	29%	23%	26%
Morale and productivity	29%	3%	26%	23%	19%

Customer relationships and retention	36%	13%	29%	16%	6%
Innovation and growth	19%	13%	23%	19%	26%
Business reputation and brand perception	35%	20%	26%	6%	13%

As indicated in Table 2, businesses experienced a large impact on revenue and profitability, as echoed by the 78% of SMMEs that indicated that their revenue and profits were negatively impacted (Impactful, Big Impact, Very Impactful). This may well be due to the increased operational costs, which will be investigated in more detail. These findings confirm the view expressed in the literature that continued load shedding reduces revenue and increases operating costs for retailers in South Africa (Goldberg, 2015; Umar *et al.*, 2022; Mabunda *et al.*, 2023). Indirectly, load shedding can also affect the income-generating activities of households that depend on these businesses (including SMMEs) to make a living (Umar *et al.*, 2022). Participants are also quoted saying, “*we now have to work more overtime*” when asked how they adjust their business goals to accommodate the challenges posed by load shedding.

Customer relationships and retention, as well as business reputation and brand perception, were also affected, but not as significantly as other business operations, with 49% of SMMEs indicating either no real impact or a slight impact on morale and productivity, and 55% indicating no real or slight impact on reputation and brand perception. Banderker (2022) researched the perceived psychological and economic effects on employees in SMMEs and found similar results. This could be due to the fact that people understand the impacts that load shedding has on small businesses and know it is not the fault of the business, and they then still support these SMMEs. Innovation and growth are important aspects for any company that wants to experience increased growth and profits. 26% of SMMEs reported big impacts on innovation and growth, which indicates that increased load shedding deters increased innovation, which in turn decreases the growth of the company.

Figure 3 dives deeper into the specific areas of impact among the SMMEs in our sample and represents the main areas that are impacted during bouts of load shedding.

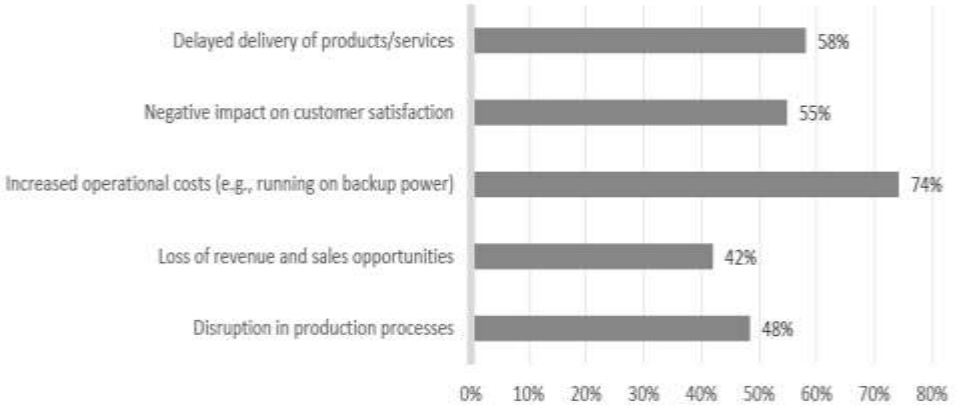


Figure 3: Effects on business operations of SMMEs in Klerksdorp, South Africa

It was expected that many businesses would experience delays in their production processes and business operations, as well as cost increases. The results in Figure 3 confirm this. Almost three-quarters (74%) of the sampled SMMEs indicated that they experienced increased operational costs, such as having to run backup power units such as diesel generators, solar power, or backup battery inverters, with 48% of SMMEs experiencing a disruption in their production processes. Furthermore, 58% of the respondents experienced a delay in delivery of products or rendering of services, which resulted in more than half (55%) of the SMMEs in the sample indicating that load shedding had a negative impact on customer satisfaction due to the negative impacts of load shedding. These results are also echoed in the findings of Mbomvu *et al.* (2021) and Mabunda *et al.* (2023), where surveyed SMMEs could not continue production or had a delay in production due to load shedding. One of the participants even mentioned that if load shedding continues, it would not be beneficial for the business and they would have to close the business, with another stating that revenue has decreased due to consumers not buying as much meat as always due to freezers defrosting during load shedding. Furthermore, businesses also mentioned that they are of the opinion that the outlook regarding the loadshedding problem

for the future is also very bleak and that they should focus on higher turnover in order to cover their generator costs.

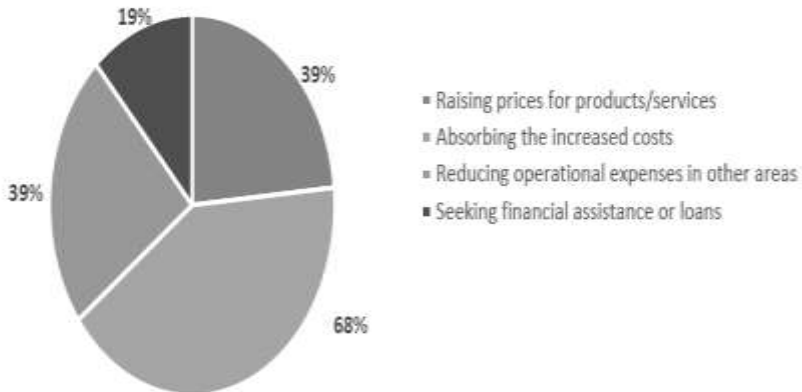


Figure 4: Mitigation of increased operational costs by SMMEs in Klerksdorp, South Africa

Figure 4 indicates that the effects that load shedding has on operations also have a direct and negative effect on operational costs. The results of Goldberg (2015) paint a similar picture for South Africa as a whole. Interestingly, 68% of SMMEs did not raise their prices as an immediate mitigation measure. Respondents attempted to absorb the rising operational costs internally to ensure that they did not lose business due to an increase in prices. However, 39% of respondents did increase their prices for products and services as well as reduce expenses in other non-key areas of their businesses. Financial assistance through loans accounted for 19% of the surveyed SMMEs' mitigation strategies. These results are supported by Olajuyin and Mago (2022), where SMMEs implemented alternative power sources and adjusted operations as mitigation strategies. Respondents also expressed their disappointment when asked, "On a scale of one to 10, how severe is the financial impact on your business?" with one respondent quoted saying, "10, the generator uses diesel, which is very expensive". Furthermore, participants mentioned that insurance claims from their businesses also increased with load shedding costing them machinery that breaks as well as information stored on computers that is broken by constant loadshedding.

The increased operational costs directly impact the profitability of the surveyed SMMEs, similar to the Goldberg (2015) results for South

Africa. The results paint a grim picture in this regard, where 71% of respondents reported substantial financial losses and only 29% of businesses managed to not report any substantial losses in their revenue and profits. These results support the findings of Fatoki (2018). The affected SMMEs may not have the operational capital needed to cover the additional operational costs as a result of frequent blackouts.

Due to the increased load shedding, a staggering 89% of the respondents reported increased operational costs as the main reason for the sustained financial losses. This comes as no surprise, as most of them have to run additional power sources in times of power outages. The second reason is due to customer dissatisfaction leading to refunds (48%), followed by cancelled orders (45%), with a decrease in sales and loss of business opportunities as the reasons with the lowest reported importance. South Africa has been experiencing load shedding since 2008, so the reason why only 6% of SMMEs report loss of opportunities as the major reason for financial losses could be because customers come to expect the operational impediments attributed to load shedding after having had to deal with it for the last 16 years.

On the subject of workforce and employment issues, the smallest number of employees in the surveyed businesses is one person, with the maximum number of employees being 120. Within this range, the mean and median number of employees in the sample were 16 and 9, respectively. Regarding payment of employees as a result of load shedding, 52% of firms found it increasingly difficult to pay their employees on time, and only 48% of SMMEs were able to do so. Mabunda *et al.* (2023) also mentioned that SMMEs struggled to pay employees in their study.

Figure 5 reports on the workforce-related measures taken by the respondents as mitigation steps in light of the pressures placed upon them by the impact of load shedding on their businesses.

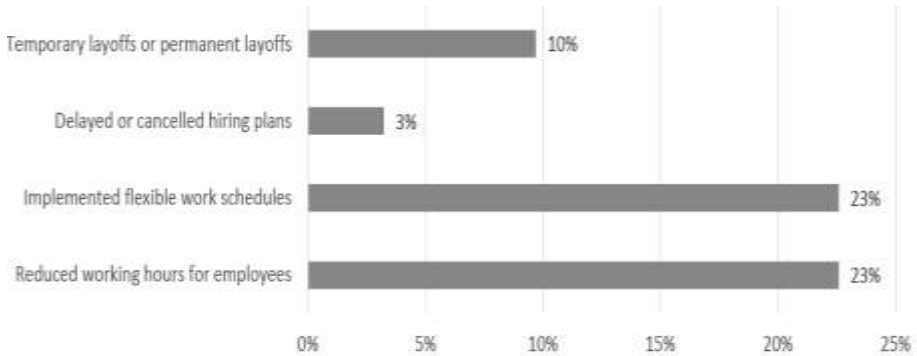


Figure 5: Measures taken regarding the workforce of SMMEs in Klerksdorp, South Africa

As increased load shedding introduces significant challenges to businesses, the surveyed SMMEs have taken various steps and initiatives related to their workforce, as shown in Figure 5. To mitigate the effects of power outages, about 23% of firms decided to shorten the hours that their staff members work. The same portion (23%) of the respondents adopted flexible work schedules for their workers, allowing them to adjust their work hours to account for the intermittent supply of electricity. Only 3% of the respondents chose to postpone or abandon their plans to hire during this time, probably in an effort to reduce any financial risks brought on by a lack of power supply. Banderker (2022) also mentioned that employees work fewer hours and take home less pay as a result of loadshedding. Furthermore, 10% of businesses implemented either temporary or permanent layoffs, suggesting a more drastic approach to controlling operating costs and preserving profitability under load shedding challenges.

In absolute terms, this implied that 15 employees were permanently laid off from their employment across all SMMEs in the sample before being interviewed. Disaggregating this number revealed that only three firms reported laying off employees, with 10 (50% of the workforce of the SMME), 4 (40% of the workforce of the SMME), and 1 (50% of the workforce of the SMME) workers each. This immediately raises the question as to what the circumstances are that allow some SMMEs to keep all their workers and others not—an aspect that forms an important part of a future research agenda. One possible factor is South Africa's strict labour laws, which are precise in the processes that must be followed to reduce employee counts through layoffs. The retention of

employees due to perceived strict labour laws may add to the financial strain experienced by businesses, as SMMEs need to keep paying their employees even with decreasing revenue and profits as a result of load shedding. Therefore, this is indeed an important area for further research.

The SMMEs were also probed in terms of their perceptions about the future outlook for their enterprises in the wake of the continued load shedding experienced by them. Overall, firms reflected a lack of optimism about future growth, with 74% of SMMEs expressing a worsened outlook regarding load shedding and business operations. Only 13% of firms said that they are still optimistic about the future and that operations will get better.

Figure 6 shows the results of the issue of adapting and adjusting business goals in response to the negative effects of load shedding.

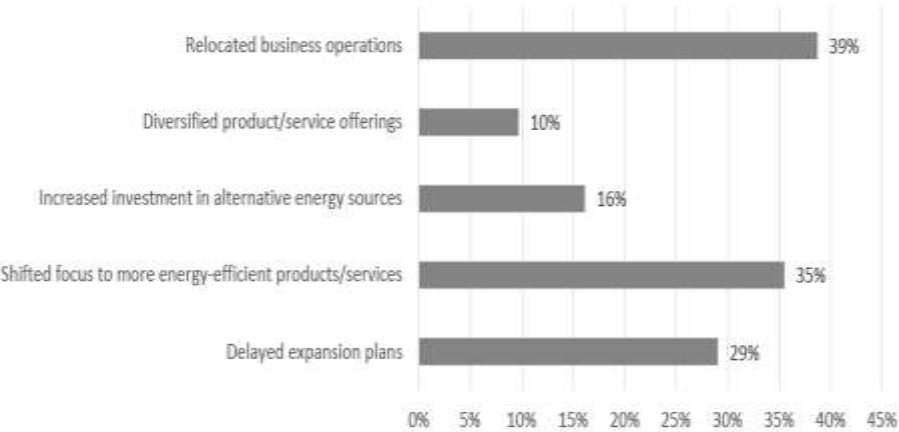


Figure 6: Adaptation to long-term business strategies

Businesses are indeed adjusting their business goals as a result of increased load shedding, with 42% having to change their goals, which include lowering profit forecasts or stopping expansion plans for their business, as indicated in Figure 6. The load-shedding crisis, however, is not making these businesses relocate, with 87% stating they are not considering relocation. The high number of businesses not thinking about relocation is probably because of the financial constraints posed by load shedding, which keep them from pursuing this option even though they know it has advantages. On the other hand, SMMEs may fully

realise that other locations also suffer from load shedding, diminishing the possible positive effects it may have. For most, relocating would be a long-term strategy, with 39% indicating this. Many firms may find that the expenses of moving and setting up new facilities, as well as other related costs, are greater than their available funds when they decide to relocate.

Try to put money aside and buy solar because in SA where we live nothing gets better just worse.

Keep your business small with as little staff as possible.

Streamline product offerings to reduce waste and plan ahead or look for funding for alternative energy.

Furthermore, as also stated in the participant quotes above, SMMEs are now expected to have to make adaptations to their long-term business strategies. This includes delaying expansion plans (29%), shifting focus to more energy-efficient products and services (35%), and increasing investment into alternative energy sources (16%), which in turn can be a very positive move in the long term, because if firms can provide their own source of power, they would not have to rely on Eskom to provide the bulk of their electricity. Diversifying product and service offerings (19%) and relocating business operations are also some of the long-term goals of the surveyed participants.

Conclusions, Limitations, and Suggestions for Further Studies

The results and findings of this study shed light on the profound impact of load shedding on SMMEs in Klerksdorp, North West. The data reveals the diverse challenges faced by businesses across various industries. The financial toll on these businesses is evident, as 71% of surveyed SMMEs reported substantial losses, mainly attributed to increased operational costs and dissatisfied customers, as well as the delayed delivery of products and rendering of services. It is, however, positive to see that there is not as large an impact on customer relationships and retention, as customers also understand the toll that load shedding takes on SMMEs.

Notably, the workforce and employment landscape require the most endurance, with 52% of SMMEs in Klerksdorp struggling to pay employees on time due to load shedding. The burden on SMMEs in this regard may increase even further with ongoing load shedding.

Mitigation measures adopted by SMMEs, such as absorbing operational costs internally and seeking financial assistance through loans, underscore their commitment to their customers. Business goals are being adjusted, with a significant portion having to alter profit forecasts and halt expansion plans. However, the overarching pessimism prevails, with 74% of Klerksdorp SMMEs expressing a worsened outlook for future load shedding and business operations.

We acknowledge the following limitations to our findings: Firstly, recall bias may undermine the survey's accuracy, as respondents may struggle to recollect and report the impacts of load shedding from periods with lesser or increased power outages. Furthermore, the study may not reflect the entire complexity of the problem because it may oversimplify the numerous ways in which loadshedding affects various types of SMMEs. Finally, because the survey is limited to Klerksdorp, its findings may not be entirely generalisable to other locations or business types in South Africa.

Tentative Recommendations and Suggestions for Future Studies

Since the study was limited to the city of Klerksdorp, it is recommended that it be expanded to the wider Kenneth Kaunda District, which consists of three municipalities, namely JB Marks, City of Matlosana, and Maquassi Hills. This will provide an improved understanding of the impact of load shedding on SMMEs in the larger district.

This research can also be expanded to other provinces and regions within South Africa, and maybe we can conduct comparison analysis in a region that is not hit as hard with loadshedding in contrast to one with more load shedding. This will allow for a larger sample population in a wider range of regions and provide more insight into which SMME sectors are impacted the most and in what regions. The ability to follow SMMEs over time to analyse the long-term impact of load shedding will enhance our understanding even further. A larger sample also holds the possibility of conducting cross-sectional and time-series analysis on the data to seek the importance of the different elements associated with loadshedding and its subsequent impact on variables such as layoffs or business success.

Additional research may also provide more clarity into possible solutions and identify sectors and regions with the highest need for support so that local and national governments can assist in alleviating the strain caused by load shedding on SMMEs countrywide. Maduku and Kaseeram (2021) suggested that the South African government should consider forming an SME bank. This suggestion may need to be revisited as a possible source of finance to allow SMMEs to combat the increasing cost and associated cash flow pressures resulting from continued and increased levels of load shedding. The results of this study remind us of the urgent need to protect employment opportunities created by SMMEs, often against the odds. South Africa owes it to these entrepreneurs, as their resilience is keeping the local economies of many towns and cities going despite the challenges posed by failing institutions.

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