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THE IMPACTS OF LOAD SHEDDING ON SELECTED FORMALLY REGISTERED B&B'S AND GUESTHOUSES IN PIETERMARITZBURG: SURVIVAL STRATEGIES

Submitted in fulfilment of the requirements of the degree of Master of Management Sciences Specialising in Hospitality and Tourism in the Faculty of Management Sciences

at the Durban University of Technology

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APPROVAL

Doctor of Technology in Business Administration (DUT); Master of Business Administration (MANCOSA); Master of Recreation and Tourism (UNIZULU); Post Graduate Diploma in Tertiary Education (UNISA); BA Hons (Geography); Bachelor of Pedagogics (UNIZULU).

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DECLARATION

I declare that this study:

The impacts of load shedding on selected formally registered B&B's and Guesthouses in Pietermaritzburg: Survival strategies

Unless specifically indicated to the contrary in the text, is my own work in both conception and execution. All the sources of information used or quoted have been duly acknowledged by means of complete references.

Zwelithini Nhlosenhle Tembe.

Date: 14/04/2022

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DEDICATION

I would like to dedicate this dissertation to my loving mom Miss Eunice Thabisile Tembe. I appreciate the love and support you giving me, you‘re the only person who never show signs of giving up on me no matter how bad it is and thank you for believing on me on everything that I am doing. You never doubted anything that I am saying to you or doing but you support and advice all of my decisions. I wouldn‘t be this far or completed this work without your love and support.

ABSTRACT

Load shedding hit the country for the first time in November 2007 - January 2008, disrupting businesses, closing mining operations and affecting B&B's and Guesthouses. Eskom applies load shedding by stopping the electricity distribution throughout particular areas for a short period of time negatively impacting both businesses and households. The utilities debt is owed to a substantial loss of critical skills, poor quality of maintenance and inadequate workmanship, resulting in break-downs. These breakdowns have given rise to a unique expression regularly used in SA, known as 'load shedding'.

The study aimed to investigate the impacts of load shedding and suggest survival strategies as used by selected formally registered B&B's and Guesthouses in Pietermaritzburg. The study employed the qualitative method to data collection and analysis because of the nature of the research objectives that the study sought to satisfy. Data were collected through secondary sources during the literature reviews as well as through interviews with owners and managers of selected B&B's and Guesthouses in the area of Pietermaritzburg. B&B's and Guesthouses may be the most vulnerable compared to larger organisations such as hotels. The reason being that B&B's and Guesthouses lack capital resources, financial support and the majority are not able to afford backup facilities to guarantee power supply.

As the study discovered that the load shedding phenomenon was not about to disappear in South Africa due to ageing infrastructure, demand exceeding supply and inefficiencies. While government and power and energy industry intervention is critical, it remains imperative for owners of B&B's and Guesthouses to invest in alternative sources of energy and implement strategies for the resilience and sustainability of their small businesses.

ACRONYMS

B&B:	Bed and Breakfast
CBD:	Central Business District
ECG:	Electricity Company of Ghana
EEC:	Eswatini Electricity Company
ESKOM:	Electricity Supply Commission
FEDHASA:	Federated Hospitality Association of South Africa
GDP:	Gross Domestic Product
HI- FI:	High Fidelity
KWh:	Kilowatt Hours
MW:	Megawatts
OECD:	Organization for Economic and Development
OECD:	Organization for Economic Cooperation and Development
PJ:	Pet joules
SATSA:	South African Tourism Services Association
SME:	Small to Medium Enterprise
UK:	United Kingdom
US:	United States of America
USAID:	United States Agency International Development
WI- FI:	Wireless Fidelity
WTTC:	World Travel and Tourism Council
ZESCO:	Zambia Electricity Supply Corporation Limited

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CHAPTER 1

INTRODUCTION AND ORIENTATION TO THE STUDY

1.1 INTRODUCTION AND BACKGROUND

This chapter gives the background, the problem statement, the guiding research questions and objectives, defines the main concepts and outlines the significance of the study. The integrated company called as Eskom, produces around 95 percent of South Africa's (SA's) electricity (Eskom 2020). By monopolising the SA market, Eskom remains the State's principal electric utility. Eskom was formerly known as "The Electricity Supply Commission" (Escom) till 1987, when its identity was amended to Eskom. The Government established Eskom in 1922 under the Electricity Act of 1922 (Botha 2019).

Eskom has been struggling to satisfy the growing demand for electrical power throughout the country (Makgopa and Mpetsheni 2022). According to Pravin Gordhan, Minister of Public Enterprises, the energy deficit is due to a significant loss of vital skills, poorly maintained infrastructure, and deficient labour, which results in disruptions (Du Toit 2019). These failures have arisen to a distinctive word often used in South Africa, called the 'load shedding' (Steenkamp, February, September, Taylor, Hollis-Turner and Bruwer 2016). Botha (2019); Mileham (2021) state that load shedding has been going on for about 15 years since 2008, disrupting businesses, closing mining operations and affecting households. Load shedding, described as a purposely constructed rotating electrical power outage, is used to ease strain on Eskom whenever consumption for electricity exceeds availability (Botha 2019; Makgopa and Mpetsheni 2022; Shahgolian and Salary 2012). It mainly happens with or without previous notice to the user. Eskom uses load shedding to disrupt energy delivery in specific locations for a brief period, which has a deleterious effect on both enterprises and people.

It is important to mention that planned, short-duration rotational power cuts are not unique to South Africa, but characteristic of developing economies (Ansu-Mensah and Kwakwa 2021). Mulenga and Phiri (2017) reported that it was experienced in Zimbabwe, as well as in Zambia. Haffejee (2014) mentioned the following countries experiencing load shedding: Nigeria 'worse off than most', Pakistan 'no stranger to power outrages' and Gaza Strip 'operating according to a rotational system.' Fin24 (9 February 2015) pointed out that the biggest sufferers were countries in the Middle East and North Africa, with an average of 23.5 power outages a month. South Africa, Benin, Ethiopia, Niger, Nigeria, Senegal, Zambia and Zimbabwe also fell below the average mark of power provision. Economists in South Africa have warned that the influence of power outages will exacerbate the closure of guesthouses and B&B's (Assan and Masibi 2015: 3). Ado and Josiah (2015: 240); Cissokho and Seck (2013: 7), indicate that guesthouses and B&B's might be highly susceptible when comparing to major organizations (Hotels). The basis for this is that guesthouses and B&B's need financial assistance and economic assistance, and many are unable to finance backup systems to ensure electricity availability (Ado and Josiah 2015: 240).

1.2 RATIONALE FOR THE STUDY

Du Toit (2019) argues that the energy deficit is due to a significant loss of vital skills, poorly maintained infrastructure and deficient labour. According to Botha (2019); Mileham (2021) load shedding had been going on for 15 years, disrupting and closing businesses and affecting households. Load shedding is an intelligent and purposeful rotation of electricity outage, following accurate prediction of the system decay, used to ease strain on Eskom whenever consumption exceeds availability (Makgopa and Mpetsheni, 2022; Shahgholian and Salary, 2012) (Figure 1). Developing countries, South Africa included, face massive socio-economic agendas with insufficient investments in power generation, which ironically is expected to fuel such development (Ansu-Mensah and Bein, 2019; Ansu-Mensah and Kwakwa, 2021).

Eskom (2020) views load shedding as a controlled proactive option aimed at avoiding electricity power system blackout. Brown (2020) points out that Eskom's power reliability is at its all-time lowest in 97 years and may get even worse as the monopolistic Eskom implements Stage 6 or 8 load shedding. Staff Writer (2020) claims that load shedding has reduced the country's GDP growth over the period of three years, in 2019 the GDP was allegedly reduced by 0.3%, in 2020 it is expected to be reduced by another 0.8% and in 2021 by a further 1.3%. Duminy (2019) points out that as a perishable good, tourism and hospitality establishments are not able to store their services for consumption at a later stage once the guests leave. This study, titled: The impacts of load shedding on selected formally registered B&B's and Guesthouses in Pietermaritzburg: survival strategies, investigated qualitative impacts of load shedding of small tourism accommodation establishments located in the demarcated area.

1.3 RESEARCH PROBLEM STATEMENT

A research problem is a specific issue, area of concern, condition to be improved, difficulty to be eliminated, a troubling question or gap in knowledge that a research aims to address (McCombes 2019); Sacred Heart University, 2020). The interruption of electricity cost South Africa between R60 billion and R120 billion in 2019 alone (Pombo-van Zyl, 2020) at about R1 billion per stage per day (Business Tech 2019), with the cumulative cost of an estimated 530 hours in 2019 amounting to about R59 billion to R118 billion (Jika and Skiti 2020; Brown 2020). Ironically, in South Africa Eskom regards acceleration of economic growth as a trigger to power cuts (Njini 2019). The World Bank cuts South African GDP growth forecasts to below 1% in 2020 due to electricity supply concerns (Coetzee 2020). Mileham (2021) shared that 2021 marked 15 years of load shedding in South Africa. Maleham attributed the crisis to government corruption, inefficiency, broken promises incompetence and mismanagement. On the 15th November 2021 the Business Leadership South Africa (BLSA) expressed extreme concern about the damage that load shedding was doing in the economy (Mthimkhulu 2021). On the 1st March 2022 Price Waterhouse Coppers estimated that load shedding in South Africa had increased by 38% (an equivalent of 2.400

gigawatt hours) in 2021. PwC further translated this figure to 1.136 hours of power cuts, equivalent to three full hours per calendar day, which could have led to 3.1 reduction in GDP growth while costing the country up to 400 000 potential jobs. As recently as 9 March 2022, the Mayor of Cape Town listed load shedding as one of the challenges hampering the recovery of the tourism industry from debilitating impacts of the Covid-19 Pandemic (Githahu 2022). Load shedding was further moved to stage 4 on the 9th March 2022 due to tripping of four power stations (Kendal, Duvha, Camden and Kusile) resulting in the total loss of 15.439MW (ESKOM Media Desk 2022). According Mokwena (2021) the survival of many small businesses, including B&B's and Guesthouses hanged in the balance. It is in this context that this study on the impacts of load shedding on B&B's and Guesthouses as small tourism businesses was conducted.

1.4 AIM OF THE STUDY

The purpose of this research was to examine at the effects of load shedding on selected formally registered B&B's and Guesthouses in area of Pietermaritzburg. The study further aimed to determine the strategies used by the owners to reduce the impacts of load shedding. This study was driven by the following research objectives:

1.4.1 Research Objectives

Research objectives provide a clear direction and scope for the study. They are a translation of the aim into operational statements and show how the overall research aim will be realised (Abdulai and Owushu-Ansah 2014). This study aimed to achieve the following objectives:

- To determine the extent of load shedding worldwide through literature review.
- To determine the qualitative impacts of load shedding on selected formally registered B&B's and Guesthouses in the area of Pietermaritzburg.
- To establish the strategies used by the owners of selected formally registered B&B's and Guesthouses in the area of Pietermaritzburg to reduce the negative impacts of load shedding.

- To make recommendations on strategies to counter the negative impacts of load shedding.

1.4.2 Research Questions

The research question specifies what intrigues you and focuses on what you will study. Research question direct you to appropriate literary resources. Your question tells you what research literature to read and how to narrow down your bibliographic search (Alvesson and Sandberg 2011). The following research questions were aligned to the research objectives.

- What is the extent of load shedding worldwide?
- What are the quantitative and qualitative impacts of load shedding on selected B&B's and Guesthouses in the area of Pietermaritzburg?
- What have the owners developed to mitigate the impacts?
- What are the recommended strategies to counter the negative impacts of load shedding?

1.5 CONCEPTUAL FRAMEWORK

Rigoniel (2015) argues that the conceptual framework is a map or rudder that guides and steers the whole research activity by indicating how different variables, crucial for answering research questions, connect. According to Adom, Hussein and Agyem (2018) a conceptual framework narrows ideas which are the main variables in a study. It consists of concepts interconnected to explain the relationships between them and how the researcher plans to use them to address the research problem.

DEFINITION OF CONCEPTS

It is important for the main concepts to be defined because they give the reader an understanding of the core concepts and the main concerns of a study (Akintoye 2015). The following concepts were defined because they form part of the conceptual framework for the study.

1.5.1 Impact

As a noun, the word impact means marked effect of influence of one object, event or condition on another (Longman Dictionary 2020). Impact is defined by Hearn (2016) as any short or long-term effect of one variable on another, whether intended or unintended, positive or negative, direct or indirect. Hearn further points out that impact refers to measured difference of a predefined indicator such as reliable or non-reliable availability of electricity in the case of this study.

1.5.2 Load shedding

Load shedding defined as intentionally engineered rotational electrical power shutdown is used to ease pressure on Eskom whenever the consumption of power exceeds the provision (Botha 2019). Eskom (2020) views load shedding as a controlled proactive option aimed at avoiding electricity power system blackout, which, Eskom further argues would take hours or even days to restart with the help of a neighbouring country's power system. Referred to as power outrages or rolling blackouts in other countries (Rouse 2019), load shedding pertains to the temporary halting of energy delivery in specific locations. Load shedding is a way to distribute demand for electrical power across multiple power sources. As a measure of last resort, load shedding is used to relieve stress on a primary energy source when demand for electricity is greater than the primary power source can supply in effort to stop the failure of the power distribution nationwide. If many power station components trip prematurely, many may have to skip those steps and go straight to load shedding to prevent the system from becoming unstable (Assan and Masibi 2015)

1.5.3 Formally registered B&B's and Guesthouses

According to Kokt (2015) a registered bed-and-breakfast is a small lodging establishment that offers overnight accommodation and breakfast that are registered with their local tourism authority. Bed and breakfasts are often private family homes and typically have between four and eleven rooms, with six being the average (Rogerson 2014). Registered Guesthouses are a type of

inexpensive hotel-like lodging that is registered with their local tourism authority (Hoogendoorn, Grant and Fitche 2015). Madichie and Hinson (2013) postulate that a guesthouse is a private home which has been converted for the exclusive use of lodging. The owner usually lives in an entirely separate area within the property and the guesthouse may serve as a form of lodging business.

1.5.4 Survival strategies

Ehlers and Lazenby (2019) posit that strategic planning is about deciding what needs to be done using organisational strengths to mitigate the impacts of the threats and take advantage of opportunities. They further state that strategy is about developing a 'new mind-set' to create and maintain a competitive edge in a volatile and uncertain business environment.

Margolis and Stoltz (2010) talk about survival strategies as building high levels of resilience in themselves and their teams by taking charge of how they think about adversity such as load shedding. Resilience relates to response-oriented thinking and quickly operationalizing plans. According to the Biz Community (17 October 2019) every business owner and manager needs to factor unreliable power supply into the business strategic plan. In the case of this study, Eskom's load shedding presents threats and opportunities for B&B's and Guesthouses in the demarcated area of study.

1.6 SYNOPSIS OF THE RESEARCH METHODOLOGY

The study adopted the constructivist paradigm and employed the qualitative methodology to data collection and analysis because of the nature of the research objectives that the study sought to satisfy. Qualitative data were collected using interviews with owners and managers of selected B&B's and Guesthouses in the area of Pietermaritzburg. The research paradigm was non-positivist, as the study aimed to develop an understanding of the phenomenon of load shedding as experienced by others, thus allowing for subjective interpretation of the problem. The cross-sectional case study design allowed the

researcher to capture holistic and meaningful contextual characteristics of the real phenomenon within an intrinsically bounded system of Pietermaritzburg (McMillan and Schumacher 2012) and provided a setting where quantitative approaches could be used to data collection though semi-structured interviews.

The population for this study was made of all 39 formally registered B&B's and Guest houses in Pietermaritzburg excluding those that fall under Hilton and other places outside of the city and those registered as hotels, lodges and inns. In total there were 59 accommodation establishments including hotels, inns and lodges (sa-venuespietermaritzburg 2020). The sampling method was to purposive select only Guesthouses and B&B's and exclude hotels, lodges and inns. Data analysis aligned with data collection. Qualitative techniques such as thematic analysis, use of cause-and-effect diagrams, word clouds and in some cases capturing of verbatim responses were used to make thinking visible to the reader (Johnson and Christensen 2012; Trafford and Leshem 2008). To conclude the study, findings were presented in alignment with the research objectives.

1.7 STUDY AREA

The setting of this study is Pietermaritzburg, which is the legislative capital of KwaZulu-Natal. The research setting refers to the place where the data are collected (Denscombe 2014). This area was chosen for study because of its location on the N3 from Gauteng to Durban (Fig. 1-1), making the city very accessible to tourists. The city was also selected because of its position as a tourism hub due to a number of hallmark events (Dusi Canoe Marathon, Royal Show and Comrades Marathon, Art in the Park, Pietermaritzburg Mountain Bike Festival, the Midmar Mile on the outskirts of the city, etc.) taking place in the city annually. These events draw to the city hundreds of thousands of visitors annually as event participants and spectators. As a result, the city has to provide accommodation to thousands of visitors that descend to it annually. There aren't many hotels in the city, but there are many B&B's and Guesthouses to cater for the demands of a growing destination. This study was conducted amongst the B&B's and Guesthouses located at Pietermaritzburg, as indicated in Figure 1-1.

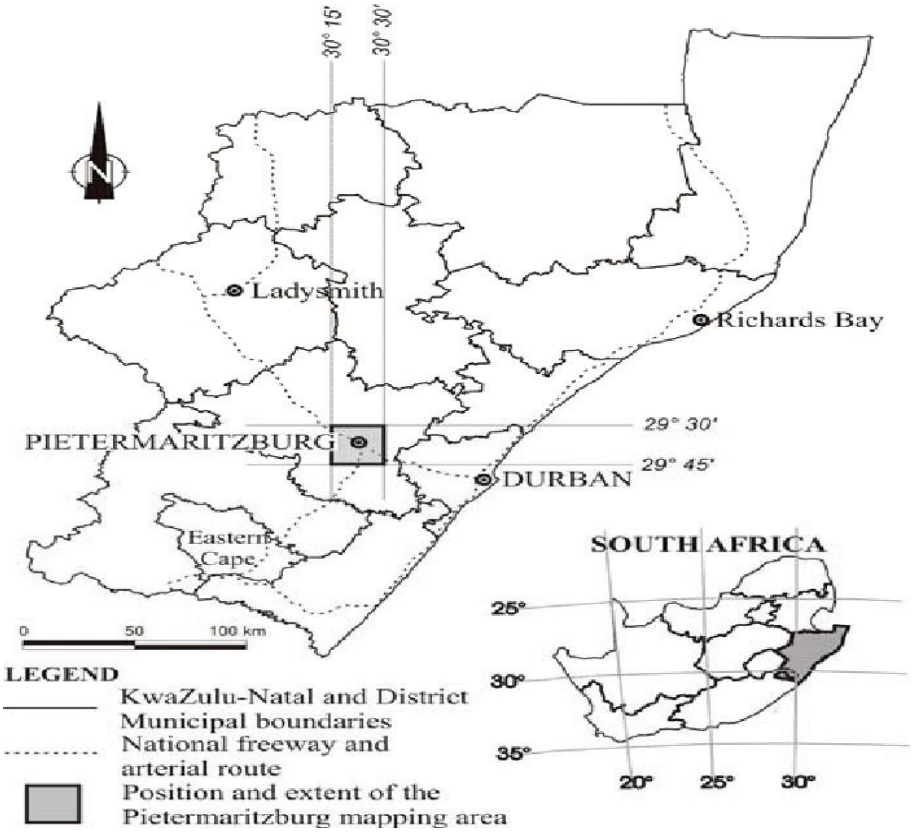


Figure1-1: Location of Pietermaritzburg within the province of KwaZulu Natal
Source: Richards, et al (2014:2).

Figure 1-1 shows that Pietermaritzburg lies at the heart of the province with major transport networks making it easily accessible from various provinces in the country. Pietermaritzburg central has a high concentration of accommodation establishments, especially B&B's and Guesthouses.

1.8 THE STRUCTURE OF THE DISSERTATION

This study is structured in an academically accepted way, starting with the orientation to the study, followed by the literature review and theoretical framework, research methodology, data presentation, analysis and interpretation and ends with conclusion and recommendations as suggested by Brynard, Hanekom and Brynard (2022: 101). This dissertation consists of five chapters structured as follows:

CHAPTER 1: INTRODUCTION AND ORIENTATION TO THE STUDY

This chapter will cover the background to the study, rationale for the study, research problem, aim of the study, research objectives, setting of the study and a summary of research methodology.

CHAPTER 2: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

To show awareness of currently existing studies, the literature review and theoretical framework section of a dissertation is of vital importance because it enables the researcher to explain how things connect and also locate contradictions and gaps in the main concepts of the phenomenon under investigation.

CHAPTER 3: RESEARCH METHODOLOGY

This chapter informs the reader about the methodological choices made by the researcher in order to satisfy the objectives of the study.

CHAPTER 4: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

Qualitative data were presented, analysed and interpreted in this chapter. This chapter lays the foundation for all the recommendations and conclusion in the final chapter.

CHAPTER 5: FINDINGS, RECOMMENDATIONS AND CONCLUSION

This is the final chapter of the research report. Conclusions were drawn from the discussion of empirical findings as well as literature as reviewed in chapter 2. After comparing literature and findings in chapter four, gaps were identified, and recommendations were advanced. This chapter was also used to identify areas for future research.

1.9 CONCLUSION

This chapter is very important because it creates the tone and sets the scene for action. It contextualised the research problem by providing the background to the phenomenon of load shedding and its rationale as given by Eskom (2013), delineates the study by providing research objectives, outlines the conceptual framework, provides the setting and rationale for its selection and finally provides the structure of the report. These areas covered in this chapter determined the

literature to be reviewed, theoretical framework to use as well as methodological choices to make for data collection and analysis. Chapter 2 presents the literature review which addresses the topic, problem and research objectives as well as derived theoretical framework.

CHAPTER 2

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 INTRODUCTION

According to Library Guides (2021) literature review is a systematic and comprehensive analysis of scholarly articles and other sources relevant to a specific topic providing a base of knowledge on a topic used to (Mason 2014) justify the current study by exposing (Machi and McEvoy, 2016) inconsistencies and gaps in available literature, while also avoiding duplications. Theoretical framework locates major formative works in the field, identify relevant theories, show relationships between previous studies and provide context for the current study. Mason (2014); Machi and McEvoy (2016); Brynard et al. (2022) concur by stating that literature review helps accumulate knowledge that reside within the corpus, while also indicating a clear demarcation of the study.

Idahosa, Marwa and Akotey (2017) point out that energy production, distribution and consumption has attracted a lot of attention in the global literature because of its significance in modern economies. They highlight the limits of production amid growing demand, especially in developing countries, with crippling effects on their economies and sustainable development. Power generation and consumption is a continuous process of maintaining the balance between demand and supply. A mismatch between demand and supply such risks as over-investment, over-generation, under-generation and the collapse of the power system. Therefore, the reduction in demand and supply mismatch is critical to ensure the safety and reliability of power system operation (Gull, Mehmood, Rauf, Khalid and Arshad 2022). In agreement, Umar and Kunda-Wamuwi (2019) posit that secure and uninterrupted supply of energy is essential for any economy to function, thus, as the grid becomes even more tightly integrated with other important socioeconomic activities, the requirements for system-wide planning grows (National Academies of Sciences, Engineering and Medicine 2017). Samawi, Mdanat and Arabiyat

(2017: 193) agree that limited energy supply 'can negatively affect the development of a country and limit the potential growth of its economy'. The power system is the foundation for all modern societies, and its safe and efficient operation is the prerequisite for social and economic wellbeing (Bie, Lin, Li and Li 2017; Blimpo and Cosgrove-Davies 2019). Blimpo and Cosgrove-Davies (2019) elaborate that while access to reliable electricity is the backbone of any modern economy, it is even so with the digital revolution. Critical as grid power is, it is still characterised by unreliability and inefficiency in many developing countries, the whole of Africa included, which has adverse impacts on their socioeconomic performance (Fakih, Ghazalian and Ghazzawi 2020). In a study conducted of 140 global power outrages since 1965 to 2012 Fakih, Ghazalian and Ghazzawi 2020 found that the main causes were equipment failure (48%), natural disasters (31%), malfunctions (10%), vandalism (6%), supply shortages (4%) and cyberattacks (1%). The situation may have changed since the study by Bie et al. (2017) with increasing consumption and demand for energy proving to be one of the major problems in the world (Khalil and Zaidi, 2014). The reliability of energy supply is a crucial factor in sustainable economic development, growth, (International Energy Agency 2012) stability (Halldorsson and svanberg, 2015) Social welfare. Halldórsson and Svanberg (2015) further state that inadequate energy supply can lead to rapid increases in production costs as demand exceeds supply. Energy security is the effective management of primary energy supply from domestic and external sources, the reliability of energy infrastructure, and the ability of energy providers to meet current and future demand (The World Energy Council 2013). Urciuoli et al, 2014 argue that ensuring adequate and sustainable energy supply to the economy is critical to achieving economic growth and improving the quality of life for residents (Halldórsson and Svanberg 2015).

Azasoo and Boateng (2016) point out that power outrages are not only limited to South Africa nor Sub-Saharan countries, but experienced in other countries around the world such as Pakistan, Nepal, India, Bangladesh, Belgium (Vermeulen 2014), New Zealand (Atendido and Zamora 2017) and China (Ou, Huang and Yao 2016; Tsai 2016) even though the causes may differ. At a global scale, developed countries have generally not been subjected to a high degree of load shedding due to substantive investment in electricity generation capacity.

As far back as 2002, Becken and Simmons observed that the major threat to the tourism industry is escalating demand for energy and resource depletion. In agreement Khan and Hou (2020) observe that economic and tourism growth, while integral parts of modern societies, have often been at the expense of sustainability. The World Bank forecast that South African economy would grow by a mere 0.9% in 2020 due to load shedding, averaging 1.4% between 2021 and 2022 if structural reforms are ramped up (Bloomberg, 2020). Tourism growth increases revenues and creates employment, but also leads to increased energy consumption. As the United Nations World Tourism Organization (UNWTO) predicts that tourist arrivals will grow from 1 billion in 2012 to more than 1.8 billion in 2030 (Işik, Dogen and Ongan 2017), demand for energy is set to grow (Umar and Kunda-Wamuwi 2019) even for countries that cannot cope currently (2021), including South Africa. Frantál and Urbánková (2017) point out that energy demand is closely associated with tourism activities, along with associated functions like accommodations, catering, transportations and communications. In 2015, the Federated Hospitality Association of South Africa (FEDHASA) conducted a survey on the impact of load shedding in small accommodation and restaurant sectors in Cape Town and found that respondents had serious concerns about the capacity of their businesses to survive as load shedding was adding strain to an industry already impacted by seasonal fluctuations. Steenkamp, February, September, Taylor, Hollis-Turner and Bruwer (2016) posit that blackouts have far more significant impacts on smaller hospitality establishments (which includes B&B's and Guesthouses), since most of these lack additional power generation systems, which sabotages efforts to stimulate growth.

The following sections explore available literature on the impact of load shedding or power cuts on the tourism industry in general and accommodation sector in particular both globally and nationally. The literature review sections are aligned with the objectives of the study as stated in chapter 1: the extent of load shedding worldwide, quantitative and qualitative impacts of load shedding and strategies used by the owners of accommodation establishments to reduce the negative impacts of load shedding.

2.2 THE EXTENT OF LOAD SHEDDING WORLDWIDE

As stated in chapter 1, the problem of power demand exceeding supply is not limited to developing economies and the African continent. Umar and Kunda-Wamuwi (2019) pointed out that the recent large investments in electricity generation capacities in North America and the European Union have been ramped by impending electricity crises. Between 2000 and 2001, the failure of electricity supply to meet demand in California lead to rolling blackouts in some areas to prevent a failure of the entire system and possible blackout. Kahn and Bermel (2020) pointed out that more power outages were expected in California due to ballooning demand, inadequate transmission, an overreliance on renewable energy and natural gas plant challenges during hot weather. Similarly, in August 2003 the North-eastern US and Canada experienced load shedding which led to high criticism of the US power system that was compared to a developing economy Umar and Kunda-Wamuwi (2019) further point out that electricity production and distribution in the developed countries were undergoing significant restructuring to keep up with increasing demand. The World Bank (2019) indexed 132 countries experiencing regular power outrages and the top 10 were Pakistan, Bangladesh, Lebanon, Papua New Guinea, Iraq, Yemen, Nigeria Central African Republic, Benin and Niger with South Africa ranking number 94. According to Kessides (2013); Khalil and Zaidi (2014) in Pakistan energy demand exceeded demand by far. Urban regions were experiencing load shedding of between 10–12/14 hours, while in rural areas it was 16–18/20 hours. Similarly, Chianese, Rivola, Shrestha and Zahnd (2013) argue that Nepal is not able to meet electricity demand of Kathmandu, its capital city as demand keeps mounting. In 2001, the government introduced load shedding of up to 20 hours per day to deal with the shortages. Ou, Huang and Yao (2016); Tsai (2011) conducted studies on power shortages in China. They argue that despite rapid expansion of electricity infrastructure, electricity shortage remained as a very common problem since the 1960s. In 1996, China’s electricity shortage shortfall exceeded 20%. High-speed economic growth in the country resulted in the quick increase in demand and imbalance between supply and demand and the country experience large-scale power hard power shortages.

While Oluwasuji, Malik, Zhang and Ramchurn (2019) point out that energy is the key driver for development and growth especially in developing economies, Boakye, Twenefour and McArthur-Floyd (2016) posit that most African countries were burdened with overloaded infrastructure, (Umar and Kunda-Wamuwi 2019) substantial capacity shortfalls, which are mirrored in unprecedented load shedding, which might take decades to address as power generation capacities may be unlikely to keep up with the rising demand for power in growing economies. These occurrences are common and generate large costs to the economy and public welfare such as jeopardising the continued operation of home health care equipment (Ryan et al. 2015) as well as continuity of important public functions and economic activity such as data centres (Vertiv 2016). In support, Nwokolo (2020) draws a comparative analysis of energy supply between the United States' 13,000kWh per capita for an estimated population of 331, 002, 651 (Worldometer 2021), Europe's 6.500kWh per capita for 448 million (Europa, 2020) and 180kWh per capita for an estimated 1, 106, 958 population of the Sub-Saharan Africa.

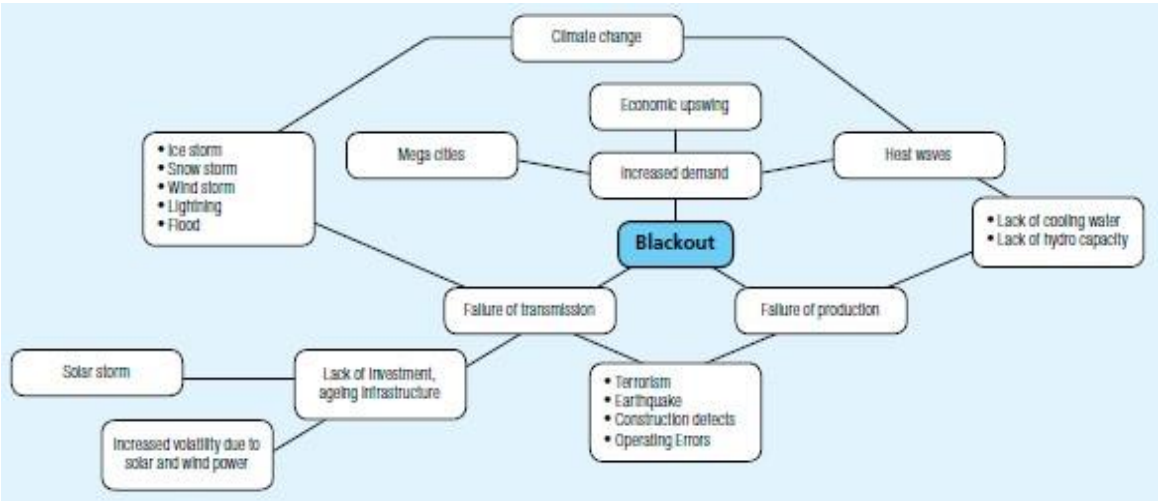


Figure 2-1: Possible causes of blackouts
Source: CRO Forum (2011: 9)

Nwokolo argues that such energy constraints are a major hindrance to growth in Africa. Boakye et al. (2016) argue that Ghana has for several years been experiencing massive load shedding nicknamed *dumsor* (which means on and off), regarded as spiralling out of control. Khalil and Zaidi (2014) attribute the

problem to lack of competition for the Electricity Company of Ghana (ECG), which enjoyed monopoly over power supply. Fritsch and Poudineh (2016) state that electricity crisis in Ghana amounted to monumental negative effects on businesses thus forming a serious barrier to further economic growth and development. In Zambia the increase in economic activities over the past several years has led to an increase in demand for energy and has put stress on the hydroelectric power generating water resource (Engineering Institution of Zambia 2015).

In Figure 2-1, the CRO Forum (2011) explains that the preconditions for power failure are high grid utilisation or high power demand, high power plant utilisation (due to increased demand, economic upswing, development of megacities) and ageing infrastructure. These preconditions set the stage for the ease of failure that may be cause by weather conditions, operating errors, construction projects, etc. Blimpo and Cosgrove-Davies (2019) point out that the proportion of firms experiencing outages is higher in the sub-Saharan Africa than in any other region worldwide. Figure 2-2 illustrates the proportion of firms experiencing power outrages globally. Clearly, the sub-Saharan African region firms experienced more power outrages than any other, which is crippling for developing economies.

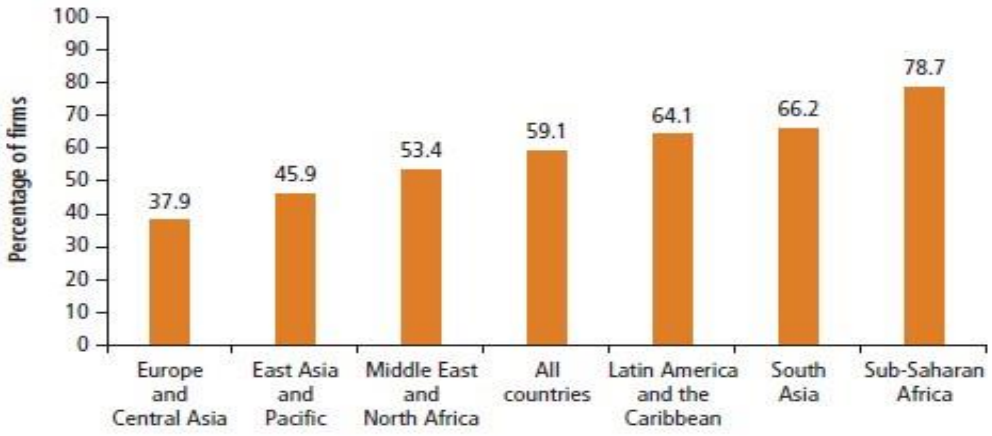


Figure 2-2: Percentage of firms experiencing electricity outrages
Source: Blimpo and Cosgrove-Davies (2019:19)

Moore (2019) postulates that the hospitality and tourism industry was likely to be the most hit by load shedding. The industry's contribution to the GDP fell from US$ 2.5 million in 2012 to US$ 2.1 billion in 2014 due to load shedding. Moore (2019) also shared that in Germany load shedding cost restaurants and bars losses totalling up to US$ 139 million in 2006 alone. The Zambian Electricity Supply Corporation instituted nationwide load shedding schedules that last up to 12 hours daily. This development has potentially far reaching social and economic effects on business operations, B&B's and Guesthouses included (Umar and Kunda-Wamuwi 2019), while in Zimbabwe load shedding lasts up to 18 hours (Staff Writer 2019).

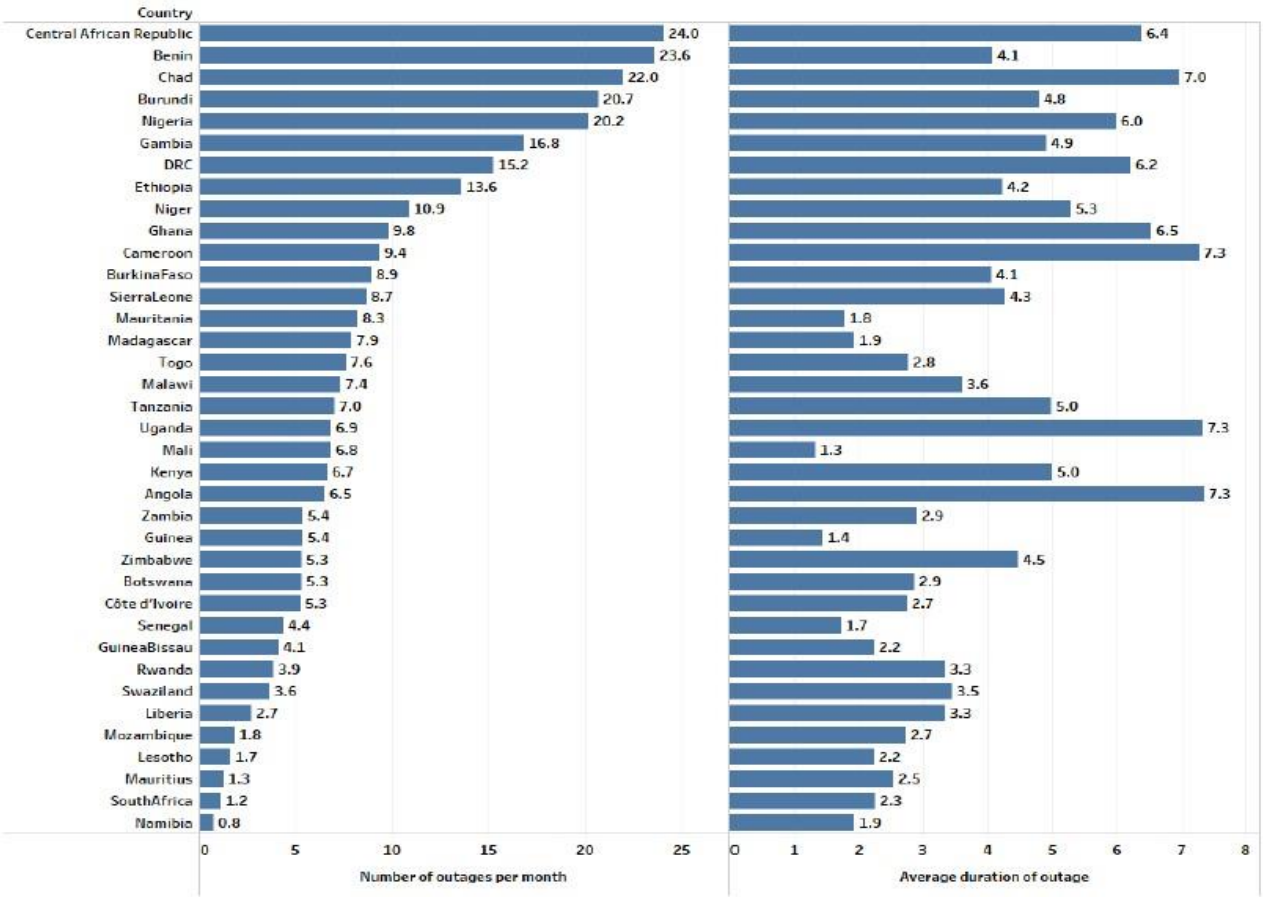


Figure 2-3: The situation of load shedding in Africa
Source: Ramachandran, Shah and Moss (2018:3)

Figure 2-3 illustrates that while the load shedding situation is worse in the sub-Saharan Africa (Fig.2-2), South Africa had it much better at 1.2 outrages per month 2.3 hours.

2.3 IMPACTS OF LOAD SHEDDING

Lock (2020) incorporates lodging, which this study focuses on, under tourism, which is an industry that accounted for approximately 2.9 trillion U.S. dollars in 2019. The industry supports about 319 million direct and indirect jobs globally (WTTC 2021) and 184,299 hotels comprising 16,966,280 million rooms around the world (Smith Travel Research, 2018) excluding Guesthouses and B&B's. This global economic growth industry was estimated to use 14 000 pet joules (PJ) in 2000 (Gössling 2002) and 17 500 PJ in 2005 (Pablo-Romero, Sánchez-Braza and Sánchez-Rivas 2017; Rutty, Gössling, Scott and Hall 2015).

According to the United States Agency International Development (USAID) (2005) a tourism facility such as a B&B's and Guesthouses energy system consists of devices that require electricity or heat, on-site power and heat generation equipment and people who use the appliances and operate the power equipment. Such facilities typically use energy for lighting, communications, heating and cooling, water pumping and treatment, operation of office equipment, food preparation, guest entertainment, laundry services and cleaning. This study focuses on the qualitative impacts of load shedding on tourism- related small accommodation establishments (B&B's and Guesthouses) in Pietermaritzburg. In the subsections that follow the study reviews literature on the quantitative and qualitative impacts of load shedding on business in general and tourism accommodation establishments in particular.

2.3.1 Quantitative impacts of rolling load shedding worldwide

As the number of consumers of power grows, when a blackout or planned power cut occurs economic losses are incalculable. In a study conducted in China, Shuai, Chengzhi, Shiwen, Hao, Jufang and Hui (2018) a loss of about 8000MW (90.1% of the total load of the Northeast power grid) translated to an economic

loss of $60 million. In another study conducted on economic impacts of power shortages in China, Ou, Huang and Yao (2016) found that in 2004 electricity shortage nationwide reached 31 million kilowatts. They argue that GDP loss accelerate as the proportion of power shortage increases. When the proportion of power shortage was 15%, GDP decreased by a massive 6.39%. The effects of electricity shortage on GDP are the result of both the output reduction of the electricity sector itself and the output reduction of other sectors of the economy. In a study conducted in Finland on the economic impacts of power outages and evaluation of customer interruption costs, Küfeoğlu (2015) found that the amounts grew from less than €million in 2005 to just above €18 million in 2011. Schmidthaler and Reichl (2016) conducted a study on the socio-economic impacts of power outages in 266 European regions across nine economic sectors. They discovered that power cut just for one day in Italy (28 September 2003) cost the economy more than €1.5 billion (about 0.1% its annual GDP). In a study measuring the economic cost of electricity shortage in Pakistan, Muhammad (2015) shared that the industrial sector of the economy lost over $3.8 billion in 2009 (about 2.5% the GDP). He further states that half a million jobs and $1.3 billion worth of exports were lost.

In a study conducted in New Zealand, Becken, Frampton, Simmons (2001) found that the accommodation sector especially hotels were the largest (net and per capita) energy consumers making up 67% of the total 1.74 pet joules consumed in 1999 in the accommodation sector, while smaller accommodation facilities such as B&B's and Guesthouses combined consumed 33% (.86 PJ). In Pakistan the economy loss to economy suffered a loss exceeding US$3.8 billion in 2009 (about 2.5 percent of its GDP). Other estimates show that load shedding has cost the country up to 4% of GDP over the past few years. The total accommodation output loss of 12 to 37 percent was due to load shedding (Shahbaz 2015). In 2012 the World Bank conducted a study on the constraints experienced by firms from a number of African countries and unsupplied electricity ranked highest in five of 10 sampled countries (Nigeria – 65%, Gambia – 55%, Ghana – 49%, Senegal – 41% and Mali – 39%) (Oseni and Pollitt 2013: 3).

Moore (2019) elaborates further on load shedding in Ghana (*dumsor)* situation in a study conducted on 73 hotels in Accra. Moore (2019) states that in August 2012 90-300 MW had to be shed daily resulting in 12 hours blackout alternating with 24 hours with power. By 2015 the situation escalated to shedding 400-600 MW daily reversing the hours of darkness with powered hours. The hospitality industry that employed over 47,000 Ghanaians (almost 9% of the entire working Ghanaian population) was severely strained. The hospitality industry has faced considerable adversity due to unreliable electrical power (Boakye, Twenefour and McArthur-Floyd 2016). Ghana has been experiencing power outages for the last three years, making them the longest the country has experienced. The hotel industry has become a significant segment of the general hospitality industry and is undergoing expeditious expansions. The power-dependent growth sector, tourism faced unprecedented challenges resulting in this sector's contribution to GDP dropping from US$2.5 billion in 2012 to US$2.1 billion in 2014 (Dogbevi 2015; Moore 2019). Sichone, Mulenga, Phiri, Kapena and Fandamu (2016) noted that in some B&B's and Guesthouses in Zambia power shortages resulted in some 5 000 workers being laid off due to output reduction. As B&B's and Guesthouses opted for alternative sources of power due to unreliability of supply from ZESCO, costs went up, which depressed the economy form the initially forecast 7% growth to 4.6%.

Eswatini has also been experiencing unreliability of power supply manifesting in power cuts of about (Fig. 3-3) 3.6 frequency per month lasting for 3.5 hours on average (Ramachandran et al. 2018:3) due increasing energy demand for the country (World Bank 2015; Government of Eswatini 2014). Unexpected power outages have also continued to occur due to issues of technical inefficiencies in power delivery mechanisms by the Eswatini Electricity Company (EEC) (Magongo and Sacolo 2018).

2.3.2 Qualitative impacts of load shedding worldwide

Wood (2019) states that the differences between quantitative (objective) and qualitative (subjective) lie in the approaches to the process. Quantitative impacts of power cuts (as already seen) focus on verifiable data such as the number of

visitors lost, amounts of load shed, the amounts in monetary terms lost, the number of jobs lost and percentages of GDP lost. Over and above quantitative losses, rolling blackouts or load shedding as it is called in South Africa leads to subjective costs. These are impacts that are not easy to express in numerical terms. As seen in the previous sections, rolling blackouts or load shedding is not limited to South Africa, but it is experienced in other parts of the world as well.

Severe deficiency in electricity capacity has precipitated frequent load shedding, leading to low business confidence (Khobai, Mugano, Roux and Le 2017). According to Kwortnik (2006) in north-eastern United States and south-eastern Canada following the largest power failure in North American history, some B&B's and Guesthouses were without electricity for as long as two days. At many B&B's and Guesthouses emergency power also failed when batteries died. Key operating systems shut down including air conditioning, guest room lights, computer networks, cooking and refrigeration systems and elevators. Some B&B's and Guesthouses lost the use of their food-and-beverage equipment set up barbeques and cold food buffets, and even gave away food rather than allow it to spoil (Kwortnik 2006). The Royal Academy of Engineering (2014) points out that as the UK is becoming rapidly more dependent on electricity, and networks, processes and value chains have become increasingly complex and interdependent. Consequently the social impacts of electricity shortfalls will even be far reaching. Losses incurred may be direct damages (loss of value caused by direct loss of assets such as products or food) or indirect damages (loss of opportunity caused by loss of time or productivity), which may both be hard to quantify and express in monetary terms. In a study conducted in the UK the Royal Electricity Academy of Engineering (2014) found that electricity shortfalls lead to rising prices, which could increase fuel poverty. Moreover, several respondents suggested that there is evidence that outages lead to considerable knock-on effects between interconnected sectors, especially as economies are now so interconnected. Examples could include riots due to loss of confidence in local governments as consumers change into citizens, impact on power-reliant transport system, cash in circulation running out because of a lack of power for ATMs, or emergency back-up generators running out of diesel and others.

Outages push energy security right to the top of the political agenda, and can put considerable strain on government policy and on political legitimacy.

Panzer (2010) states that industrial sector of Pakistan has also suffered a lot due to intensive load shedding. Raza et al. (2019) claims power outages have an influence on businesses' total expenditure, and the quality or operations might suffer as a result of decay of goods or malfunctioning devices (Raza, Wasim and Sarwar 2020). In the same country a rapid surge in demand, power theft, seasonal reductions in the availability of hydropower and transmission losses due to archaic infrastructure have deteriorated the situation. Raza et al. 2015) sought to identify impact of load shedding on socio economic life of people of Sargodha city, wastage of time was also found by them a major issue which hinder people to complete their work in required time period.

Moore (2019) states that in Ghana they can experience 12 hours of load shedding at a time. Impact of such crises include withdrawal of investments, destruction of equipment and appliances, death due to criminality, spoilage of perishable goods, decreased productivity, increased operational cost, increased complaints, and overall decreased customer satisfaction. Moore (2019) furthermore indicates that the load shedding also affected the very fabric of society. It caused theft and robbery to increase, which resulted in people being unwilling to leave their homes at night. In one reported instance, a couple lost their lives due to smoke inhalation, because they feared losing their generator to thieves (Moore 2019). Also, events hosted at B&B's and Guesthouses venues like weddings, and parties which are popular pastimes of most Ghanaians became more costly and brief because organisers had to rely on the use of generators (Moore 2019). The accommodation subsector is implicitly posited to bear the brunt of such a crisis mainly because B&B's and Guesthouses are among the foremost electricity consumers among tertiary buildings (Moore 2019). More so, by nature, it is not conducive for them to adopt the more laid-back approach for mitigating because of load shedding, including temporarily shutting down compromising their product offering or passing on increased operational cost to their customers. Such an

action would only lead to a disproportionate decline in their patronage (Moore 2019).

In Zambia load shedding resulted in protest actions, drop in the level of productivity and a fundamental disturbance of the normal rhythm of the production cycle across all sectors of the economy including internet services, hospitality and tourism and others (Phiri 2017). Phiri, (2017) further points out that other businesses even have to operate at night, while others cannot because there is no demand for their service at such times. In another study conducted in Zambia, Umar and Kunda-Wamuwi (2019) argue no occasions when load shedding is effected at night, the residential areas are cloaked in darkness. Some residents (almost 20%) noted that thieves take advantage of the darkness to break into homes and B&B's and Guesthouses, crime soars and fewer tourists visit thus impacting negatively on the accommodation sector.

Sichone et al. (2017); Umar and Kunda-Wamuwi (2019) also reported on interruption of activities, damage to electrical appliances and food spoilage in B&B's and Guesthouses that could not afford generators, with some consequently having to shut down their operations. Mhaka, Runganga, Nyagweta, Kaseke and Mishi (2020) point out that the situation is worse in Zimbabwe where load shedding exacerbates existing extreme poverty levels. Load shedding has led to ailing infrastructure, hyperinflation, high unemployment levels and huge gaps between supply and demand. Scott, Darko, Lemma and Rud (2014) posit that electricity insecurity does not affect the cost-competitiveness of SMEs a group to which B&B's and Guesthouses belong, partly because electricity costs are usually a very small proportion of total costs, but it does influence investment in and by SMEs, notably the location of investment. Moyo (2012); Scott et al. (2014) argue that power outages seem to affect small firms more than large firms. The duration of outages has far greater negative impact on firm productivity than the frequency of outages.

2.3.3 Quantitative impacts countrywide

In Figure 2-4 EThekwini Municipality explains the rationale for rolling blackouts or implanting load shedding as balancing supply and demand by reducing the strain

on the grid to avoid a total blackout (Oluwasuji et al. 2019). According to Coetzee and Els, (2016) South Africa faced a power crisis beginning of 2006, which was exacerbated by the country's economic expansion, resulting in demand exceeding supply.

Statistics South Africa (2020) states that load shedding is system management aimed at relieving pressure on the grid so that there is controlled rotational blackout instead of all businesses and customers being hit at the same time. Pombo-van Zy (2020) estimates the cost of load shedding over the past 10 years to about R338 billion. In agreement Jika and Skiti (2020); Brown (2020) report that the cumulative costs of 530 hours in 2019 cost South Africa between R59 billion and R118 billion. Staff Writer (2020) claims that load shedding has reduced the country's GDP growth over the period of three years, in 2019 the GDP was allegedly reduced by 0.3%, in 2020 it is expected to be reduced by another 0.8% and in 2021 by a further 1.3%.

Instinctif Partners (2020) cite Moody's revisited growth forecast of 0.4% due to the crippling effects of power outraged for SA GDP following a 2019 GDP reduction of 0.30% (an equivalent of R8.5 billion of real GDP). Khobai, Mugano, Roux and Le (2017) argue that in 2015 the cost of load shedding on different industries amount to R15 to R20 million for every five hours of lights out. The economic impact of load shedding in 2015 alone was equivalent to the loss of an entire industry (Carew, 2015). Ateba, Prinsloo and Gawlik (2019) state that 10 hours of blackouts per day for 20 days a month results in losses of R20 billion. Using the same parameters, Stage 2 load shedding costs the economy R40 billion per month and Stage 3 was estimated to have a cost of R80 billion per month. Ateba et al. (2019) point out that the GDP has been on a constant decrease since the first quarter of 2014 due to load shedding.

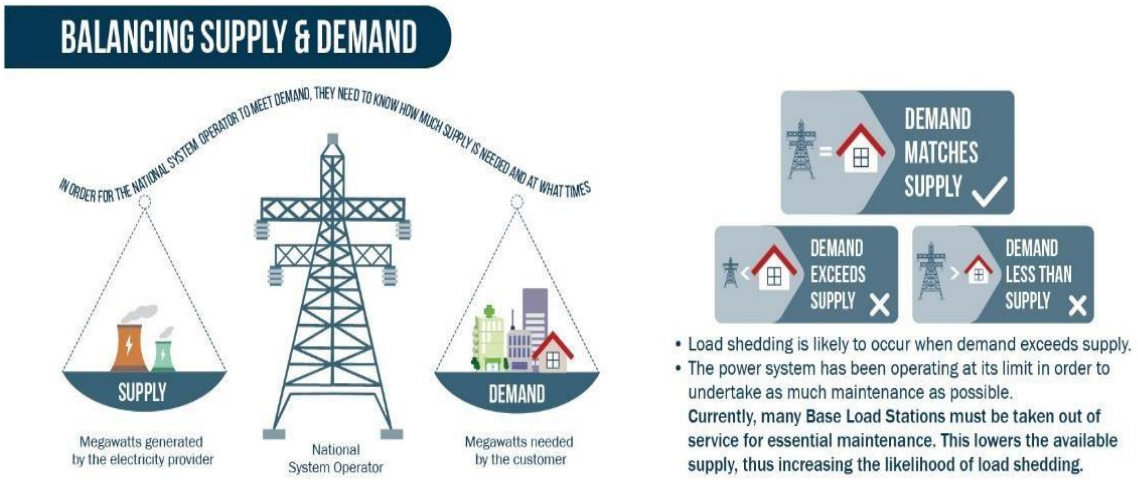


Figure 2-4: Rationale for load shedding
Source: EThekwini Municipality (2021)

According to Organisation for Economic Cooperation and Development (OECD) (2020:

6) just like in other economies, tourism has been a growth sector in South Africa increasing international tourist arrivals from 4.5 million in 1995 to more than 10 million by 2017, accompanied by a tripling effect on directly related employment. Goldberg (2016) points to the dynamic and complex impact of load shedding on consumers across all industries including the tourism and hospitality industry. February et al. (2016) agree that load shedding has a significant impact on small hospitality facilities because the many of such enterprises lack some form of standby power production or backup devices due to their size. On the same note, Duminy (2019) points out that as a perishable good, tourism and hospitality establishments are not able to store their services for consumption at a later stage once the guests leave. Cape Town suffered seven complete power outages between November 2005 and January 2006, which removed 1 326 megawatts from the power supply, allowing the city access to just under 50% of the power requirements in the area (Coetzee and Els 2016).

2.3.4 Qualitative impacts of load shedding countrywide

According to Botha (2019), dependable power is a significant component towards every business's activity in the twenty-first century. A considerable 50% of Sub-Saharan African enterprises identified power as a key limitation to their

operational processes, but Oseni (2013) reports that just 39.2% of the globe views power outages to be a serious obstacle. According to Botha (2019), among the major impediments to operational processes in underdeveloped nations like South Africa is a barrier to electricity. Similarly, Botha (2019) asserts that there is a distinct link involving electricity and enterprises since electricity has a significant influence on economic operations. This one is due to the fact that electricity is used for a variety of functions, including storing, operational procedures, manufacturing, and powering appliances. The provision of energy is a significant part of almost any industrial process, giving electricity a necessary item for industries – like the service sector. In the absence of power, B&B's and Guest houses are not able to efficiently offer their service to satisfy customers (Botha 2019; FEDHASA 2021). Load shedding results in the knock-on effect of reduced productivity is fewer sales and exports, which ultimately reduces tax revenue collection for SARS imbalance between supply and demand, price hikes and more suffering especially in already poorer communities (Instinctif Partners 2020).

Tourism establishments around South Africa are heavily affected by frequent power outages especially during peak seasons in an industry that is already characterised by seasonality. Smaller hospitality establishments which include B&B's and Guesthouses are greatly affected because the greater part lack any form of additional power generation or backup capacity. Smaller generators tend to be noisy, which does not enhance the experience of guests. The use of candles is risky as they may ignite fire. Also, when the electricity comes back on, the surge often causes electrical equipment and appliances to blow, which is inconvenient and can be expensive to guests who sometimes have to replace their electrical items (Cissokho 2015). This is accompanied by embarrassment, loss of confidence and chances for repeat business. Lyndsay Jackson of Guest House Association of South Africa, stated that costs are compounded by having to purchase extra linen in the event that laundry cannot be done, installing gas cookers (Reinstein 2014). Guests get affected when electric doors jam due to dying batteries for those with backup systems, cold showers, time gets wasted and the overall morale of the guests and staff gets affected (Steenkamp et al. 2016).

Azasoo and Boateng (2016); Mandina and Kurwiravamwe (2016) argue that load shedding results in early damage of appliances and machinery due to the sudden ON and OFF turning, increases costs, (Joubert 2019); (Villiers 2019) creates conducive environment for criminal activities such as cable theft. It also promotes late coming to work due to heavy traffic caused by robots not working and results in loss of jobs due to reduction in productivity. Fiawoo (2016) adds that electricity outages negatively affect the cost and technical efficiencies of businesses, leading to a downturn in sales of lodging; foodservice, events and other hospitality products and some have closed their doors forever. According to Prof Assan and Masibi (2015), power outages impacts the way wherein business choices are made, reduces profit margins as they have to deposit more revenue back into the business as they have to take care of machinery and equipment, Cissokho (2015) incur additional costs through spoilage of foods and inventory. Moore (2019) stated that load shedding in South Africa threatened the survival of tourism businesses especially B&B's and Guesthouses. B&B's and Guesthouses establishment had a group of international tourists cancelling their reservation due to load shedding, despite the business having spent R240 000 to install generators (Moore 2019). In agreement, Botha (2019) argues that the impact of load shedding is worse as some even go out of business.

2.4 STRATEGIES USED BY ACCOMMODATION ESTABLISHMENTS TO MITIGATE IMPACTS OF LOAD SHEDDING

Cissokho and Seck (2013) argue that the impact of outages is not universally negative as a study in Senegal found that outages had a positive effect on SMEs, because outages stimulated better management practices to mitigate the negative impact of power cuts. Arlet (2017) expresses that when a system fails repeatedly as in the case of load shedding, managers need a plan of action for response. As Cissokho (2015) stated, every crisis that an organisation goes through, is a turning point that presents an opportunity for growth. The crisis of power shortage in different part of the globe is known as already discussed. Learning organisations find ways to adapt and mitigate the impact.

Load shedding has been shown to be an effective driver of change in organisations (Coetzee and Els 2016).

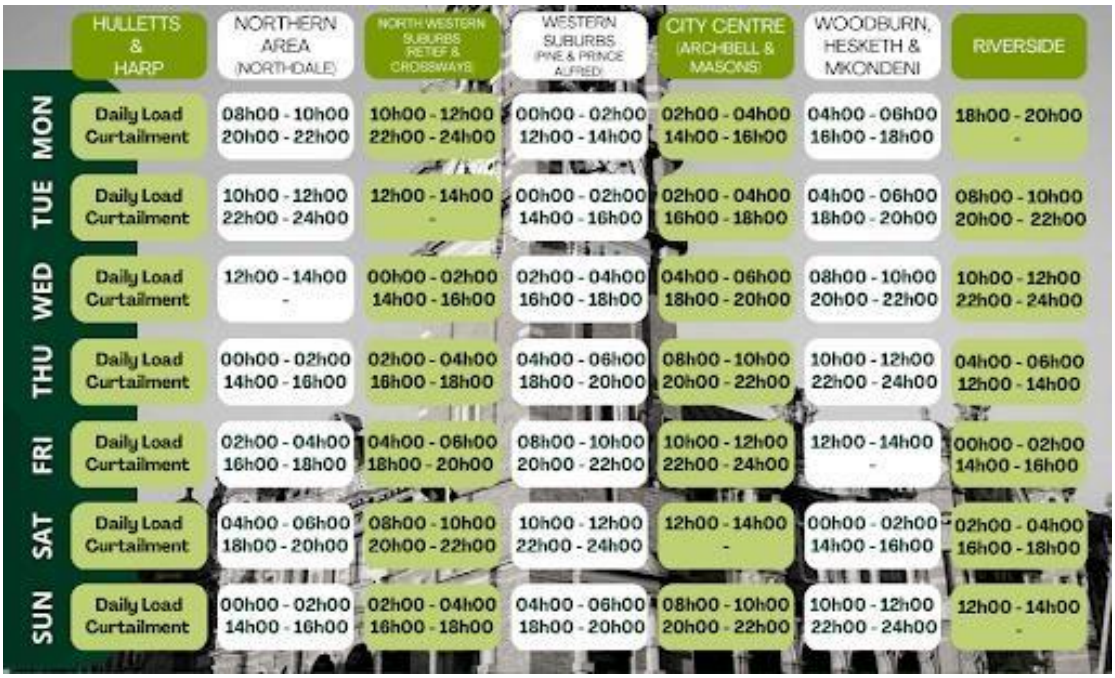
Figure 2-5: Crisis and organisational growth model
Source: Hottinga (2012)

The crisis and growth model advocates for organisational learning as every crisis is seen as an opportunity to grow. As owners and managers of B&B's and Guesthouses try to find ways of dealing with the crisis, the organisation grows in one or more ways as the model (Figure 2-5) shows. Crisis may vary from organisation to organisation, country to country. The question mark in the model could represent load shedding as the focus of this study and the dimensions of growth will depend on how the organisation deals with the crisis. While some B&B's and Guesthouses will learn and grow, others may apply decline and retrenchment strategies as ways of dealing with the crisis, more so as (Bloomberg 2022) South Africa might face 100 days of load shedding in 2022, due to (Lekabe 2022) between 12,000 and 15,000 MW of unplanned unavailability.

However, this study focuses on B&B's and Guesthouses, which are small businesses without the financial muscle to effectively adapt. Fritsch and Poudineh (2016) point out that adaptive measures significantly lower productivity and profitability. Joffe (2012) suggested that they should be more than one company supplying electricity in South Africa, while Steenkamp et al. (2016) suggest

alternative sources of power such as solar photo-voltaic and wind, which would help them mitigate the threat of load shedding while promoting greener service production. Some indigenous source like hydro-power and thermal power are in progress and not sufficient to overcome the energy shortfall. The potential of renewable energy resources can be used to electrify B&B's and Guesthouses. Instead of electricity produced, solar energy also has some applications such as solar cookers and solar water heaters (Khalil and Zaidi 2014). Though not green, diesel-powered generators are widely used to power the accommodation establishments and mitigate the impacts of load shedding.

Azasoo and Boateng (2016) suggest demand management such as the use of batteries to store power to use during blackout. The levels of power consumption were monitored and when consumption moved close to a critical situation, television and radio were used to ask the public to switch off hot water cylinders, pool pumps and other appliances to bring consumption back down to a manageable level (Von Ketelhodt and Wöcke 2008).



	HULLETTS & HARP	NORTHERN AREA (NORTHDALE)	NORTH WESTERN SUBURBS (RETIEF & CROSSWAYS)	WESTERN SUBURBS (PINE & PRINCE ALFRED)	CITY CENTRE (ARCHBELL & MASONS)	WOODBURN, HESKETH & MKONDENI	RIVERSIDE
MON	Daily Load Curtailment	08h00 - 10h00 20h00 - 22h00	10h00 - 12h00 22h00 - 24h00	00h00 - 02h00 12h00 - 14h00	02h00 - 04h00 14h00 - 16h00	04h00 - 06h00 16h00 - 18h00	18h00 - 20h00 -
TUE	Daily Load Curtailment	10h00 - 12h00 22h00 - 24h00	12h00 - 14h00 -	00h00 - 02h00 14h00 - 16h00	02h00 - 04h00 16h00 - 18h00	04h00 - 06h00 18h00 - 20h00	08h00 - 10h00 20h00 - 22h00
WED	Daily Load Curtailment	12h00 - 14h00 -	00h00 - 02h00 14h00 - 16h00	02h00 - 04h00 16h00 - 18h00	04h00 - 06h00 18h00 - 20h00	08h00 - 10h00 20h00 - 22h00	10h00 - 12h00 22h00 - 24h00
THU	Daily Load Curtailment	00h00 - 02h00 14h00 - 16h00	02h00 - 04h00 16h00 - 18h00	04h00 - 06h00 18h00 - 20h00	08h00 - 10h00 20h00 - 22h00	10h00 - 12h00 22h00 - 24h00	04h00 - 06h00 12h00 - 14h00
FRI	Daily Load Curtailment	02h00 - 04h00 16h00 - 18h00	04h00 - 06h00 18h00 - 20h00	08h00 - 10h00 20h00 - 22h00	10h00 - 12h00 22h00 - 24h00	12h00 - 14h00 -	00h00 - 02h00 14h00 - 16h00
SAT	Daily Load Curtailment	04h00 - 06h00 18h00 - 20h00	08h00 - 10h00 20h00 - 22h00	10h00 - 12h00 22h00 - 24h00	12h00 - 14h00 -	00h00 - 02h00 14h00 - 16h00	02h00 - 04h00 16h00 - 18h00
SUN	Daily Load Curtailment	00h00 - 02h00 14h00 - 16h00	02h00 - 04h00 16h00 - 18h00	04h00 - 06h00 18h00 - 20h00	08h00 - 10h00 20h00 - 22h00	10h00 - 12h00 22h00 - 24h00	12h00 - 14h00 -

Figure 2-6: Load shedding schedule
Source: Msunduzi Municipality (2020)

Load shedding has increased dependence on other energy sources. Bhide and Monroy (2011) are of the view that small businesses such as B&B's and

Guesthouses can plan to use biomass such as wood and charcoal for cooking and heating and generators can be reserved for lighting, modern appliances, pumps and communication (Umar and Kunda-Wamuwi 2019). On that note, Laher, Van Aardt, Craythorne, Van Welie, Malinga and Madi (2019) caution that the use of alternative sources of energy such as paraffin, gas, petrol and may be unsafe for guests at B&B's and Guesthouses. Local municipalities use rosters such as Figure 2-6 to inform users in advance. This management tool can be used by B&B's and Guesthouses to plan their guest activities for the day to ease the impact of load shedding. Communication with the guests is critical to ensure that they are not surprised. On advice to accommodation owners South African Tourism Services Association (SATSA) (2021) provides a list of items that will be affected by load shedding. These include electric geyser and electrically heated water supplies, gas hot water systems that rely on mains power to control the system or ignite the gas, electric appliances such as stoves, kettles, toasters, microwave ovens, refrigerators, dish washers, washing machines and tumble dryers, electric lights, TV and hi-fi equipment,

Wi-Fi, cordless phones, fax machines and answering machines that run on electricity electrically motorised security gates and garage doors pool pumps, personal computers, electric air conditioning, and automatic electronic control systems among others. Owners and managers are advised to ensure that those with battery backup should have sufficient capacity to operate a few times during load shedding. SATSA further advises owners and managers to plan activities that do not require electrical power for the duration of load shedding such as sightseeing, ecotourism activities, game drives, beach activities, a braai, etc. depending on the location of the facility.

2.5 THEORETICAL FRAMEWORK

According to Thomas (2017) theory is a group of related overviews that indicate new observations used for the purposes of explaining complex phenomena. Adom, Hussein and Adu-Agyem (2018) state that just like a conceptual framework, a theoretical framework explains the path of a research and grounds it

in theoretical constructs thus making research findings more meaningful, acceptable to the theoretical constructs in the research field. Imenda (2014) argues that a theoretical framework gives life to a research by Adom et al. (2018) providing an academic position of the researcher. The theory that was found to be relevant and adequate to explain the phenomenon of load shedding and survival strategies of selected B&B's and Guesthouses in the Pietermaritzburg area was the Resilience Theory. The owners of these businesses had to come up with strategies and protective factors in the face of adversity to ensure the survival of their businesses.

The theory was founded by a clinical psychologist, Dr Norman Garmezy in the 1970s while doing work at University of Minnesota in the United States of America. It has been used in many other fields such as environmental education (Lundholm and Plummer 2010), organisational behaviour (Duchek 2020), governmental studies (Palekiene, Simanaviciene and Brunekiene 2015) and others. Garmezy (1991) defined resilience as the capacity for recovery and maintained adaptive behaviour that may follow initial shock and incapacity upon initiation of a stressful situation. To be resilient, one or an organisation needs to show 'functional adequacy' despite an interfering situation, as a benchmark of resilient behaviour under a debilitating situation (Garmezy 1991). Resilience is further explained as the ability of a system to recover quickly from a disruption (Junfri, Widiputra and Jung 2019), ability to anticipate, absorb, and recover from the effects of hazardous events in a timely and efficient manner (Intergovernmental Panel 2012).

2.5.1 Resilience Theory

Junfri, Widipitra and Jung (2019) state that a long-term resilience framework focuses on vulnerability and adaptability analysis, identifying and prioritising resilience enhancement strategies, cost/benefit analysis and applications of the enhancement strategies. Junfri et al. (2019) further argue that the vulnerability analysis considers three system states, namely resilient, degraded, and restorative. Cost/benefit analysis was included to classify the enhancement strategies based on resilience or cost-efficiency. Resilience assesses the power

of systems by modifying pressure and release risk framework. System identification includes typology, physical characteristic, operational constraints and dynamic behaviour. Vulnerability analysis is the evaluation of the possible impact of disturbing events, recovery speed and system adaptability (before, during and after the disturbance). Junfri et al. (2019) identify the following four principles of resilience: robustness (absorbability), resourcefulness (real-time crisis management), rapid recovery and adaptability (uptake of lessons learned). Figure 2-7 indicates the equilibrium level prior to a disturbance. This is the stage where facility owners should put measures to anticipate change in place. When the disturbance (load shedding in this case) hits, those measures assist the facility to resist or absorb the pressure. The disturbance, depending of the level of impact, will cause the facility to drop below initial equilibrium. Its response and strategies will determine the speed with which it recovers. As Andersson and Ledogar (2008); Ledogar and Fleming (2010) put is, the availability of resources plays a critical part in recovery and adaptation. Figure 2-7 illustrates that after a shocking event, a resilient facility will return to equilibrium of even find a new higher equilibrium.

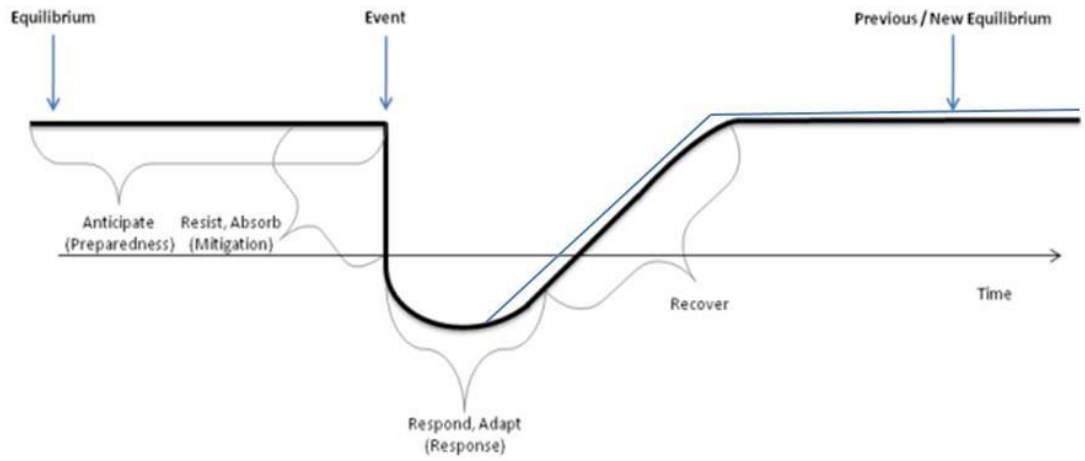


Figure 2-7: Resilience theory model
Adapted from: Junfri et al. (2019)

Carlson et al. (2012) postulate that resilience is the ability of an entity asset, organisation, community, region to anticipate, resist, absorb, respond to, adapt to and recover from a disturbance. Carlson et al. (2012) furthermore state that this definition underlies analysis and proposed approach to the measurement and evaluation of resilience at the facility.

Andersson and Ledogar (2008); Ledogar and Fleming (2010) identify the following three general classes of resilience models: *compensatory model* (explains a situation where a resilience factor counteracts or operates in an opposite direction to a risk factor. The resilience factor has a direct effect on the outcome, one that is independent of the effect of risk factor exposure. Resilience factors operate to alter the trajectory to avert the negative outcome), *protective model* (explains how availability of resources can reduce the effects of a risk, thus making an entity in the case of this study, more resilient that those with limited resources. Protective factors/resources/assets may operate in several ways to influence outcomes.

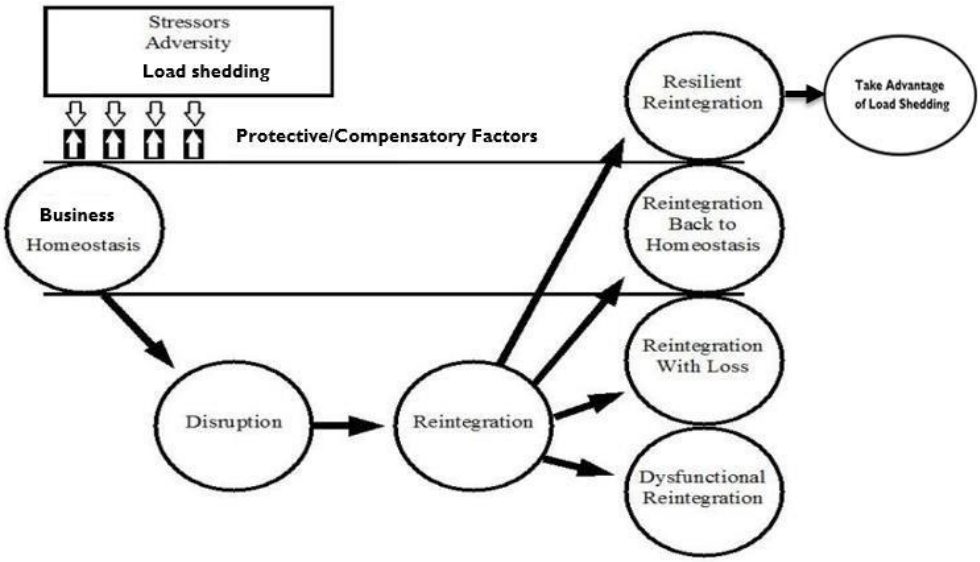


Figure 2-8: Protective factors and resilience
Adapted from Thomas (2011:2)

They may help to neutralize the effects of risks and weaken, but not completely remove the risk, *challenge model* (explains the how the extent of risk is associated with the level of negative outcome, meaning that the higher the risk, the higher the level of the negative outcome and vice versa). Figures 2-4, 2-7 and 2-8 show that a disruption such as load shedding, makes a B&B or Guesthouse operate below the homeostasis level. Here is anxiety due to business and financial losses as well as concerns about survival. According to Thomas (2011); Lakioti and Stalikas (2020) 'resilient reintegration' is the most positive outcome of a process involving an individual B&B's or Guesthouse's reactions to adversity, which occurs when one experiences some insight or growth as a result of disruption as illustrated in Figures 2-7 and 2-8. It results in the strengthening of resilient qualities and business survival in the case of this study.

2.5.2 Implications of Resilience Theory in the study

Resilience theory has its roots in the study of adversity and an interest in how adverse experiences impact people. Load shedding cause's vulnerability and is therefore regarded as an adversity. The study investigated such vulnerabilities and forces that move B&B's and Guesthouses owners in particular, to survival and to adaptation. Ways of thinking about resilience are based on resilience as a process and capacity to 'rebound from adversity strengthened and more resourceful' (Fletcher and Sarkar 2013), 'manifested capacity of a dynamic system to adapt successfully to disturbances that threaten the function, survival or development of the system' (Theron 2016: 636; van Breda 2018). According to Brown, Rovins, Feldmann-Jensen, Orchiston and Johnston (2017) Guesthouses and B&B's can use resilient theory to overcome adversity of load shedding and continue forward, often thriving as they reinvent themselves. Resilience theory includes reducing the consequences of failure and assuring business continuity under adverse conditions. Brown (2017) furthermore state that resilient in B&B's and Guesthouses can question assumptions about their environment. For B&B's and Guesthouses, the resilience theory will help them translate into growth opportunities changing risks such as implementation of load shedding. Resilient organisations employ adaptive strategies, which may fundamentally change the organisation to allow it to survive into the future. If a facility is too rigid, its

resiliency may be lower (Brown et al. 2017) and so its survival chances. Resilient organisations have improved response to more common daily challenges such as load shedding because they have an increased awareness, greater ability to manage their vulnerabilities and have learnt to adapt and innovate (Brown et al. 2017).

2.6 CONCLUSION

This chapter presented the literature review which addresses the topic, problem and research objectives as well as derived theoretical framework. The chapter illustrated that power failure; rolling blackouts and load shedding as it is known in South Africa, happen in many countries across the world even though causes vary between developed and developing economies. Existing literature shows that the electricity access has potential of improving both productive and profitability of business including B&B's and Guesthouses, while its shortage can have disastrous consequences. The chapter also showed that capacity and resources of various businesses have implications for planning and resourcefulness. In the context of load shedding has seen to be negatively affecting many B&B's and Guesthouses around the world. Electricity access is interconnected with multiple dimensions of socioeconomic development: income generating activities, production activities, household's economy, education and social networks (Mhaka, Runganga, Nyagweta, Kaseke and Mishi 2020). The Resilience Theory used to reinforce the study illustrates that learning organisations identify the stressors (Figure 2-8), attempt to understand the disruption and then reintegrate disruptions by finding copying mechanism. It is for this reason that the study also incorporated strategies used by B&B's and Guesthouses to mitigate the impacts of load shedding. Chapter 3 presents the methodological choices made by the researcher in order to satisfy the objectives of the study.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This section is centred on the research approach and design applied in the analysis.

Primary research consists of interviews with manager of the B&B's and Guesthouses in Pietermaritzburg and secondary data on the financial performance of establishments and other losses due to load shedding. This chapter is very significant because it introduces the characteristics, tone and attitude of the research project. The chapter clarifies the research inquiry process and why certain choices were made. This methodology chapter gives a justification for the methodological choices of the researcher. This chapter covers the research paradigm and epistemology, research methodology, design and methods, population and sampling, data collection and analysis methods and techniques, ethical considerations and validity and reliability pertaining to the issue of the impact of load shedding on B&B's and Guesthouses in the area of Pietermaritzburg.

3.2 RESEARCH PARADIGM AND EPISTEMOLOGY

Research paradigm is the set of common beliefs and agreements shared between scientists about how problems should be understood and addressed (Kuhn 2012). While the positivist orientation assumes that reality exists 'out there' and that it is observable, stable and measureable (Saunders, Lewis and Thornhill, 2012), the post-positivist paradigm (constructivism) used in this study, allows participants to share their experiences of and attitudes towards the phenomenon being studied such as load shedding.

This paradigm recognises the importance of the subjective human creation of meaning, but doesn't reject outright some notion of objectivity. Pluralism, not relativism, is stressed with focus on the circular dynamic tension of subject and

object. One of the advantages of this approach is the close collaboration between the researcher and the participant, while enabling participants to tell their stories. Through these stories the participants are able to describe their views of reality, such as load shedding and this enables the researcher to better understand the participants' actions and feelings (Baxter and Jack 2008).

3.3 RESEARCH METHODOLOGY AND DESIGN

According to Assan and Masibi (2015); Du Plooy-Cilliers et al. (2014), the research design entails the plan to be carried out by the researcher. It is an outline of how the researcher has used to formulate questions, to collect data and evaluate the final results as it informs a series of decisions that comprise the research strategy (Trafford and Leshem 2008). The research design implemented in this study to facilitate the answering of research questions is constructivism.

3.3.1 Research method

Andrew et al. (2011) argue that constructivism lends itself to qualitative research type using tools such as semi-structured questions, emerging approaches, texts and images. This approach allows participants to generate meanings of their own situations within a single concept, which was load shedding in this case. Participants therefore bring personal values and attitudes into the study as the methods and design allow. The study employed qualitative methods to data collection and analysis because of the nature of the research objectives that the study sought to satisfy. Denzin and Lincoln (2013) defines qualitative methods as strategies, processes or techniques utilised in the collection of data or evidence for analysis in order to uncover new information or create better understanding of a topic in contexts or settings of participants.

3.3.2 Research design

Research design is the framework of research methods and techniques chosen by a researcher. The design allows researchers to hone in on research methods that are suitable for the subject matter and set up their studies up for success

(Quinlan 2011). Fox and Bayat (2010) describe the research design as a blueprint, or outline, for conducting the study in such a way that maximum control will be exercised over factors that could interfere with the validity of the research results. The research design is the researcher's overall plan for obtaining answers to the research questions guiding the study. Babbie, Mouton, Voster and Prozesky (2012) state that designing a study helps researchers to plan and implement the study in a way that will help them obtain the intended results, thus increasing the chances of obtaining information that could be associated with the real situation. Semi-structured interviews were used to collect data with owners and management of selected B&B's and Guesthouses in the area of Pietermaritzburg.

This design was chosen to meet the objectives of the study, namely, to determine the knowledge and views of patients with regard to impact of load shedding in B&B's and Guesthouses in Pietermaritzburg (Doody and Noonan 2013). Secondary data were used to collect data about the how the load shedding has impacted the financial performance of B&B's and Guesthouses.

3.3.2.1 Case study design

The case study approach allows in-depth, multi-faceted explorations of complex issues in their real-life settings (Crowe, Cresswell, Robertson, Huby, Avery and Sheik 2011). Yin (2003) based their approach to case study on a constructivist paradigm. Constructivists claim that truth is relative and that it is dependent on one's perspective of their experiences. In this study the phenomenon of load shedding was investigated using cases of B&B's and Guesthouses in the area of Pietermaritzburg.

3.3.2.2 Cross-sectional design

Cross-sectional studies are characterised by the collection of relevant information (data) at a given point in time. Hence, there is no time dimension involved in cross-sectional studies, as all data are collected and mostly refer to the time at or

around the time of the data collection (Kesmodel 2018). The study was cross-sectional by design as opposed to longitudinal, which means that data were collected at one given point in time in the different B&B's and Guesthouses. According to Setia (2016) in a cross-sectional design data is collected at one point in time and analysed.

3.3.3 Population and sampling

Sekaran and Bougie (2013) describe a population as the whole of all respondents who meet a list of criteria, which includes the full group of people who are of relevance to the study and whom the study results may be extrapolated. Auriacombe (2016) views a sample as a portion or a subset of the research population selected to participate in a study, representing the research population.

The population for this study was made of all B&B's and Guesthouses in Pietermaritzburg that were formally registered with the Tourism Hub. Depending of the number of facilities, a sizable sample was selected to collect qualitative data in order for the sample to accurately represent the population. According to SA Venues (2020), there were 59 accommodation establishments within a 10km radius of the central business district (CBD) of Pietermaritzburg including hotels and lodges. A non-probability sampling design was used to select only B&B's and Guesthouses as they were the target of the study. According to Krejcie and Morgan (1970) a sample size of 35 out of 39 registered establishments is enough for a population of 40. Consequently the sample size for this study was 35 (90% sample) B&B's and Guesthouses. According to SA Venues (2020), there were 59 accommodation establishments within a 10km radius of the central business district (CBD) of Pietermaritzburg including hotels and lodges. Of these, 39 were B&B's and Guesthouses and the other 20 fell under hotels and lodges and were excluded from the study. Of the 39, 35 were purposefully sampled to form part of the study and the remaining 4 were used to test the research instrument.

3.3.4 Data collection

Flick (2014) define data as information obtained during the course of an investigation or study. Best (2014) State that data collection is the procedure of

collecting, measuring and analysing accurate insights for research using standard validated techniques. A researcher can evaluate their hypothesis on the basis of collected data. Data collection methods can be divided into two categories: secondary data collection (collected in this study through an in-depth review of literature) and primary methods of data collection (collected through semi-structured interviews) (Beins 2017).

Qualitative data were collected through the interviews with owners and management of selected B&B's and Guesthouses in the area of Pietermaritzburg. 35 Interviews were conducted. Leedy and Omrod (2015) argued that the other method of data collection is the use of interviews, and it needs the researcher or interviewer to create an interpersonal relationship with the participants to ask them based on the research questions. The researcher intended to obtain a wider insight of the respondents' constructs through conversation and the vocabulary they employ in building the various narratives by using interview sessions as a technique of data collecting. The interview strategy enabled the researcher to get insight and gain a better picture. As an outcome, evidence analysis resembles the respondents' insights. Interviews were conducted with managers of the B&B's and Guesthouses. Respondents were asked questions on how frequently they experienced load shedding and how load shedding had affected their business operations. Representatives of the B&B's and Guesthouses were asked to explain in what ways and to what extents their businesses have been affected by load shedding (Appendix C).

3.3.4.1 Instrument design

Instrument design refers to devices used to collect data such as questionnaires, tests, structured interview schedules and checklists (Moore and Liompart, 2017). The researcher used qualitative methods to data collection and analysis because of the nature of the research objectives that the study sought to satisfy (Chapter 1). Qualitative data were collected from the interviews with owners and management of selected B&B's and Guesthouses in the area of Pietermaritzburg.

3.3.4.2 Data collection process

The interviews were conducted in English as all the participants were conversant with the language as the language of business. The responses given by the respondents to the semi-structured questions were read through several times by the researcher. Categories or themes were then created and category names assigned based on the responses. Efforts were made to ensure that the categories were exhaustive and mutually exclusive. In cases where the researcher felt that the categories were repetitive or overlapping, revisions were made by combining such categories. Each response was then examined and placed in the relevant category.

According to Al-Yateem (2012) recording can be viewed or listened to repeatedly in case of doubt or during data analysis, and it also provides a basis for reliability and validity. All participants were interviewed by the researcher himself and all interviews were recorded on an audiotape with permission of the participant to ensure that no information was omitted because it is hard to keep up with a participant during the interview if you write down what the participant is saying. In terms of the Covid19 limitation, all Covid-19 protocols were followed. Masks were worn throughout the interview by both the participant and the researcher. Social distancing was maintained throughout the interview and the participant and the researcher sanitised before the interview started. To help prepare participants for the interview, a link was created emailed to all the participants. The researcher was there when the participant answered the question to enable them to ask for clarity where necessary.

3.3.5 Data analysis

Data analysis was aligned to data collection. Qualitative techniques such as thematic analysis, use of cause-and-effect diagrams, images, word clouds and in some cases capturing of verbatim responses were used. Content analysis was

used to analyse the data which was gathered from personal interviews. Based on Quinlan (2011), this is the form of study for which evidence obtained is classified into themes and sub-themes such that it may be compared. The important benefit of content analysis is that it improves in the reduction and simplification of facts obtained. Furthermore, content analysis enables researchers to organise qualitative information recorded in a manner that fulfils the achievement of study goals. Human mistake, on either hand, is heavily engaged with content analysis, as there is still a possibility that researchers would misunderstand the data acquired, resulting in incorrect and inaccurate findings (Jonker and Pennning 2010). This was avoided as the supervisor insisted on seeing all interview transcripts.

Quantitative tools and techniques such as such as graphs and tables were used to present and analyse nominal quantitative data. These tools and techniques were used to make thinking visible to the reader (Trafford and Leshem 2008). Finally the findings were presented in alignment with the research objectives (Chapter 5).

3.4 ETHICAL CONSIDERATIONS

According to Recker (2012) ethics are the moral principles that govern a researcher's behaviour. Research ethics may be referred to as doing what is morally and legally right in research. Recker (2012) further states that they are actually norms for conduct that distinguish between right and wrong, and acceptable and unacceptable behaviour from the researcher. Moon, Brewer, Januchowski-Hartley, Adams and Blackman (2016) postulates that ethical considerations form a major element in a research. The researcher needs to adhere to promote the aim and objectives of the research imparting authentic knowledge, truth and prevention of error (Chetty 2016).

Various ethical concerns were addressed in the present research as stipulated by the Research Directorate at DUT. As previously stated, all individuals provided signed consent for their involvement in the study, through a signed Consent and

Briefing Letter. The researcher also had to obtain ethical clearance to conduct the study from the Ethics Committee (Appendix E, IREC 025/22). The goal of both letters sought to inform respondents that their involvement in the study has been entirely optional and that they could drop out at any moment and time (Appendices A and B). Prior to conducting the study, the researcher also took a research ethics course (module 1 as required by the Faculty of Management Sciences) Appendix D.

The respondents were sufficiently briefed about the survey's aims and were convinced that one's responses would be kept secret and utilised just for education reasons and for the reasons of the detailed study. During investigation, individuals were not victimized nor mistreated, respectively mentally and physically.

3.4.1 Anonymity and confidentiality

Confidentiality relates to a situation whereby the researcher is aware of a respondent's identification yet takes precautions to prevent that identification from becoming revealed by others. Confidential information is information that is private or secret. The implication is that what is being said should not be passed on to others (Anney 2015). Anonymity is a state whereby the researcher do not disclose the identity of particular people (Wiles Crow, Heath and Charles 2008). Anonymity and confidentiality were ensured in this study by not collecting or using the names of the businesses and owners. Also data were aggregated during analysis and interpretation to ensure that it would be difficult to assign the response to any individual participant.

3.5 VALIDITY AND RELIABILITY

According to Cohen, Manion and Morrison (2011) validity and reliability are the two most important and fundamental features in the evaluation of any measurement instrument or tool for a good research. Validity refers to the degree to which an instrument measures what it is supposed to measure (Bryman, 2015).

Reliability refers to the degree of consistency or accuracy with which an instrument measures the attribute it is designed to measure (Flick, 2014). If a study and its results are reliable, it means that the same results would be obtained if the study were to be replicated by other researchers using the same method.

To improve validity, the research instrument was pilot-tested prior to full scale data collection. This was done using the 4 of 39 facilities that were not included in the study. This was done in order to test if the responses gave rise to required data to satisfy the requirements of the research objectives and questions. According to Lowe (2019) a pilot study is a preliminary small-scale study that researchers conduct in order to help them decide how best to conduct a large-scale research project. Lowe (2019) furthermore states that using a pilot study, a researcher can identify or refine a research question, figure out what methods are best for pursuing it, and estimate how much time and resources will be necessary to complete the larger version, among other things. According to Hilton (2017) pretesting and piloting can help the research identify questions that do not make sense to participants, or problem with the instrument that might lead to unwanted answers. The instrument (interview schedule) was pretested for validity, adequacy as well as the reliability and effectiveness to collect required data that would enable the researcher to satisfy the requirements of the research objectives (Bell 2010). It was done to determine the completeness of the tools and clarity of instructions. Pretesting was done with formally registered B&B's and Guesthouses that were not selected to be part of the sample.

Reliability is referred to the stability of findings, whereas validity is represented the truthfulness of findings (Mohajan 2017). The purpose of establishing reliability and validity in research is essentially to ensure that data are sound and replicable, and the results are accurate (Cohen, Manion and Morrison 2011). While reliability is not easy to test in the same study, if another researcher would use the same question in any part of South Africa affected by load shedding, most of the responses would be similar.

3.6 CONCLUSION

This chapter described the research paradigm, epistemology, methodology and design used in the study which provided the philosophical positioning of the study and a description of the research design. The study took a cross-sectional and constructivist design. Qualitative data were collected through interviews with owners and managers of selected B&B's and Guesthouses in the area of Pietermaritzburg.

The chapter further presented a summary of how the data were presented and analysed. Issues of reliability and validity as they pertained to the data collection procedures were examined. Lastly, the ethical considerations for the study were highlighted. Chapter 4 covers data presentation, analysis and interpretation for which the research methodology was used.

CHAPTER 4

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 INTRODUCTION

The third chapter discussed the methodological approaches used in the study. This chapter offers the presentation, analysis and interpretation of empirical qualitative data as a reflection on the results of interviews. In qualitative research language, themes, causes-and-effects are used to build a complex, holistic picture (Denscombe 2014) as human experiences and perceptions are described about the phenomenon under discussion. The purpose in this case was to understand, appreciate and portray the processes and means that people use to reduce the impacts of load shedding on their businesses. The aim of this chapter was to answer the main research questions of the study through presenting, analysing and interpreting the respondents' answers, and comparing these answers with reviewed literature in chapter two. The results of this evidence were presented using of themes, cause-and-effect diagrams, graphs, tables and in some cases, the actual words of respondents. Some quantitative tools (graphs) were used to present nominal data even though the study was qualitative.

4.2 RESPONSE RATE

The study anticipated to conduct a total of 35 interviews comprising of the owners (managers in cases where owners were not available) of the B&B's and Guesthouses. During data collection the researcher managed to obtain a 100% response rate from the anticipated overall total (35). The following sections present, analyse and interpret the results of empirical study.

4.3 DATA ANAYSIS AND INTERPRETATION

Data were gathered through interviews from owners and managers of B&B's and Guesthouses. The goal was to gain knowledge of the owners' or managers' perspectives the qualitative impacts of load shedding as well as resilience strategies used to sustain their businesses. The researcher wanted to know about the history of the businesses in terms of years of operation and why the ventures were started.

4.3.1 The history of businesses

All 35 respondents (100% response rate) answered this question in different ways as it was open-ended. Figure 4-1 captures the responses of all participants.

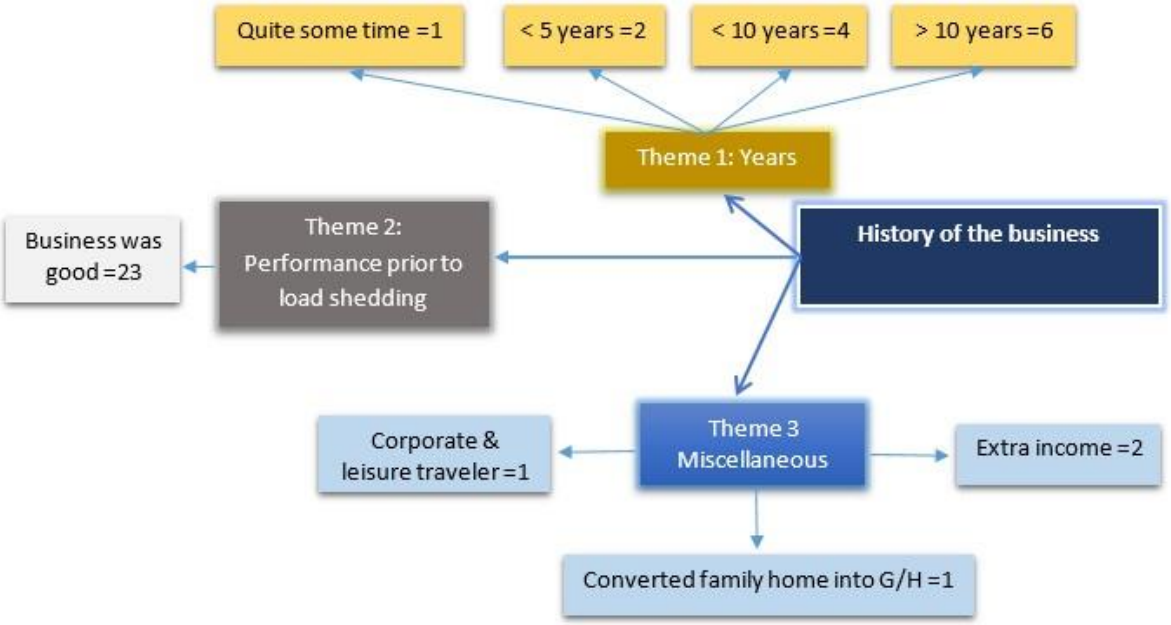


Figure 4-1: History of the business

As illustrated in Figure 4-1, responses formed three themes: Years in operations (1), performance prior to load shedding (2) and miscellaneous (3). Of the 13 who described the history of their businesses in terms of years, 6 were older than 10 years, 4 less than 10 years, 2 less than 5 years and 1 had been operating for quite some time. Theme 2 was the performance of the business prior to load shedding and 23 of them stated that the business was good. To express their

concept of good business some participants used words such as '*guests had to book months in advance*', '*travellers booked for same day or longer due to the vantage point location*', '*business reached its zenith in 2015', business had been growing from strength to strength*', '*profits were good and growing*' and '*we were always full during long weekends and public holidays*.' Theme 3 captured various responses to describe the history of the business. As shown in Figure 4-1, *2 respondents wanted extra income, 1 stated that they converted a family home into a Guesthouse for comfortable living, and another stated that they catered for corporate and leisure travellers*.

These finding concur with a study conducted by Becken and Simmons (2002) which stated that rising energy consumption and deterioration remained the biggest challenges to the tourism sector. Khan and Hou (2020), concede with the findings that the tourism industry expansion, though essential components of modern communities, have frequently come at the cost of power stability. Furthermore, tourism expansion boosts earnings and provides jobs, but it also raises energy usage, which is one of the reasons for load shedding in South Africa as stated by Eskom in chapter 1.

4.3.2 The length and frequency of load shedding in the area

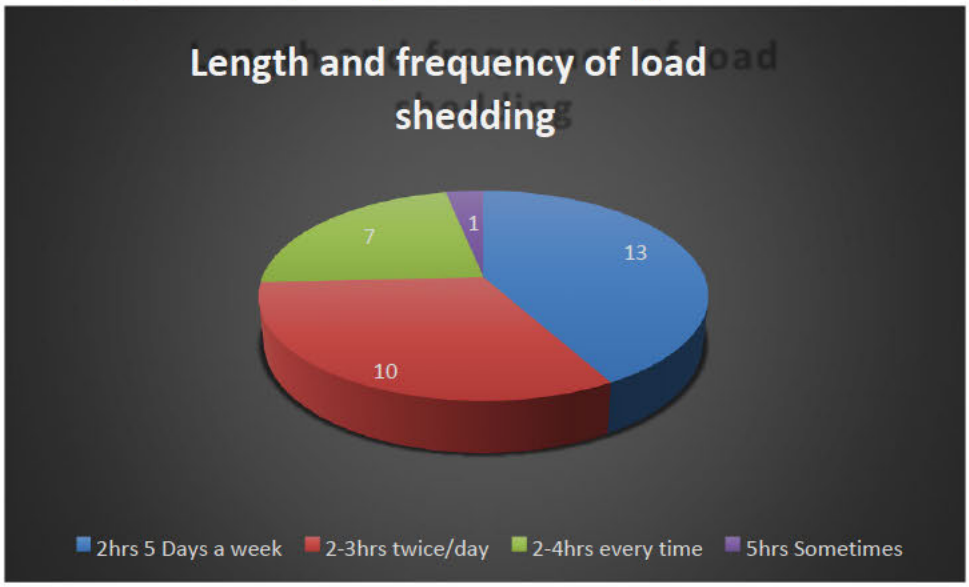


Figure 4-2: Length and frequency of load shedding

As illustrated in Figure 4-2, 37% (13) respondents indicated that load shedding in the area mostly occurred 5 days a week for duration of 2 hours each session. This was followed by 28.6% (10) respondents who indicated the frequency of twice a day at the length of 2-3 hours per session. The other 20% (7) respondents stated that the load shedding lasted within 2-4 hours every time and 1 mentioned 5 hours duration happening sometimes. Some of these responses were inconsistent with the 2020 schedule (Figure 2-6) provided in chapter 2 indicating consistency in terms of duration across the uMsunduzi Municipality. Other respondents could have been mixing load shedding with other causes of power outrages.

Some respondents furthermore expressed their views on the length and frequency of load shedding on B&B's and Guesthouses. Three (3) respondents indicated the length and frequency depended on which stages of load shedding which lasted about 20 days in month, 2 respondents stated that the length and frequency is scheduled at the busy times and 1 respondent stated that the length and frequency is announced by Eskom on Television, radio and social media.

Different scholars in the field of load shedding in hospitality have written extensively about this, like the one encountered by Eswatini's unpredictability of power source manifests itself in power outages 3.6 times a month, averaging 3.5 hours in total (Ramachandran et al. 2018) as a result of said burgeoning energy consumption (World Bank 2015; Government of Eswatini 2014). The only difference of the PMB hospitality entities are that the load shedding frequency 20 days in a month. In the country of Pakistan, power outages occurred about 10-12/14 hours across urban centres as well as 16-18/20 hours through remote regions (Kessides 2013) because demand considerably outstripped supply. Chianese, Rivola, Shrestha and Zahnd (2014 also reported on power cuts lasting for 20 hours in 2001 in Kithmandu, Nepal due to demand excessively exceeding supply. Umar and Kunda-Wamuwi (2019), argue that South Africa fared substantially better with 1.2 power outrages. From the results and the writings of various authors, it can be observed that even though the local Guesthouses and B&B's experience adverse effects from the frequency and length of the load

shedding, other countries encounter even more serious power challenges. Load shedding in the case of South Africa was not as bad when compared to other developing countries already mentioned.

4.3.3 The losses (guests, stock, financial) suffered by the business on a monthly basis due to load shedding

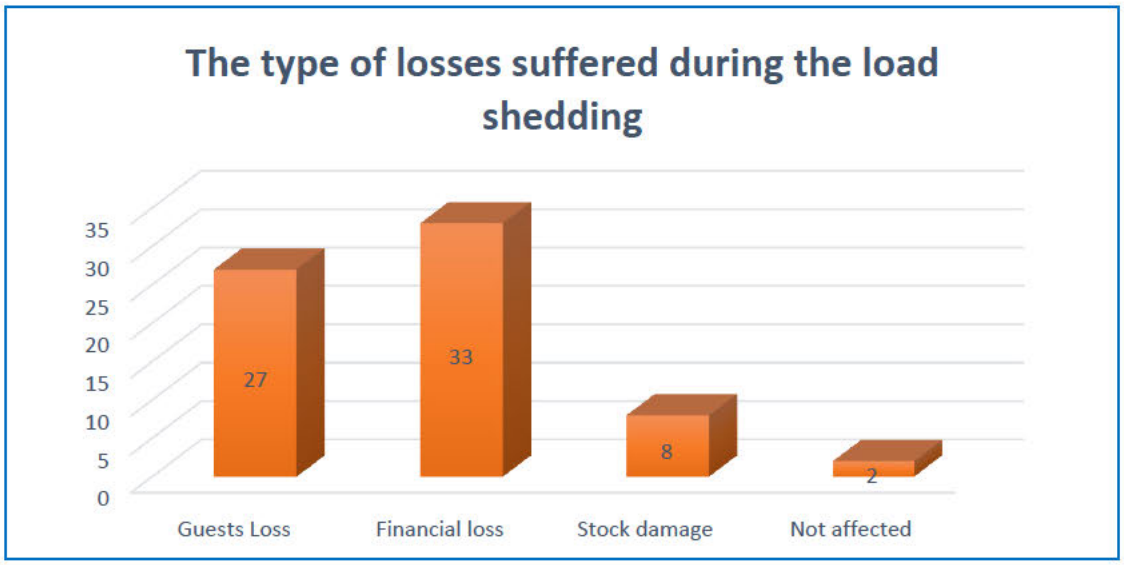


Figure 4-3: Types of losses suffered during load shedding

As Figure 4-3 displays, out of 35 participants, an overwhelming majority of 94% (33) reported that financial losses were the major impact of load shedding as it had also become expensive to operate the business. Another significant 77% (27) participants attributed financial losses to the loss of guests, reduction in occupancy rates and loss of repeat visits. About 23% (8) highlighted stock damage and food spoilage as also adding to financial losses. Only about 6% (2) of the participants shared that they were not affected by load shedding because they had prepared for it, through provision for backup energy supply and vigilance.

Some of the qualitative responses to the question of losses due to load shedding were those captures in Figure 4-4 that follows. Among the most frequent qualitative losses suffered due to load shedding were the damages to appliances

(86%), customers having had enough of excuses from the owners and managers (60%), concerns about brand damage (60%) and guests being afraid of increased crime rate due to long hours of darkness (58%). Other losses though not frequent, included concerns over paying workers who have not worked a full day (6%), the need to order more frequently to avoid food spoilage (6%), some staff having been retrenched due to reduced occupancy (6%), having to budget to buy generators and challenges with unavailability of water during load shedding (3%).

Figure 4-4: Qualitative losses suffered due to load shedding

In a study completed in Finland on the economic impacts of power failure, Küfeolu (2015), stated that losses amounted to a €million through 2005 and grew to slightly over €18 million in 2011. The challenges identified in this study were similar to those determined by Fritsch and Poudineh (2016) who stated that Ghana's electrical problem has had a massive detrimental impact on industries posing a severe impediment to continued capital formation. Wood (2019) concurred that most quantitative implications of load outages concentrate on observable statistics like the frequency of visits lost, the quantity of power cut, the sums of monetarily lost, the quantity of employment lost, and even the proportions

of GDP ruined. As confirmed by Raza et al. (2014) claims power outages have an influence on enterprises' overall expenditure, and (Raza et al. 2020) the quality of work or services might suffer as a result of expiration of goods or malfunction devices. This argument is also supported by Pombo-van Zyl (2020); Business Tech (2019); Jika and Skiti (2020); Brown (2020) when estimating that between R118 billion and R120 billion was lost to South African GDP in 2019 at about R1billion per session per day.

4.3.4 Effect of load shedding on staff and guest morale

Figure 4-5 reflects the responses of participants on the effect of load shedding on staff and guest morale. From the 35 businesses that were interviewed only (33) acknowledged to have been negatively impacted by the load shedding events. From the 33 businesses, stated that they encountered disruptions on working hours and daily routines of the staff members, while businesses stated that the staff was clocking-in late during the load shedding due to traffic congestion.

The impact of staff members having to work extra/additional shifts was indicated by businesses and another business had their staff morale demotivated. The business had to lose or cut salaries for some of the staff members in order to survive. Some qualitative responses were that the staff became frustrated because during load shedding they had to do everything manually, and when the electricity is back on the staff have to start over the work that they did manual and put it on the computer, meaning that they worked twice as much. Some respondents mentioned that when there was load shedding staff end up working extra hours because they have to cover the work that was not done during load shedding period and over time cost more money. Staff sometimes arrived at work not wearing uniform because they could not iron, which they felt was bad for the image of the organisation. Other respondent stated that when there was load shedding for 2 to 4 hours, staff did do any work and when power came back, they tended to be sluggish.

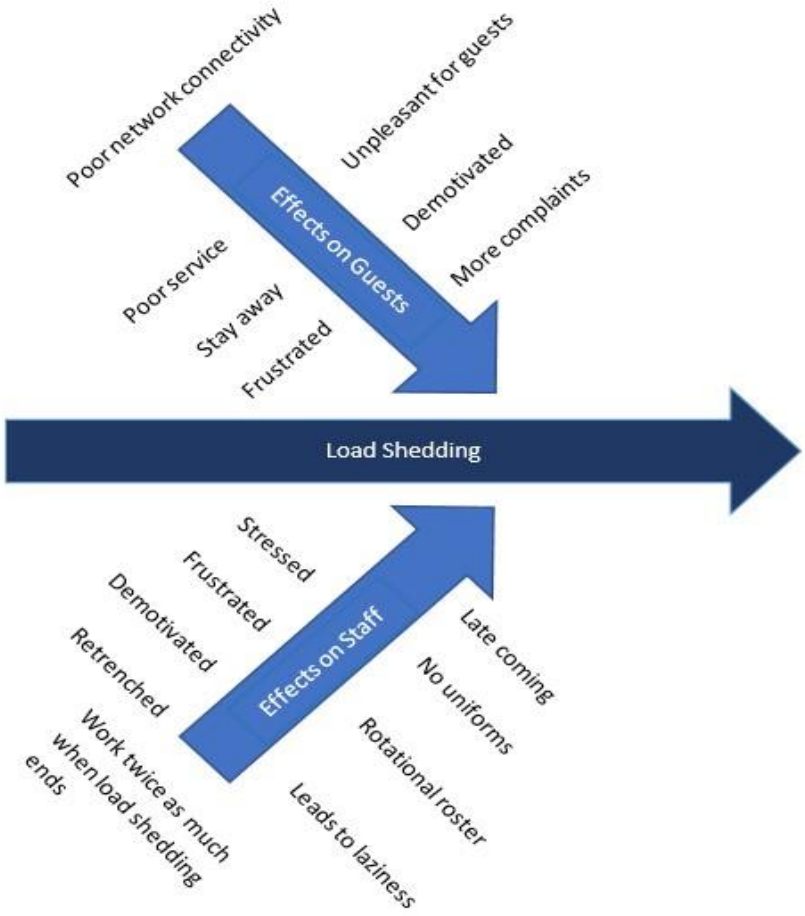


Figure 4-5: Effects of load shedding on staff and guest morale

All the 35 businesses that responded to this question, had experienced loss of trust from the guests especially if they did not have enough backup power for the duration of the load shedding. The sound of the generator irritated the guests who also got bored with the unavailability of the television. As a result, the number complains had increased, pointing to customer dissatisfaction, which was not good for business. Another respondent stated that their regular customers were no longer coming because they did not have a backup generator. Other impacts on guests included weak network and failure for guest to stay connected. They also shared that unavailability of cooling devices, guests room brightness, web servers, kitchen and refrigeration equipment, and elevators which are among the critical operating systems that make the facility feel like a home to guests had a negative effect.

This is in line with Raza et al. (2015) who observed the influence of power cuts on the daily lives of the inhabitants of Sargodha region. They enumerated loss of time and failure to complete tasks. Sichone et al. (2017) on the other hand reported a decline in staff performance and a loss of about 5 000 jobs in Zambia, while in Pakistan power cuts had resulted in the loss of about a million jobs in the tourism industry alone (Muhammad 2015). Moreover, the tourism sector that hired approximately 47,000 Ghanaians (nearly 9% of an average labour Ghanaian populace) was severely affected due to inconsistency in power supply and resultant obstacles (Boakye et al. 2016).

4.3.5 Thoughts and feelings about the impact of load shedding on business and neighbourhood

Figure 4-6 illustrates the thoughts and feelings about the impact of the load shedding on business. All the 35 businesses who responded to this question stated that they faced detrimental effects on their equipment, staff and business in general. Their responses fell into two broad themes, namely: negative and progressive. Negative thoughts and feelings were expressed in the use of words such as: *frustrating, stressful, poor service delivery, more guest complaints (23%) 8 participants, 71% (25 participants) reported drop in occupancy rates, labour intensive, small businesses affected more, financial drain and slow business high crime rate as a result of darkness. The majority of participants 88.6% (31) felt that the problems of load shedding were political.* Almost all the participants 33 (94%) were not very proactive in putting mechanisms to counter the negative effects of load shedding, which could be linked to financial constraints as they indicated that as small businesses, they were affected more. All 35 participants expresses a wish that the government share financial costs with Eskom to avoid load shedding.

Some of the responses reflected in Figure 4-6 were progressive, looking beyond the problem to thinking about possible solutions. It should be noted that in some cases the respondents expressed both positive and negative thoughts and

feelings as the interviews were semi-structured. As suggested by Swilling, Mohlakoane, Jacob, Mararakanye, Bekker and Vermeulen (2021), it is possible to imagine a prosperous future in which load shedding has no effect on a business anymore. Forward-looking responses were indicative of ability to grow from a crisis (Figure 2-5) and be resilience (Figure 2-8) of participants who seemed to have accepted that load shedding was part-and-parcel of doing business in South Africa included: *securing alternative sources of power such as solar panels, generator and installation of 'behind the metre' on-site battery storage* as suggested by the National Academies of Sciences, Engineering, and Medicine (2017) in chapter 2, *adjusting business operations to reduce the effects of load shedding* and *preparations aligned to the load shedding schedule*.

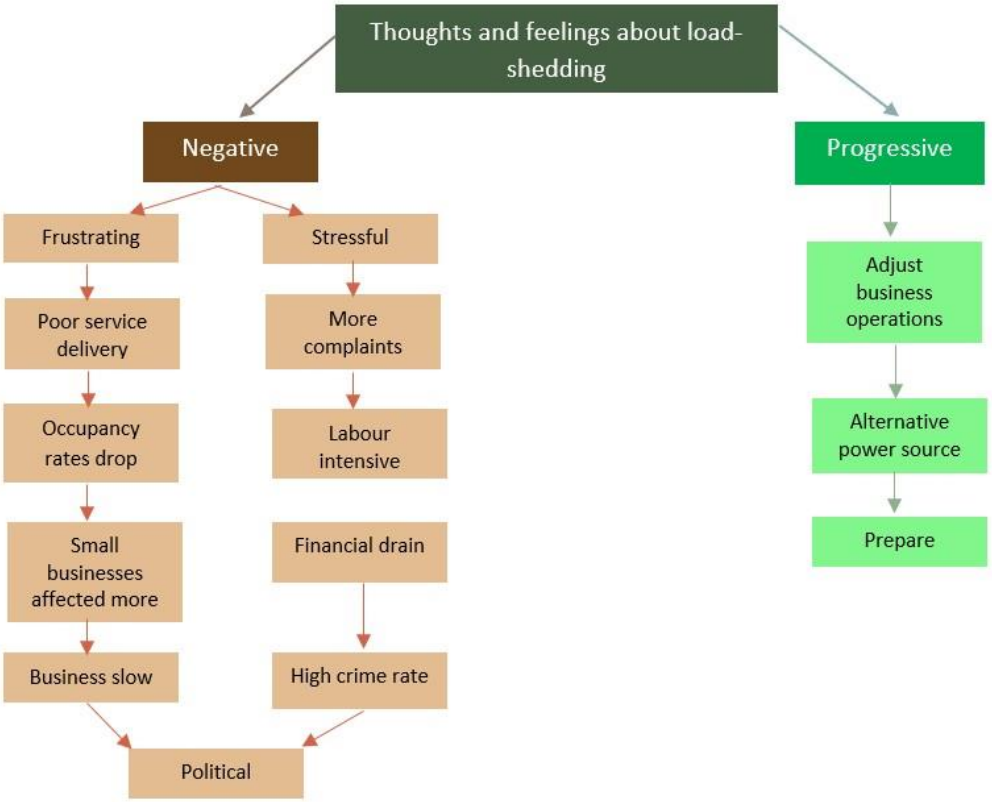


Figure 4.6: Thought and feeling about the impact of load shedding on businesses

The highlighted impacts of the load shedding on business operations are as per Steenkamp et al. (2016) that smaller businesses were heavily impacted as they lacked forms of supplementary energy, (Sichone, Mulenga, Phiri, Kapena, and Fandamu 2017) increased unpredictability, Assan and Masibi (2015) reduced

profit margins resulting in frustrations and (Cissokho 2015) slow business due to frequent breakages of equipment and machinery.

4.3.6 Strategies used and planned to limit the impact of load shedding on the business

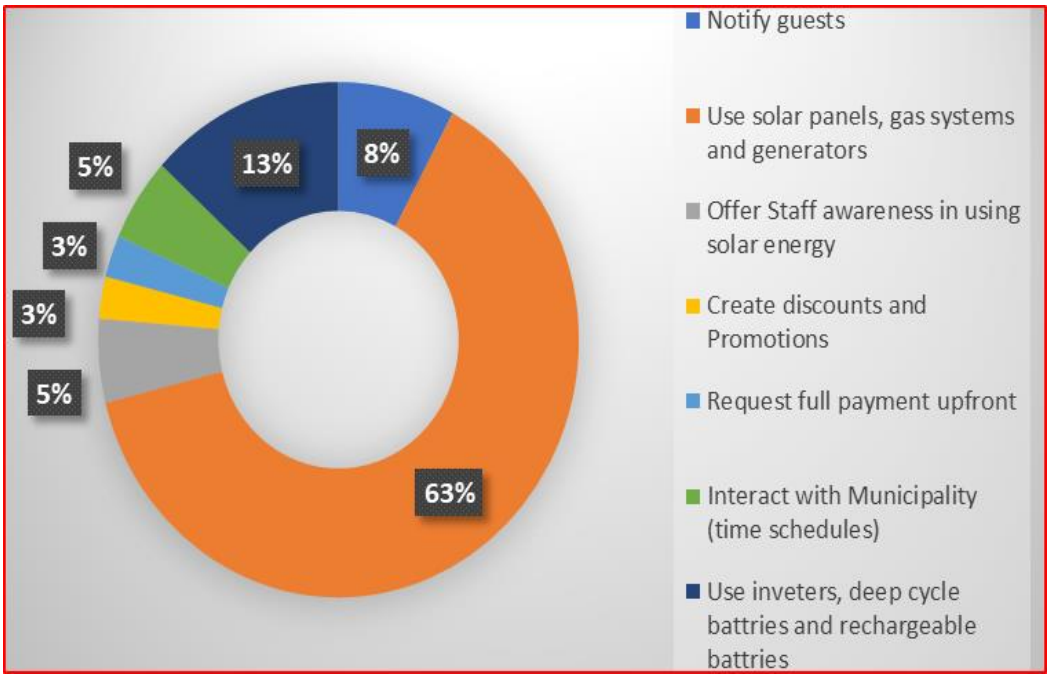


Figure 4-7: Strategies that B&B's and Guesthouses have used to limit the impact of load shedding

Forward-looking responses were indicative of ability to grow from a crisis (Figure 2-5) and be resilience (Figures 2-7 and 2-8) of participants who seemed to have accepted that load shedding was part-and-parcel of doing business in South Africa as Eskom continues to be inefficient, incompetent, corrupt and riddled with mismanagement (Mileham 2021), included: opening windows to allow light to last (E, M, T), install energy saving lights (N, FF), and rechargeable light (Z), electrical back up system (AA), deep cycle batteries (AA), securing alternative sources of power (B, I, CC, DD) such as romantic candle (T, W,), solar panels though expensive (B, C, F, I, J, P, Q, S, X, AA, DD, EE, FF) generators (C, F, J, L, O, P, Q, U, X, Y, BB, CC, DD, GG) and buy diesel in bulk (EE), gas stoves and coolers (F, J, K, W, CC, DD, EE) and installation of 'behind the metre' on-site battery storage (HH) as suggested by the National Academies of Sciences, Engineering, and Medicine (2017) in chapter 2, install wind turbines (J), adjusting business operations to reduce

the effects of load shedding (V, X), and preparations aligned to the load shedding schedule to include outdoor activities that were are not electricity-reliant (S, Y). I think that this is getting worse, so it would be better to diverse into another business (H). Design activities for guests to do for the duration of load shedding (R). Conduct research into what can be done (K).

Figure 4-7 illustrates strategies used by owners and managers to reduce the impact of load shedding on their businesses. The most popular response at 63% (22) was the installation of back-up sources of power such as solar panels, gas systems and generators. This was followed by the use of inverters, deep cycle batteries and rechargeable batteries at 13% (5 respondents). It was interesting that the use of inverters and deep cycle batteries was not mentioned in the literature studied and presented in chapter 2. Respondents (8%, 3 participants) also mentioned the importance of notifying the guests in advance of the time and duration of load shedding to enable them to charge their gadgets. At 5% (2 participants) highlighted the importance of interacting with the local municipality to get load shedding schedules on time. Also at 5% (2 participants) was provision of education and training for staff to effectively use solar energy. With the lowest frequency (3%, 1 participant) were the use of discounts and promotion packages to attract guests and increase occupancy rates, as well as asking guests to pay the full amount upfront.

Different writings on load shedding (Kalil et al 2014; Makgopa and Mpetsheni 2022; Moore 2019) also mentioned installation of solar power panels, solar cookers, generators as some of the strategies to reduce the impact of load shedding. When load shedding started about 15 years ago (Botha 2019; Mileham 2021), it created a crisis for all sectors of the economy. As organisations realised that Eskom was failing to come up with permanent solutions, they were forced to grow internally to deal with the crisis themselves. In chapter 2, Cissokho (2015) stated, every crisis that an organisation goes through, is a turning point that presents an opportunity for growth, and load shedding was seen by Coetzee and Els (2016) as an effective driver of change in organisations (Coetzee and Els 2016) (Figure 2-5). Responding to crises through growth as suggested in chapter 2 is in line with the resilience theory that requires businesses to have higher

knowledge of the crisis at hand, a higher capacity to control their exposures, and learn to react and improvise, businesses had strengthened their reaction toward more typical everyday difficulties like power outages (Brown et al. 2018) as they cannot stay below homeostasis (Figure 2-7) forever. According to Figure 2-7, these businesses have options stay dysfunctional or reintegrate to acquire a new kind of homeostasis where they take advantage of load shedding. Also, these various methods can help guesthouses and bed and breakfasts organise their guest diversions each day to mitigate the effects of power outages. Communication with visitors is essential to ensuring that they are not being caught by surprise. This assists in terms of maintaining the image of the business as customers feel more valuable and see the operation as honest as possible.

This would be a demonstrated ability of a complex system to efficiently adjust to disruptions that jeopardise the system's operation, survival, even progress (Masten et al. 2015; Theron et al. 2016; van Breda et al. 2018). With these various strategies adopted by the entities, it can be acknowledged that load shedding does increase the ensuring business resilience in the face of a breakdown Brown et al. (2018) go through that say such these techniques foster resilience within B&B's and Guesthouses by enabling them to avoid questioning perceptions about their surroundings. Such strategies that can be adopted to include those suggested by Bhide and Monroy (2011), small enterprises like bed and breakfasts or guesthouses may prepare to utilise biomass like fuel wood as stoves, while generators could be kept to lights, modern conveniences, pumps, and connectivity (Umar and Kunda-Wamuwi 2019). It can be deduced that owners and managers need to ensure that those with battery backup should have sufficient capacity to operate a few times during load shedding.

4.3.7 Recommendations to other facilities owners and the local government to deal with the issue of load shedding

- Recommendations to other owners of B&B's and Guesthouses is that they move beyond they move they respond and adapt (Figure 2-7), and move beyond the disruption and dysfunctional reintegration of load shedding to

resilient reintegration (Figure 2-8) of taking advantage of the crisis load shedding to grow (Figure 2-5) by learning from others and from the challenges they face.

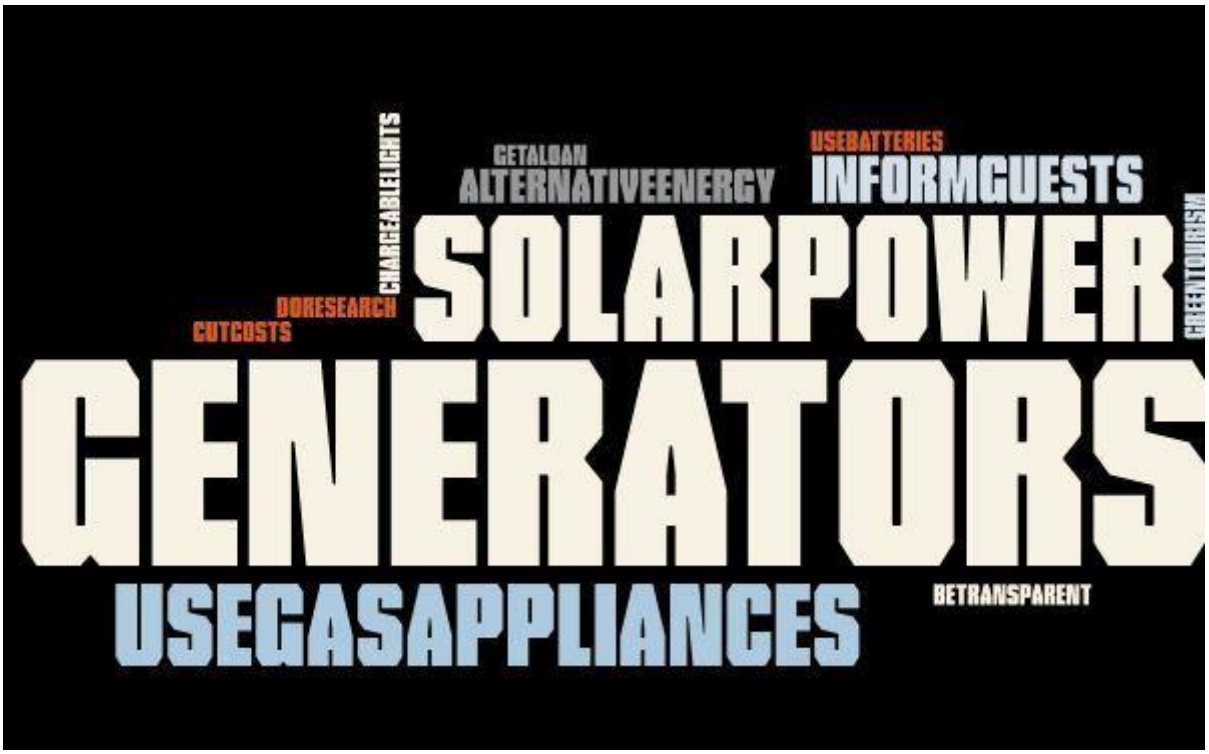


Figure 4-8: Recommendations for other owners

- As suggested in this chapter (Figure 4-8), they should install power back-up system/s that included generators and solar power, (move slightly off the grid). Save money to purchase gas appliances, maintain close communication with local municipalities for load shedding schedules, differentiate between load shedding and other causes of power outrage.
- They should build and maintain close relationships with guest for loyalty, by demonstrating to them that they are doing their best to keep their facilities comfortable despite the national challenge.
- As suggested in the literature review, plan guest activities around load shedding schedule to keep them busy for the duration either with a tour, braai, activities around the pool etc.
- The other qualitative responses was the development of a strategic plan for the staff and customers and do research on how to counter the

negative impact of load shedding. Thus, plan will offer a clear guidance of what should be done during crisis events like the load shedding.

According to Coetzee and Els, (2016) all crises that an organisation faces are pivotal moments that gives a chance for progress. Effective owners and managers use power outages as a learning curve and an opportunity to grow.

4.3.9 Other comments/questions relating to this study

Some respondents expressed fear that they might lose their businesses due to load shedding because of lack of resources and economies of scale. Moore (2019) cautioned that that B&B's and Guesthouses should be aggressively proactive instead of adopting a laid-back approach load shedding. Figure 4-9 illustrates further comments and questions advanced by responded. This general question was asked in order for the researcher to get an oversight of further perspectives and opinions from the respondents that the study might have missed to address.

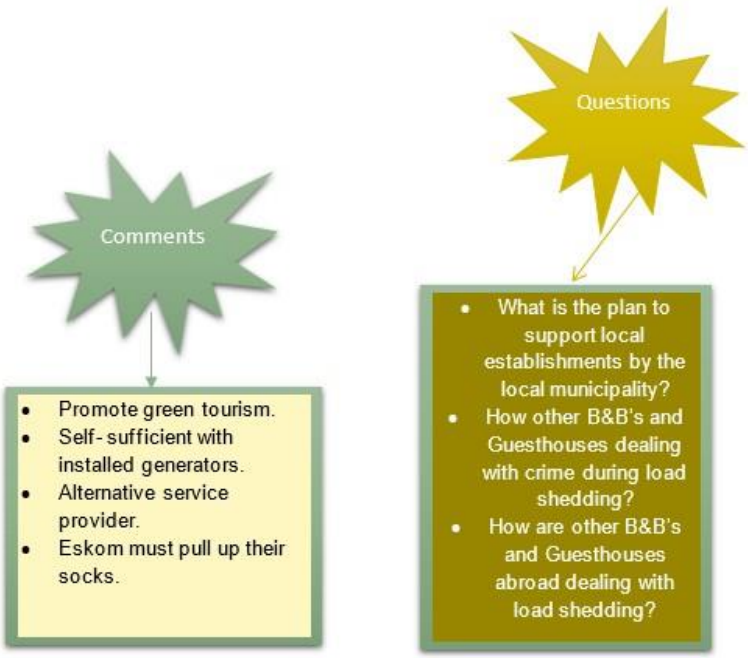


Figure 4-9: Comments and question relating this study

The question aimed to also help the study to reflect on the recommendations for future studies and suggestions to be discussed in Chapter 5 of this research. These additional comments and questions are what Khobai et al. (2017) confirm that severe deficiency in electricity capacity does indeed precipitate frequent load shedding, leading to low business confidence. For instance, guests get affected when electric doors jam due to dying batteries for those with backup systems, cold showers, time gets wasted and the overall morale of the guests and staff gets affected (Steenkamp at al. 2016). Lyndsay Jackson of Guest House Association of South Africa, stated that costs are compounded by having to purchase extra linen in the event that laundry cannot be done, installing gas cookers (Reinstein 2014). While events hosted at the B&B's and Guesthouses venues like weddings, and parties which are popular pastimes of most Ghanaians became more costly and brief because organisers had to rely on the use of generators (Moore 2019). Furthermore indicate load shedding has affected the very fabric of society. It caused theft and robbery to increase, which resulted in people being unwilling to leave their homes at night as criminals take advantage of darkness. Respondents had comments and questions highlighted in Table 4-1 are also linked to the overall study.

Table 4-1: Comments and questions for the study

Comment/question	Link to overall study
"Keep water in containers start using gas for stoves, heaters and geyser use brooms instead of hoovers,"	Forward thinking though labour-intensive (HH)
"At this stage I believe we are all well prepared for load shedding in that some of the larger establishments have been able to become self-sufficient with installed generators."	Forward thinking and resilient (GG)
"How are other B&B's and Guesthouses handling different special events while coping with the load shedding in other parts of KwaZulu National and other provinces?"	Implications for further research (DD)

"What are the plans of the KwaZulu Natal tourism and hospitality department in ensuring that local establishments are supported in events like load shedding?"	Responses can be found in the literature review, that this is a common problem for developing economies (CC)
"How are other B&B's and Guesthouses dealing with crime during load shedding, more like ensuring the safety of their guests and stealing of business equipment from thieves?"	Implications for further research (AA, Q and R)
"The country should have an alternative service provider to share costs with Eskom rather than to have small businesses closing down due to impact of load shedding."	Implications for further research (Y)
"I think the Eskom needs to pull up their socks and provide better services, we can't go on this long. We are at risk of losing our business."	Defeatist attitude of an owner who has stayed below the homeostasis level (U, T, R, O, N, L, G and F)
Promote green tourism and be self-sufficient by getting off the grid and using greener sources of power.	Forward looking, illustrative of growth from a crisis and being resilient (M, E and A)

4.4 CONCLUSION

This chapter was done to respond to aim if study which was to investigate qualitative impacts of load shedding on selected formally registered B&B's and Guesthouses in area of Pietermaritzburg. The study further aimed to determine the strategies used by the owners to reduce the impacts of load shedding. As per the literature studies (chapter 2), load shedding has a detrimental effect on most B&B's and Guesthouses in developing economies, including South Africa. This theoretical finding was supported by empirical findings in this chapter. This chapter demonstrated that the negative impacts of load shedding were not only quantitative and financial, but also qualitative. Despite this, it was discovered how some owners have been proactive to ensure the resilience of their businesses, while others have remained at the disruption stage (Figure 2-7). Even while these various measures helped to limit certain power shedding-related owners may

accomplish more if adequate financial resources were accessible. It was also interesting to find that most of the responses they gave aligned with those found in literature. A few responses such as the duration and frequency of load shedding, and political interference seemed to be unique to the South African situation.

The next chapter focuses on the findings, conclusion, contribution of the study and areas for further research. Chapter 5 was used by the researcher to discuss the theoretical and empirical findings of the study in alignment with the research objectives, forward recommendations, and conclude the study.

CHAPTER 5

FINDINGS, RECOMMENDATIONS, CONTRIBUTION AND CONCLUSION

5.1 INTRODUCTION

The previous section addressed and evaluated evidence acquired through semi structured interviews comprising managers of Pietermaritzburg B&B's and Guesthouses. The evidence obtained through organized interviews was firstly arranged, evaluated, and then analysed. This chapter uses the findings to answer the main research objectives of the study. McCombes (2019) states that the purpose of the concluding chapter in dissertations is to answer the main research question, summarise and reflect on the whole project, show new knowledge being contributed and make recommendations for future work on the issue. In addition, Edit Age Insights (2019) advises that this chapter should restate the research problem, reiterate the key points of the project, explain the relevance and significance of the project and make a call to action or future direction.

In line with their advice, this chapter starts by restating the research problem and research objectives that the findings are aligned to. It presents key theoretic findings and empirical findings. Furthermore, the chapter offers possible recommendations based on the findings and states the contribution of the study to the academic field. Limitations encountered by the researcher are also explained as well as suggestions of further research on the area of load shedding and tourism accommodation establishments that arose from the findings but were not addressed by the study. The problem addressed by the study was the issue of electricity load shedding in South Africa, the impact on selected formally registered small tourism accommodation establishments (B&B's and Guesthouses) and survival strategies with specific reference to the area of

Pietermaritzburg, KwaZulu Natal. The following research objectives were used to provide direction and scope for the study. They were a translation of the aim into operational statements and show how the overall research aim would be realised (Abdulai and Owushu-Ansah 2014).

- To determine the extent of load shedding or rolling blackouts worldwide through literature review.
- To determine the qualitative impacts of load shedding on selected formally registered B&B's and Guesthouses in the area of Pietermaritzburg.
- To establish the strategies used by the owners of selected formally registered B&B's and Guesthouses in the area of Pietermaritzburg to reduce the negative impacts of load shedding.
- To make recommendations on strategies to counter the negative impacts of load shedding.

5.2 FINDINGS ALIGNED TO OBJECTIVES

As stated in the introduction, the findings were aligned to the research objectives and divided into theoretical and empirical findings.

5.2.1 Objective 1: To determine the extent of load shedding worldwide through literature review

Theoretical findings

Emanating from the literature of the study, load shedding does not affect the developing countries like South Africa but also developed states from the North America, Europe and even China. From the international findings the extent of load shedding can be traced back from the year 2000 due to power demand that couldn't meet the overall number of populates resulting to blackouts in areas like California. As discussed in chapter 2, the study found that the World Bank ranked Pakistan, Nepal, Bangladesh, Lebanon, Papua

New Guinea, Iraq, Yemen, Nigeria Central African Republic, Benin, Niger the top 10 countries on the regularity of power outraged and South Africa number 94 out of 132 countries. In Pakistan urban areas experienced load shedding of between 10–12/14 hours, while in rural areas ranged from 16–18/20 hours. Ramachandran et al. (2018) illustrated that South Africa ranked second from the bottom with an average of 1.2 power outrages of 2.3 hours duration per month with Central African Republic ranking the highest at 24.0 number of power outrages per month of 6.4 hours duration. Similarly, Blimpo and Cosgrove-Davies (2019: 19) indicated that the proportion of firms experiencing outages was higher in the sub-Saharan Africa (78.7%) than in any other region worldwide. While the situation seems bad for South Africans, it is better when compared with other countries. Still, the equilibrium is disturbed, especially when losses and other challenges are considered (chapter 2). It is clear that the impact of power shortages is greater for poorer economies with limited resources to spur recovery and adaptation (Andersson and Ledogar 2008; Ledogar and Fleming 2010).

Empirical findings

The study found from all the participants that load shedding in the area of PMB indeed took place but varied in according to the timetable/schedules as well as frequency from various parts of the area that affected the establishments in different occurrences. Furthermore, the scheduling of the load shedding times was said to be arranged in busier times and Eskom would make announcement about the length of the blackout via TV, radios or even newspapers. To be precise, the majority of the respondents indicated that blackout occurred 5 days a week for duration of 2 hours, followed by frequency of twice a day and length of the load shedding would be from 2-3 hours. Then others revealed the blackouts lasted within 2-4 hours in every time and lastly 5 hours duration happening sometimes.

This finding supports the study conducted by Ramachandran et al. (2018) in Eswatini. The authors reported that the unpredictability of blackouts are resultant of an increase in power consumptions ranging from power outages 3.6 times a month, averaging 3.5 hours in total. The study discovered that as much as the area of PMB has encountered the issue of load shedding but the severity is not as bad as compared to other developing nations.

5.2.2 Objective 2: To determine the impacts of load shedding on selected formally registered B&B's and Guesthouses in the area of Pietermaritzburg

Theoretical findings

The impacts of load shedding were divided into global quantitative and qualitative and national quantitative and qualitative impacts. A study conducted by Shuai et al. (2018) in China found that a loss of about 8000MW of power translated to a total loss of $60 million. In a study conducted in Finland Küfeoğlu (2015) found total losses due to power outrages exceeded €18 million in 2011. Similarly, Schmidthaler and Reichl (2016) found that power cut for just one day across 266 European regions cost the economy more than €1.5 billion. In Pakistan, Muhammad (2015) discovered that the economy lost over $3.8 billion in 2009 due to power outraged and an estimated $1.3 billion worth of exports. A total accommodation output loss of 12% to 37% was lost in New Zealand due to load shedding (Shahbaz 2015). A study conducted by the World Bank in 2012 on quantitative impacts of unsupplied electricity showed that Nigeria lost 65%, Gambia lost 55%, Ghana lost 49%, Senegal lost 41% and Mali lost 39% (Oseni and Pollitt 2013: 3). As a power-dependent growth sector, tourism faced unprecedented challenges due to power cuts resulting in the sector's contribution to GDP dropping from US$2.5 billion in 2012 to US$2.1 billion in 2014 (Dogbevi 2015; Moore 2019). Sichone et al. (2016) noted that in some Guesthouses and B&B's in Zambia power shortages resulted in some 5 000 workers being laid off due to output reduction and rising costs of providing alternative sources of power.

As the industry and accommodation establishments become rapidly more dependent on electricity, processes, value chain and networks become more complex and interdependent (Royal Academy of Engineering 2014). Power cuts lead to low business confidence (Khoba et al. 2017) caused by shut down of key operating systems such as air conditioning, lights, computer networks, cooking and refrigeration systems and elevators. Indirect losses include uncertainty, fear of the dark, opportunity cost, knock-on effect, morale, riots due to loss of confidence in local governments and quality of product or service being lowered because of spoilage of materials or poorly functioning equipment (Raza et al. 2020). Load shedding can result in withdrawal of investments, destruction of equipment and appliances, death due to criminality, spoilage of perishable goods,

decreased productivity, increased operational cost, increased complaints, overall decrease in customer satisfaction and negative effects on the very fabric of society such as increased robberies, theft and people not willing to leave their homes at night (Moore 2019). Scott et al. (2014); Moyo (2012) cited the shortened life span of especially SMEs, whose resilience against load shedding was limited.

Pombo-van Zy (2020) estimated the overall cost of load shedding over the past 10 years to R338 billion. Khobai et al. (2017) estimated the cost of load shedding between R15 million and R20 million in 2015 for every 5 hours of power out. Ateba et al (2019) estimated the losses of 10 hours of blackouts per day for 20 days a month to R20 billion. Stage 2 load shedding costs the economy an estimated R40 billion per month. Ateba et al. (2019) Jika and Skiti (2020); Brown (2020) reported that the cumulative costs of 530 hours in 2019 cost South Africa between R59 billion and R118 billion. Staff Writer (2020) agreed that load shedding reduced the country's GDP by 0.3% in 2019, 0.8% in 2020 possibly a further 1.3% in 2021. Instinctif Partners (2020) cite Moody's revisited growth forecast of 0.4% due to the crippling effects of power outraged for SA GDP following a 2019 GDP reduction of 0.3% (an equivalent of R8.5 billion of real GDP).

Empirical findings

The study findings revealed that the majority of B&B's and Guesthouses in the PMB area encounter various impacts from the occurrence of the load shedding. These comprises of losing money that are not anticipated due to purchasing of equipment's to help the business stay afloat. Others faced a decrease on number of guests to book reservations and stay visits profits generation was lost along with damage of stock notably food that got spoilt due to not being properly stored. Furthermore, the resultant of blackouts led to damages to appliances, customers having had enough of excuses from the owners and managers, concerns about brand damage and guests afraid of increased crime rate due to long hours of darkness.

The perishable nature of tourism offerings means that B&B's and Guesthouses are not able to store their services for consumption at a later stage once the guests leave, which becomes a lost opportunity. Load shedding results in the multiplier effect of reduced productivity is fewer sales and exports, which ultimately reduces tax revenue collection for SARS imbalance between supply and demand, price hikes and more suffering especially in already poorer communities. Visitor experience is affected because smaller generators tend to be noisy and irritating, however, they are what these businesses can afford as they are small with limited financial muscles. The use of candles carries a lot of risk (as they may burn everything down) and when the electricity comes back on, the surge often causes electrical equipment and appliances to blow, meaning that owners incur additional losses. Guests get affected when electric doors jam due to dying batteries, cold showers, time gets wasted and the overall morale of the guests and staff gets affected and load shedding affects the manner in which the business is conducted.

Findings from the study additionally found that load shedding disrupted their staff members working hours in such a way that inconsistency of clock-in times affected the operations. These were the resultant of being late due to traffic congestions. Staff morale was impacted along with a need for additional shifts to avoid lesser salary. While others had to sit and do nothing until the power is back. The establishments were forced to cut costs by reducing staff salaries and even letting go of others for operational survival. Frustrations were experienced by staff members due to the traditional way of doing guests bookings/reservations instead of using computer. Lastly, the businesses image became tainted as staff would not wear their uniform due to unable to iron them as a resultant of power outages. Lastly the study findings on the impacts discovered that load shedding impacted the guests' trust towards the establishments as not enough back-up, while those using generators received complaints about its noise. Guests would get bored during load shedding as no Televisions were working while others get frustrated due to lack of network signals preventing them to make business calls.

These findings are supported by a study from Kwortnik (2006), who declared that the unavailability of back-ups tools for the usage of cooling devices, guests room brightness, web servers, kitchen and refrigeration equipment, and elevators which are among the critical operating systems will have detrimental effect to the business. Also, Moore (2019) agrees that blackout effects include lower productivity, higher operational costs, higher complaints, and general decreasing customer satisfaction.

5.2.3 Objective 3: To establish the strategies used by the owners of selected formally registered B&B's and Guesthouses in the area of Pietermaritzburg to reduce the negative impacts of load shedding

Theoretical findings

In chapter 2 Junfri et al. (2019) argues that a resilience framework focuses on vulnerability and adaptability analysis, identifying and prioritising resilience enhancement strategies, cost/benefit analysis and applications of the enhancement strategies, which is what owners of B&B's and Guesthouses in the area of Pietermaritzburg had to do to resourcefully adapt to the phenomenon of load shedding. In chapter 2 Kwortnik (2006);

Moore (2019); Raza et al. (2020); discovered that B&B's and Guesthouses as small businesses do not have the financial muscle that big businesses have to adapt to the phenomenon. There were suggestions that countries had to consider using alternative sources of power such as solar photo-voltaic (Khalil and Zaidi 2014), hydro-power, thermal power and wind which would be greener sources of energy (Higham 2020), and also allow competitors to enter the industry. Other strategies included use of generators, biomass, gas, paraffin (making the city move backward) and planning of outdoor activities (sightseeing, games, braais, beach activities, game drives, and other) according to the load shedding schedule. However, load shedding does not only get scheduled for day time as per Figure 2-6, while outdoor activities would require some lighting for the safety of the guests and the challenges experienced and losses incurred would not all be solved through outdoor activities. The National Academies of Sciences,

Engineering, and Medicine (2017) suggested that state emergency planning authorities should incentivise installation and oversee a more regular and systematic testing of backup power generation equipment especially at critical facilities. They further argue that in every state (province in the case of SA); the governor (premier in the case of SA) is the ultimate authority responsible for overseeing disaster recovery and the mobilisation of provincial assistance. In chapter 2 there were suggestions to view load shedding as a way to (Cissokho 2015; Coetzee and Els 2016) growth and change companies such as B&B's and Guesthouses as they deal with load shedding and be (Fritsch and Poudineh 2016) adaptive to business environmental challenges by (Bhide and Monroy 2011; Khalil and Zaidi 2014; Laher et al. 2019; Steenkamp et al. 2016) use of alternative sources of energy.

Empirical findings

The study findings found that to reduce the negative impacts of the load shedding the majority of the PMB B&B's and Guesthouses uses solar panels, gas systems and generators. While others utilise the communication strategy to notify guests before scheduling a visit, and to prevent disappointments from the guests, a full payment in advance method is also used when making a reservation. Others offer discounts on reservations, and also make use of the schedules obtained from the municipality to help them plan in advance. Other strategies comprise of switching off the electricity during the day by using day light sunlight, additional rechargeable lights are also used together with green tourism to reduce electricity demand. These findings agree from those of Moore (2019); Khalil and Zaidi (2014) that the tourism sector consumes the largest power and indeed suffers from burden of blackouts.

The report by Msunduzi Municipality (2020) agrees with the participants on the usage of communication of schedules with local municipalities as a way of communication to avoid having guests surprised when blackout occurs. Also, SATSA (2021) advises B&B's and Guesthouses to store sufficient battery backup that will assist during power outage. And it's of vital importance that managers of these establishment to make plans for guests to do during load shedding like sightseeing, ecotourism activities, drive games, beach activities etc. Some participants thought that preparation and scheduling activities that do not require

electricity for the duration of load shedding have helped reduce the stress associated with power cuts on guests.

5.2.4 Objective 4: To make recommendations on strategies to counter the negative impacts of load shedding

The recommendations that follow are based on both theoretic and empirical findings as presented in this chapter.

- On a country scale, both the national and provincial governments should be involved in coming up with strategies to deal with the phenomenon of load shedding through encouraging competition in the industry which would help deal with the inefficiencies of the monopolistic ESKOM.
- Before the issue of competition is deal with, the government (national and provincial) should incentivise small business users to install backup systems for business continuity and resilience.
- At the city level, a working relationship with the provincial department of tourism and hospitality to assist in the support that would help in ensuring that an establishment does not reach the stage where they need to shut down due to financial losses (which results in decline in GDP and employment rate). This will also help them form support and benchmarking groups on how to reduce the impact of load shedding on their small businesses.
- On a business level, B&B's and Guesthouses should take up insurance against power outrage damage for all electrical appliances. While this may not be the solution to the problem, it can help improve their resilience and sustainability.
- Guesthouses and B&B's should alternative power source that can sustain the

  B&B's and Guesthouses during load shedding such as 'behind the meter' on-site battery storage, back-up generators, solar panels, gas lamps and stoves, firewood and charcoal.

- As suggested in both the literature review and interviews, it is important to take note of the load shedding schedule, share it with the guests and plan outdoor activities if their area is scheduled during the day.

Every crisis is an opportunity to learn and grow as stated by Greiner (1972) in chapter 2. Chapter 2 also discusses resilience, seen as the capacity to study a shocking and destabilising situation and timely make plans for recovery and adaptive behaviour. Resilience is the ability of B&B's and Guesthouses to bounce back from disruptions caused by load shedding (Jufri et al. 2019), anticipate and plan to absorb the effects of potentially hazardous phenomena in a timely and efficient manner (Intergovernmental Panel 2012). The recommendations suggested by this study are meant to improve the resilience and sustainability of these small businesses in the face of potentially crippling power load shedding.

5.3 CONTRIBUTIONS OF THE STUDY

The contributions of this study come in the form of recommendations based on empirical findings. B&B's and Guesthouses should take up insurance against power outrage damage for all electrical appliances and loss of perishables. Owners should install inverters and deep cycle batteries. Owner and managers should educate senior staff members to closely monitor the schedule for load shedding and switch off all appliances, disconnect them from socket or install surge protectors to prevent damage caused by power surges. Owners and managers should plan meals and teas according to the load shedding schedule. Guests should be reminded a few hours prior to the start of load shedding to enable them to recharge their gadgets and be able to use them for the duration of load shedding. Guests should be informed on booking that the area experiences load shedding episodes (schedule shared) and their duration to enable them to come prepared. This will alleviate the stress of explaining on the owner or manager. Guests could also be informed about the activities planned for such periods during their visit. This might have cost implications for them, so they should be given options. Rechargeable lights can be used in instances where load shedding takes place at night and very room should be equipped with such.

Furthermore, electricity supply should be decoupled with politics through allowing other service providers to compete with Eskom as a state-owned enterprise (SOE). Clearly innovation in the supply of greener sources of energy is required. The government should make funds available to import and adapt sources such as wind power to the South African situation and the government could also help subsidise installation of solar panel for SMEs such as B&B's and Guesthouses.

5.4 LIMITATIONS OF THE STUDY

The research is a case study design conducted in the location of Pietermaritzburg and the results were obtained in the region of KwaZulu-Natal, they cannot be extrapolated to the broader nation's B&B's and Guesthouses. Studies in other areas were covered through the literature review. It is therefore worth noting that the research is based on only the B&B's and Guesthouses, and in a nutshell, the findings cannot be generalised to other hospitality groups like hotels and lodges as they are bigger, more resourced with larger economies of scale. The views of the employees and guests from these establishments were unfortunately not covered because only owners and managers (where owners were not available) formed part of the study and was the responsibility of the researcher not to put the staff at risk. The study was also cross-sectional in design, meaning that data were collected at a given point in time and trends could not be established. However, the literature reviews chapter made up for this as it covered studies conducted at different points.

The study focuses on the qualitative impacts of load shedding. Quantifiable data on impacts of load shedding were not covered because the pilot study proved that it was sensitive information that owners and managers were not willing to share. Due to the restrictions of the current pandemic (Covid-19), the researcher encountered challenges of conducting various face-to-face interviews, but Covid-19 rules and regulations were followed by the researcher. The researcher sanitised on arrival, social distancing was observed during interviews and facemasks were not removed, which in some way interfered with the communication process.

5.5 CONCLUSION

This section contains an in-depth examination of the research outcome, conclusions, and recommendations. These discoveries, conclusion, recommendations and contribution of the study were discussed relating to the research objectives and general aim of the study. Grid failure, power outrages and load shedding were a global phenomenon occurring in both developed and developing countries. The study discovered that there is a difference between them because of the causes. Grid failure as experienced in developed countries may be caused by storms, vegetation and other natural disasters, and they therefore tend to take longer to fix. In developing countries such as the Middle East, North Africa and Southern Africa the main cause of rolling black outs or load shedding was shortage the of supply due to population growth and growing demand. Other causes were linked to management inefficiencies.

As the study discovered, the load shedding phenomenon was not about to disappear in South Africa due to ageing infrastructure, demand exceeding supply and inefficiencies. While government and power and energy industry intervention is critical, it remains imperative for owners of B&B's and Guesthouses to invest in alternative sources of energy and implement strategies (discussed in chapters 2, 4 and 5) for the resilience and sustainability of their small businesses.

5.6 AREAS FOR FURTHER RESEARCH

Based on the literature review and information gathered from the empirical study, the researcher makes the following recommendations for future research.

- The researcher is of view that future studies could be conducted in specific hospitality industry like hotels, bars, restaurants, such that the results thereof will have a more defined context. This will provide opportunities to conduct the study again and include in-depth specific areas within the hospitality industry that were not included in this study as this will provide more holistic results.

- In the same vein, future studies could include other research methods such as quantitative and the mixed-method that were excluded in this study. A quantitative approach could be adopted in future studies as it enables the capturing of objective (quantitative) impact of load shedding.
- Again, the studies may incorporate the views of employees and guests in the hospitality industry since the current analysis paid attention to managers. Thus, will allow for an in-depth of a balance data that will offer insight of how all affected parties during the load shedding period.
- Future studies can investigate the effectiveness of the strategies used by the B&B's and Guesthouses during the period of load shedding. Such research will assist the establishments to choose best alternatives for continuous operation during this period while saving on costs in due time.
- Since the PMB managers raised a question/suggestion for Eskom to partner with another power energy company in supplying electricity. Other studies can look at possible ways of pursuing this relationship, whether it has been done before even by other countries facing same impacts or doing well in handling the load shedding occurrences, its success and weaknesses. Thus, will help in looking for new angle for the enterprise other than continuously requiring the government to financially supply it for money while the issue of load shedding still remains.
- How are other B&B's and Guesthouses handling different special events while coping with the load shedding in other parts of KwaZulu and Nationally?
- How are other B&B's and Guesthouses dealing with crime during load shedding?
- It is also important to conduct studies on how B&B's and Guesthouses dealt with and survived the double blow of load shedding and Covid-19 related lockdown.

Lastly, for provincial governments and local municipalities to formulate working plans with each industry stakeholders and investors that directly deal with load shedding under their jurisdictions. A plan that offers a guidance on what and how the businesses should handle it and who they are expected to receive their support and incentives from and various recommendations of workable ways to

the management of the load shedding. In 2021 the Council for Scientific and Industrial Research (CSIR) argues that an ambitious commitment to building 5GW of renewable energy per annum for decades was urgently required (Swilling et al. 2021).

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APPENDICES

APPENDIX A: LETTER OF INFORMATION

Thank you for taking your time to read this letter. My name is Zwelithini Nhlosenhle Tembe This letter accompanies an interview guide that is used to collect data for the completion of a Master's Degree in Management Sciences (Hospitality and Tourism).

Title of the Research Study: The impacts of load-shedding on selected formally registered Guesthouses and B&B's in Pietermaritzburg: Survival strategies.

Principal Investigator/s/researcher: Zwelithini Nhlosenhle Tembe

Co-Investigator/s/supervisor/s: Professor DC Hlengwa

Brief Introduction and Purpose of the Study: The tourism and hospitality as a multisectorial industry has also been directly and indirectly adversely affected by load shedding. Steenkamp, February, September, Taylor, Hollis-Turner and Bruwer (2016) posit that the health and viability of the tourism and hospitality industry is imperative for the stimulation of national economic growth, while Mandina & Kurwiravamwe (2016) argue that service failure contributes to customer complaints, negative publicity and litigations as organisations fail to meet customer expectations.

The study will employ qualitative methods to data collection and analysis because of the nature of the research objectives that the study seeks to satisfy. Qualitative data will be collected from the interviews with owners and management of selected Guesthouses and B&B's in the area of Pietermaritzburg.

The purpose of this study is to investigate qualitative and quantitative impacts of load shedding on selected formally registered Guesthouses and B&B's in area of Pietermaritzburg. Furthermore the purpose of the study is to determine the strategies used by the owners to reduce the negative impacts of load-shedding.

Outline of the Procedures: Responsibilities of the participant, consultation/interview/survey details, venue details, inclusion/exclusion criteria, explanation of tools and measurement outcomes, any follow-ups, any placebo or no treatment, how much time required of participant, what is expected of participants, randomization/ group allocation.

Risks or Discomforts to the Participant: None anticipated.

Reason/s why the Participant May Be Withdrawn from the Study: None
Remuneration: None

Costs of the Study: Will be borne by the researcher.

Confidentiality: The Company that has given the researcher permission to collect data on their premises. Their names will be disclosed with their permission. The names of the manager and employees in the study will participate not be disclosed. The questionnaires do not require for participants names. Data will be aggregated during presentation and analysis, so the responses cannot be linked to the respondents.

Research-related Injury: None anticipated.

General:

Potential participants must be assured that participation is voluntary and the approximate number of participants to be included should be disclosed. A copy of the information letter should be issued to participants.

APPENDIX B: CONSENT LETTER

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: _____,
- I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

Full Name of Participant **Date** **Time** **Signature/Right Thumbprint**

I, Zwelithini Nhlosenhle Tembe herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

Zwelithini Nhlosenhle Tembe

Full Name of Researcher	Date	Signature
Dr DC Hlengwa	15 March 2021	
Full Name of Witness (If applicable)	**Date**	**Signature**
N/A	N/A	N/A
Legal Guardian (If applicable)	**Date**	**Signature**

Please note the following:

Research details must be provided in a clear, simple and culturally appropriate manner and prospective participants should be helped to arrive at an informed decision by use of appropriate language (grade 10 level - use Flesch Reading Ease Scores on Microsoft Word), selecting of a non-threatening environment for interaction and the availability of peer counseling (Department of Health, 2004)

If the potential participant is unable to read/illiterate, then a right thumb print is required and an impartial witness, who is literate and knows the participant e.g. parent, sibling, friend, pastor, etc. should verify in writing, duly signed that informed verbal consent was obtained (Department of Health, 2004).

If anyone makes a mistake completing this document e.g. wrong date or spelling mistake a new document has to be completed. The incomplete original document has to be kept in the participant file and not thrown away and copies thereof must be issued to the participant.

References:

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APPENDIX C: INTERVIEW GUIDE

Dear Interviewee

You are invited to participate in a research project conducted for the purposes of completing a Master of Management Sciences (Tourism/Hospitality) Degree at the Durban University of Technology. The aim of this study is to investigate qualitative impacts of load shedding on selected formally registered B&B's and Guesthouses in area of Pietermaritzburg. The study further aims to determine the strategies used by the owners to reduce the impacts of load shedding.

- Your responses will be treated confidentially and you will not be identified in person based on the answers you give as a consolidated view of all responses will be reported.
- Your participation in this study is very important. You may, however, choose not to participate and you may also stop participating at any time without explaining why and without any negative consequences.
- You have the opportunity to ask questions about the proposed study before signing consent.
- Participation is voluntary and there will be no penalty or loss of benefit if you decide not to take part.
- The interview we will conduct with you will take approximately 30 minutes.

Questions

Questions

1. Kindly share with me the history of this business.
2. Please elaborate on the frequency and length of load shedding in this area.
3. If possible, please enlighten me on the losses (guests, stock, financial) that you suffer on monthly bases due to load shedding.
4. How does load shedding affect your, your staff's, your guests' morale?
5. Kindly share your thoughts and feelings about the impact of load shedding on your business and neighbourhood.
6. What are some of the strategies that you have used, plan to use to limit the impact of load shedding on your business?
7. What recommendations would you make to other facilities owners and the local government to deal with the issue of load shedding?
8. Do you have any other questions relating to this study?

Thank you for your participation.

APPENDIX D: MODULE 1 ETHICS CERTIFICATE

TRREE

Zertifikat
Certificat
Certificado
Certificate

Promouvoir les plus hauts standards éthiques dans la protection des participants à la recherche biomédicale
Promoting the highest ethical standards in the protection of biomedical research participants

Clinical Trials Centre
The University of Hong Kong

Certificat de formation - Training Certificate

Ce document atteste que - this document certifies that

zwelithini Tembe

a complété avec succès - has successfully completed

Introduction to Research Ethics

du programme de formation TRREE en évaluation éthique de la recherche
of the TRREE training programme in research ethics evaluation

Release Date: 2021/05/21
CID : M8GsgRI31P

Professeur Dominique Sprumont
Coordinateur TRREE Coordinator

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[REV : 20170310]

APPENDIX E: ETHICAL CLEARANCE LETTER

Institutional Research Ethics Committee
Research and Postgraduate Support Directorate
2nd Floor, Berwin Court
Gate 1, Steve Biko Campus
Durban University of Technology

P O Box 1334, Durban, South Africa, 4001

Tel: 031 373 2375
Email: lawlahad@dut.ac.za
https://www.dut.ac.za/research/institutional_research_ethics

www.dut.ac.za

8 April 2022

Mr Z N Tembe
Department of Hospitality and Tourism
Faculty of Management Science

Dear Mr Tembe

The impacts of load-shedding on selected formally registered B&Bs and Guesthouses in Pietermaritzburg: Survival strategies
Ethical Clearance number **IREC 025/22**

The Institutional Research Ethics Committee acknowledges receipt of your gatekeeper permission letters.

Please note that FULL APPROVAL is granted to your research proposal. You may proceed with data collection.

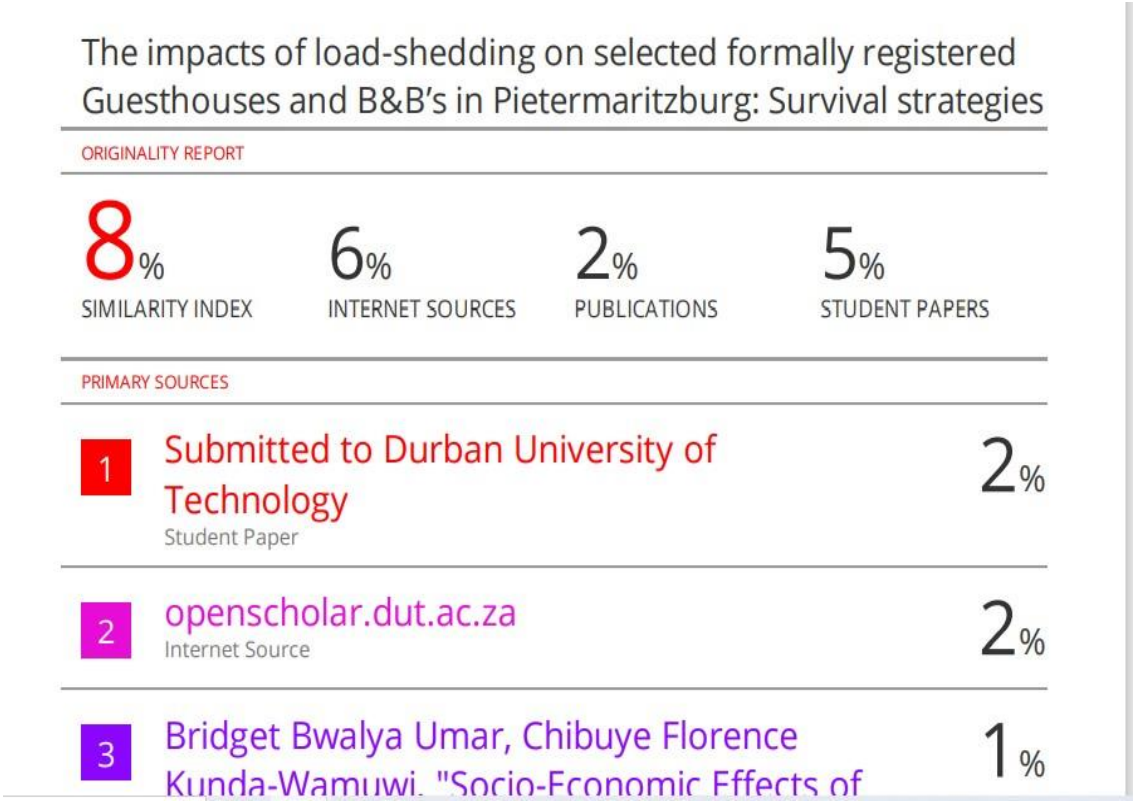
Any adverse events [serious or minor] which occur in connection with this study and/or which may alter its ethical consideration must be reported to the IREC according to the IREC Standard Operating Procedures (SOP's).

Please note that any deviations from the approved proposal require the approval of the IREC as outlined in the IREC SOP's.

Yours Sincerely

Prof J K Adam
Chairperson: IREC

APPENDIX F: TURNITIN REPORT



The impacts of load-shedding on selected formally registered Guesthouses and B&B's in Pietermaritzburg: Survival strategies

ORIGINALITY REPORT

8%	6%	2%	5%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Durban University of Technology Student Paper	2%
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