

# The Influence of Load Shedding on the Productivity of Hotel Staff in Cape Town, South Africa

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*In South Africa, ESCOM is the country's main electricity supplier. Since 2008, Eskom has implemented load shedding on an ongoing basis as a result of insufficient electricity supply to meet the demands of all its customers. Owing to the fact that many organisations across South Africa are dependent on electricity in order to function, previous research studies show that the wide-spread impact of load shedding has had an adverse on the sustainability of many of these organisations. Among these organisations are those based in the hospitality industry – imperative in relation to the stimulation of the national economy; directly related to tourism. Albeit the aforementioned, the sustainability of organisations in the hospitality industry is also heavily dependent on the productivity of their employees. For this research study the influence of load shedding on the productivity of the staff in the hospitality industry was investigated within one particular hotel (Hotel X) based in Cape Town. Empirical research was deployed, making use of a mixed methods approach to obtain both quantitative data and qualitative data from respondents. Stemming from the findings it was found that load shedding did have an adverse influence on the productivity of staff in Hotel X, despite the fact that affordable measures were put in place to mitigate the disruptions caused by load shedding. Moreover, the latter dispensation was found to have an inadvertently adverse influence on the overall sustainability of Hotel X on the long run.*

**Keywords:** Load shedding, ESCOM, hospitality industry, productivity, sustainability, hospitality, hotel

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## 1. Introduction

The Electricity Supply Commission (ESCOM) of South Africa was established in 1923 through means of the *Electricity Act No. 42 of 1992* (South Africa, 2006); their mandate reading as follows:

*To efficiently, effectively and sustainably supply electricity to the people of the country, with the main intent to ensure that the present and future needs and interests of electricity customers and users are satisfied.*

Notwithstanding ESCOM's mandate, in a South African context, load shedding initially came about as a result of ESCOM not being able to adequately predict power consumption patterns of electricity users (both domestic and industrial) since the early 1980s (NVMyPower, 2015) which resulted in events of load shedding and power outages. Though the latter situation can be pinned on many factors, it should be noted that there is a difference between load shedding and power outages:

- **Load shedding:** A last-resort measure which is implemented by a power supply utility whereby the strain placed on an electricity grid is reduced by means of temporarily halting the supply of electricity – purposely limiting electricity supply to users as a result of an over-demand thereof (ESCOM, 2014; City of Cape Town, 2015).
- **Power outages:** When the supply of power or electricity stops due to equipment failure (Cambridge Dictionaries Online, 2016)

To put the problem of load shedding (particularly) in better perspective, previous research studies (Inglesi and Pouris, 2010; Pretorius et al., 2015) make mention that over the years, ESCOM has faced a mammoth challenge in the sense that residential energy consumption dramatically increased by 50% between 2001 and 2007 as a result of the *Free Basic Electricity Policy in 2001* (Electricity (50kWh) is provided to all households at no cost, per month, with concomitant blocked or stepped tariffs for electricity consumption beyond 50kWh (South Africa, 2003))– 50 kWh of free electricity was supplied to poor households, per household, on a monthly basis, since 2001, free of charge. With the increase (An average of 44.1% South Africans were classified as poor between 1996 and 2007 (Odimegwu and Kekovole, 2014)) in the number of poor South African households between 2001 and 2007 (South Africa, 2003) it is of no surprise that the country has been experiencing an ongoing energy crisis since 2007. Apart from the growing number of poor households in South Africa, another factor which directly contributes to the over-demand of electricity is that of illegal electricity connections which claim the lives of many South Africans and causing power outages throughout the country. This is substantiated by a research study (Pule, 2014) where it was found that most illegal electricity connections were extremely dangerous and often resulted in serious injury (or even death), as well as the overloading of the electricity grid.

Notwithstanding the aforementioned, it should also be noted that ESCOM generates 32% of the total energy on the African continent – it is responsible for supplying electricity to users in South Africa, Botswana, Lesotho, Mozambique, Namibia, Swaziland, and Zimbabwe (ESCOM, 2010).

Although the South African government foresaw an increase in local electricity demand in the mid-1990s, there has been a delay to publically fund the actual building of new power supply units (e.g. the Medupi and Kusile power supply units) since 1998 (Department of Minerals and Energy, 1998; Inglesi and Pouris, 2010). These delays were as a result of *inter alia*, a lack of proper implementation of policy, unclear direction from ESCOM's management, and the shortage of public funding (Ismail, 2014; Tralac, 2015). Therefore, it is of no surprise that ESCOM has implemented load shedding since 2008 (Eskom, 2014; City of Cape Town, 2015). In essence, the power supply system has come under severe strain due to maintenance backlogs and a failure to build new power supply units to generate electricity to match economic and social development (Van Der Nest, 2015). According to Tau (2015) the latter dispensation is attributed to the fact that all of the power stations work in harmony meaning that they are dependent on each other, resulting in load shedding when one of the power stations go offline.

According to Tau (2015), South Africa needs round about 29 000 MW of electricity and at present, it is not meeting the amount of energy needed to stay afloat. This view is substantiated by the fact that there are still three power supply units under construction; 70% of work has already been done on Power Supply Unit 5 and about 60% on Power Supply Unit 4. It has also been reported that ESCOM is behind schedule on the construction of the numerous power stations which should have been completed already.

When focus is shifted to organisations which operate in the hospitality industry, research shows that load shedding has had an adverse influence on their overall sustainability. According to Fin24 (2015) and Mbuyazi 2015, both consumers and businesses have difficult years ahead with regard to load shedding since ESCOM proposed their intention to apply for a 9.58 per cent tariff increase (The National Energy Regulator

(Nersa) recently approved a 9.4% electricity hike for 2016/2017 after ESCOM submitted an application to Nersa in November 2015 to recover R22.8-billion, which the utility said it used to avert load-shedding. (Pretorius and Le Cordeur, 2016)). This application was granted, which meant that the overall cost of electricity increased by approximately 24 per cent (Mbuyazi 2015). Notwithstanding the above, when taking into account that load shedding can take place at any time, it also makes life extremely difficult for businesses' management to plan ahead (Fin24, 2015). According to Singh and Ngqulunga (2014), complaints by business owners in the hospitality industry included that they had to pay staff who could not work without electricity.

Stemming from the above, it is clear that load shedding has had an adverse influence on the sustainability of many organisations in the hospitality industry. This is especially the case since most hospitality businesses are directly depended on electricity in order to make ends meet. In addition, among the aspects which load shedding has a direct influence on is that of staff productivity. Therefore, for this research study, the influence of load shedding on the productivity of staff in one hospitality business was empirically investigated.

For the remainder of this paper, discussion take place under the following headings: 1) literature review, 2) research design, methodology and methods, 3) findings and discussion, 4) managerial implications, 5) recommendations, and 6) conclusion.

## **2. Literature Review**

Under this section, discussion take place under the following sub-headings: 1) the current situation surrounding load shedding in South Africa, 2) the influence of load shedding on the South African hospitality industry, and 3) background to the case: Hotel X.

### **2.1. The Current Situation Surrounding Load Shedding in South Africa**

Building forth on the background, load shedding has become a rather frequent occurrence in South Africa. Although South Africa has an array of socio economic objectives, research conducted by Pollet et al. (2015) show that these objectives are not currently being achieved as South Africa is facing issues which include, inter alia: 1) electricity supply challenges, 2) inadequate infrastructure, 3) inefficient regulatory processes, and 4) ineffective leadership by government. Notwithstanding the latter, one of the most important economic growth drivers is that of electricity.

Due to the dire under-investment in the South African electricity supply over the years, it has resulted in a shortage of electricity supply and an increase in the average cost of electricity per unit. In quintessence, the average South African user's dependence on electricity means that any disruptions to the supply of electricity have far-reaching socio-economic implications, such as slow economic, disruptions to essential services such as the South African police services (Pollet et al., 2015).

It should be noted that, load shedding is not only limited to South Africa. For example, Chronicle (2015) reports that Ghana is undergoing an electricity crisis ("DUMSOR") which is reported to have a monumental negative effect on local residents, and industries. Ghana's main electricity supply comes from their three hydro-electric dams, and the causes for their current electricity crisis stems from their hydro-electric generation facilities not functioning properly and/or low water levels.

ESCOM mainly generates electricity through means of coal-powered electricity supply units and nuclear electricity supply units. ESCOM has 10 coal-powered stations namely Arnot, Duvha, Hendrina, Kendal, Kriel, Lethabo, Majuba, Matimba, Matla and Tutuka Power station of which most are found in the Mpumalanga province and one nuclear power station namely the Koeberg Nuclear Power Station situated in the Western Cape (Eskom, 2013). The current state of these power supply units leaves much to be desired as previous research shows that South Africa has an 80% reliance on coal powered electricity (Lehihi, 2015) and that ESCOM's deferring maintenance has put severe strain on the power grid (Corke, 2015). For instance, in December 2005 a bolt was not tightened at the Koeberg Unit One nuclear reactor after it had undergone maintenance, which got loose and caused extensive damage to one of the rotors and resulted in the non-functionality of the entire Koeberg Unit One nuclear reactor (World Heritage Encyclopedia, 2015).

In addition to the above, ESCOM lost  $\pm 220$  MW of power imports from Mozambique due to a technical fault which affected a converter at the Apollo substation in Midrand, mainly due to a valve reactor which overheated (Lindeque and Whittles, 2015). Hence it is of no surprise that South Africa's dependence on this particular electricity supplier is deemed as high risk (Lehihi, 2015). Conservatively estimated, the impact of 99 days of load shedding during 2015 caused a 1.3% decline in South Africa's Gross Domestic Product (Du Preez, 2015). To put the latter in perspective, it is believed that load shedding costed the South African

economy approximately R2.17 billion a day (Nersa, 2015); excluding the impact on investor confidence and social trust (Flanagan, 2015).

## **2.2. The Influence of Load Shedding on the South African Hospitality Industry**

Particularly in the hospitality industry, load shedding has had an adverse influence on relevant business entities. Businesses in the hospitality industry have been impacted as follows through load shedding (The Capital Hotel School and Training Academy, 2015; Von Ulmenstein, 2014). Examples of the latter include:

- Electric door locks cannot be programmed to allow key cards access to hotels.
- Slow response from emergency services if guests are trapped in elevators.
- The stifling of the supply of cold and frozen food.
- The depletion of backup batteries of fire systems
- The halting of fire system operations.

The above issues are placed in better perspective by Muirhear (2014) who states that smaller hospitality establishments are greatly affected by load shedding as the vast majority of these businesses do not have any type of secondary power generating device and/or back-up facility. Moreover Coetzer (2014) posits that the hospitality industry is fearful of load shedding as it has a direct and substantial impact on tourism in South Africa; load shedding is not conducive to stimulate tourism.

When emphasis is placed on the employees based in hospitality businesses, Bearak and Dugger (2008) aver that South African employees' productivity are negatively impacted by load shedding as they cannot be productive to perform their duties as per their relevant job descriptions. It is often difficult for the industry to know which stage of load shedding ESCOM is implementing on a given day, often announcing a stage for the whole weekend, and then amending this with last minute notices. A real life example includes starting off with Stage 3 load shedding on Friday and Saturday, followed by Stage 2 load shedding on Sunday. This type of unreliability of ESCOM and unpredictability of schedules make it hard for hotel staff to prepare for the next day resulting in time being wasted on contingency plans and what then results in low productivity levels (Von Ulmenstein, 2014).

## **2.3. Background to the Case: Hotel X**

For this research study, emphasis was placed on Hotel X which was situated in Cape Town. It employed a total of 108 employees ("Property Manager", "Financial Manager", "HR Manager", "HR Clerks", "Administration Clerks", "Debtors Clerks", "Levy Debtors", "Trainee Levy Debtors", "Security Managers", "Reservation Managers", "Reservations Clerks", "Front Desk Managers", "Assistant Front Office Managers", "Trainees at Front Office", "Trainees", "Receptionist", "Supervisors of Guest Services", "Guest Services Officers", "Maintenance Workers", "Electricians", "Housekeepers", "Housekeeping Assistants", "Room Attendants", "Cleaners", "Porters", "Drivers", "Chefs", "Cooks", "Waiters", "Barmen", and "Interns"). Apart from accommodation, Hotel X also offers guest services (i.e. room service, laundry services and special requests), concierge services, transport services, site-seeing trips, valet parking, fitness facilities, massage facilities and numerous entertainment activities.

## **3. Research Design and Methodology**

This research study was empirical in nature; deemed as case study research (Mouton, 2001). Case study research is a type of research study where a single phenomenon is explored in a natural setting through making use of a variety of methods in order to obtain in-depth knowledge (Collis and Hussey, 2009). In fundamental nature, the case which was researched was Hotel X - the research subjects were all staff members of Hotel X. This research study fell also within the positivistic research paradigm and the interpretivistic research paradigm; both quantitative data and qualitative data were collected from research subjects through means of a questionnaire. The questionnaire which was used comprised of 6 multiple choice questions, 3 yes/no questions, and 8 open-ended questions.

All questionnaires were dissemination of face-to-face, from where all research subjects were approached. Out of the 108 research subjects approached, responses were only received from 50 respondents (46.30% response rate). In addition to the aforementioned, the following ethical considerations were taken into account for this research study (Collis and Hussey, 2009): voluntary participation, privacy and anonymity, knowledgeable consent, protection from harm, and confidentiality.

## 4. Results, Findings and Discussion

Under this section, the results and findings gathered from the collected data are both presented and discussed under the following sub-headings: 1) general findings, 2) the impact of load shedding on staff productivity, and 3) implemented strategies to combat load shedding.

### 4.1. General Findings

Respondents were asked an array of demographical questions in order to “profile” the average respondent. In terms of gender, 46.00% of respondents were male while 54.00% were female, and in terms of position 14.00% of respondents were part of management while 86.00% of respondents were part of operations. When respondents were asked about their home language, 18% said Afrikaans, 70% said English and 12% said isi-Xhosa. Respondents were also asked what their ages were; a summary of the results are shown in Table 1:

*Table 1. Frequency distribution table of respondents' ages*

<i>Value label</i>	<i>Value</i>	<i>Frequency</i>	<i>Percentage</i>
Less than 20 years	1	3	6.00
21 - 29 years	2	16	32.00
30 - 39 years	3	11	22.00
40 - 49 years	4	10	20.00
50-59 years	5	4	8.00
More than 60 years	6	6	12.00
<b>TOTAL</b>		50	100.00

**Source:** Authors' fieldwork, 2015

Stemming from Table 1, it appears that majority of respondents were between the ages of 21 years and 49 years. Otherwise stated, the inference can be made that these respondents mainly formed part of two generations that are characterised as innovative thinkers (Berner and Van Tonder, 2003; Younger, 2005; Hoekstra et al., 2015):

- **Generation X:** a generation that strives towards creativity, informality, self-reliance and independence
- **Generation Y:** a generation that strives towards authenticity, opportunities and gathering wide-based experience

When respondents were asked how long they have worked at Hotel X, 62% indicated that they have worked there for less than 5 years, 26% indicated that they have worked there for between 5 and 15 years, while 12% indicated that they have worked there for longer than 15 years. Lastly, respondents were also asked about their education – 8% had primary education (between Grade 1 and Grade 7), 72% had secondary education (between Grade 8 and Grade 12), and 20% had tertiary education.

Stemming from the above the analogy can be drawn that the average respondent formed part of Hotel X's operations, with less than 5 years' work-related experience, and possessed secondary education, with English as home language; aged between 21 years and 49 years.

### 4.2. The Impact of Load Shedding on Staff Productivity

All respondents agreed that Hotel X was negatively influenced by load shedding (broadly), to a large extent. When respondents were asked whether Hotel X had alternative sources of power only 58.00% (It is highly probable that the 42.00% of respondents who said “no” were employed for a very short period of time at Hotel X at the time of data collection.) said “yes”; examples of alternative power sources identified are summarised in Table 2:

*Table 2. Examples of alternative power sources at Hotel X*

<i>Description of power source</i>
Battery operated lamps in all rooms
Emergency power (for selected equipment)
Gas stove
Generators
Torches (with batteries) in all departments
Uninterrupted power supply units (for certain computers)

**Source:** Authors' fieldwork, 2015

Taking the above into account, respondents were asked about the safety and security procedures which were in place to mitigate the negative influence of load shedding on Hotel X. Apart from having alternative power sources available (see Table 2), respondents provided the following information:

*“Power surge plugs are used for equipment that are used by the front office and administration”* – Respondent A.

*“Security patrols are intensified during load shedding and the stairway is lighted as much as possible”* – Respondent B

*“An emergency lift is operational during load shedding which is connected to a generator”* – Respondent C

*“Emergency lights are turned on when load shedding occurs”* – Respondent D.

*“Pamphlets are handed out to guests with important information on what to do in the case of load shedding”* – Respondent E.

From the above responses it is clear that there were reasonable control measures in place to ensure the safety and security of relevant stakeholders. Although these control measures do not optimally cover all load shedding related risks, they do help mitigate safety and security risks when load shedding occurs.

Even though Hotel X made use of alternative power sources and had both safety and security measures in place to combat risks in the event of load shedding, respondents were asked to expand on the impact of load shedding on Hotel X. The following information was provided:

*“Only one computer is connected to a red plug, so during load shedding there is no productivity and it causes a backlog of work”* – Respondent A.

*“Workloads build up extensively, especially from an administrative side. Not all reservations made can be processed”* – Respondent C

*“We are not able to tend to e-mails, check guest accounts or make and receive phone calls during load shedding since our computers are not plugged into a red outlet (emergency power)”* – Respondent F.

*“My computer is one of the few in the hotel that is powered by a backup generator due to the nature of my work (e.g. deadlines with salaries and certain payments and reports). Load shedding also has an impact on the fingerprint-clock-in-and-out-access-machine, mainly for staff who work over the weekend at an hourly wage”* – Respondent G.

*“Card machines are not working which means that guests should pay by means of cash, which is not always possible”* – Respondent H.

*“I cannot vacuum rooms, meaning that no new guests can be checked in to dirty rooms”* – Respondent I

*“The kitchen is in complete darkness so little food (if any) can be prepared”* – Respondent J

*“The laundry cannot operate at all. No rooms can be prepared with clean beddings”* – Respondent K

Stemming from the above, it appears that load shedding has a direct influence on all operational aspects of Hotel X, as well as the productivity of its staff members. When the operations of Hotel X are disrupted through load shedding it can have a destructive influence on its overall sustainability (the attainment of relevant objectives). Although Hotel X makes use of alternative power sources, it appears that there is very limited alternative power sources made available to all operations.

To understand the impact of load shedding on the productivity of staff members, respondents were asked how exactly load shedding influences their productivity at work. A summary of the responses are provided below:

*“I am unable to do any work”* – Respondent A

*“I cannot provide any service delivery”* – Respondent C

*“I become lazy and it decreases my morale”* – Respondent F

*“I have to spend time on catching up lost time which is not good for my health; I becomes stressed”* – Respondent H

*“I cannot meet my deadlines”* – Respondent L

*“I cannot prepare food quickly enough to keep customers happy”* – Respondent M

*“I must reschedule reservations made which upsets customers”* – Respondent N

The responses above validates the previous inference made that load shedding has an adverse influence on the productivity of staff members at Hotel X. This is especially the case since most operational tasks are delayed and/or cannot be performed by members of staff.

### **4.3. Implemented Strategies to Combat Load Shedding**

Respondents were asked whether Hotel X has implemented relevant load shedding strategies to combat load shedding. A total of 66.00% of respondents replied “yes”, with the following additional answers provided as justification:

*“More emergency power outlets are to be installed”* – Respondent B

*“The security and safety measures put in place (torches, lamps, emergency lights, etc.) are quite helpful”* – Respondent E

*“The Hotel is in talks to get a generators to power the entire hotel and relevant equipment”* – Respondent H

### **5. Recommendations**

The following recommendations can be made to the management of Hotel X after taking the literature review, results, findings and discussions into account: 1) acquire a larger generator or additional generators (whichever is more economic) which can provide electricity to the entire hotel for a period of at least 5 hours, and 2) to implement alternative energy power sources (solar, wind, etc.) in the foreseeable future. Both these recommendations will help serve as long-term preventive measures in relation to the realisation of risks pertaining to load shedding. In the same vein, cost implications will have to be taken into consideration through a thorough cost-benefit analysis.

In the short-term, a more affordable approach to mitigate the risks of load shedding (especially during unscheduled load shedding) will be for Hotel X’s management to make use of portable power supply devices, additional torches, the installation of electricity friendly appliances (with low Wattage) and to install surge plugs throughout.

### **6. Conclusion**

This research study was undertaken to ascertain the influence of load shedding on the productivity of hotel staff in Cape Town at Hotel X. As a clear indication from the literature reviewed, it is evident that load shedding has a negative impact on all businesses operating in South Africa, including those that operate in the hospitality industry. This view was supported by the findings made in this study as most employees in Hotel X (involved in operations) could not properly work around load shedding; almost all staff members were reliant on electricity to perform their daily tasks. Not only did load shedding impact on their productivity, but employee morale was also adversely affected as a result.

Albeit the latter, it was also found that Hotel X’s management did make use of alternative power sources to mitigate the risks associated with load shedding. Even though these alternative power sources did assist with the mitigation of some load shedding related risks to some extent, much more can be done by Hotel X’s management to optimally mitigate these risks, provided that relevant financial resources are available.

### **7. Managerial Implications**

Hotel X’s management should adopt a more diplomatic management operating style in order to incorporate the ideas of staff members before making final decisions (Jamian et al., 2013). This view is justified by the findings where staff members proposed valid recommendations in order to mitigate load shedding related risks (e.g. the installation of more surge plugs, backup power for imperative operations, etc.). Moreover, the overall sustainability of Hotel X also has a direct impact on the livelihoods of staff members hence their inputs will be pragmatic in most cases.

Even if the management of Hotel X does not directly implement the recommendations made above (or the recommendations made by staff members), it is important for them to set a proper tone at the top – the manner in which they plan, organise, lead and control in Hotel X by making use of an appropriate managerial philosophy (driven by core values) and managerial operating style (Bruwer, 2016). This tone at the top will boost the morale of relevant stakeholders and place a solid foundation for relevant risks (including load shedding related risks) to be managed appropriately.

### **8. Limitations of the Research Study and Avenues for Future Research**

This research study had two major limitations: 1) only one hotel (based in Cape Town) was targeted and, as such, none of the findings can be generalised to the broader population, and 2) only internal

stakeholders were approached. It should be noted that this research study was descriptive in nature, falling within both the positivistic and interpretivistic research paradigms – a recent and relevant phenomenon was explored in greater depth within the ambit of one organisation in order to lay a basis for future research studies to be conducted. Furthermore, insights gleaned from internal stakeholders provided the researchers with information in order to understand the internal workings of Hotel X better.

Therefore, considering the above, the following avenues (*inter alia*) are suggested for future research:

- The feasibility of installing alternative power sources in South African hotels.
- The economic sustainability South African hotels to implement alternative power sources.
- The impact of load shedding on the profitability of South African hotels.
- The impact of load shedding on the liquidity of South African hotels.
- The impact of load shedding on the solvency of South African hotels.
- The impact of load shedding on the efficiency of South African hotels.

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