

UNIVERSITY  
OF  
LUSAKA

**SCHOOL OF POSTGRADUATE STUDIES**

**IMPACT OF INFRASTRUCTURE LIMITATIONS ON CONSUMER  
BEHAVIOUR AND E-COMMERCE IN THE ONLINE RETAIL SECTOR OF  
LUSAKA, ZAMBIA.**

A DISSERTATION SUBMITTED TO THE SCHOOL OF POSTGRADUATE  
STUDIES, UNIVERSITY OF LUSAKA IN PARTIAL FULFILLMENT OF THE  
AWARD OF THE MASTER OF SCIENCE IN MARKETING.

**BY**

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## Declaration

I, Eszter Németh, declare that this dissertation titled "IMPACT OF INFRASTRUCTURE LIMITATIONS ON CONSUMER BEHAVIOUR AND E-COMMERCE IN THE ONLINE RETAIL SECTOR OF LUSAKA, ZAMBIA" is my own original work and that all sources and references have been duly acknowledged. This dissertation has not been submitted, in whole or in part, for any degree or examination at any other academic institution.

I confirm that I have complied with the ethical guidelines of University of Lusaka throughout the research process.

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## **Acknowledgments**

I would like to express my deepest gratitude to my supervisor, Dr Judith Charumbira, for her invaluable guidance, support, and encouragement throughout this research. Her insight and expertise were essential in helping me shape this dissertation.

I am also deeply thankful to my family for their unwavering support, patience, and belief in me during this journey. Their encouragement has been a constant source of strength.

Thank you.

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## List of Acronyms

**AI** - Artificial Intelligence

**ANOVA** - Analysis of Variance

**CRISP-DM** - Cross-Industry Standard Process for Data Mining

**DOI** - Diffusion of Innovations

**ICT** - Information and Communication Technology

**MTN** - Mobile Telecommunications Network

**PEOU** - Perceived Ease of Use

**PU** - Perceived Usefulness

**SERVQUAL** - Service Quality

**TAM** - Technology Acceptance Model

**UNCTAD** - United Nations Conference on Trade and Development

**UPS** - Uninterruptible Power Supply

**UTAUT** - Unified Theory of Acceptance and Use of Technology

**ZESCO** - Zambia Electricity Supply Corporation

**ZICTA** - Zambia Information and Communications Technology Authority

## The Abstract

E-commerce has rapidly expanded globally, offering convenience, efficiency, and accessibility to retailing. Despite progress, e-commerce remains a formidable barrier in developing economies like Zambia, where online retailing is proving to be elusive. It examines the influence of infrastructure constraints on e-commerce adoption and consumer behaviour, looking at barriers to enhancing digital commerce ecosystem in Lusaka. What are its prospects? The research investigated how infrastructure deficiencies, such as unreliable internet connectivity, substandard logistics, and frequent power outages, impact consumer trust and satisfaction; to evaluate their impact on e-commerce adoption; and to provide practical guidance for overcoming these challenges. Based on the Technology Acceptance Model (TAM) and Diffusion of Innovation (DOI) frameworks, the research focuses on how infrastructure constraints, consumer behaviour, or adoption rates are linked. This was mixed-methods approach, combining quantitative information from the 150 survey respondents with qualitative insights from eight comprehensive interviews. According to the data, infrastructure deficiencies significantly harm consumer confidence and satisfaction, with 62% of respondents reporting unreliable delivery systems as a significant issue. Unreliable internet connectivity and payment security challenges were among the key impediments to e-commerce adoption. Consumer behaviour was found to be a mediator between infrastructure limitations and adoption rates, emphasizing the importance of trust and ease of use. It concludes that "relatively minor infrastructure problems are needed to encourage e-commerce in Lusaka". Other recommendations include investing in secure internet services, improving logistics and delivery systems, and increasing consumer confidence through the implementation of more secure payment platforms and transparent policies. The implementation of these measures may lead to increased e-commerce, which in Lusaka could boost the economy and enhance consumer satisfaction.

# CHAPTER ONE: INTRODUCTION

## 1.1 Introduction

E-commerce has significantly transformed global trade and consumer behaviour, with online retail sales accounting for 19.5% of total global sales in 2022 (Statista, 2023). Despite this rapid growth, e-commerce adoption remains uneven across regions, particularly in developing economies where infrastructure constraints, digital literacy gaps, and payment security concerns pose major challenges (Molla & Licker, 2005; UNCTAD, 2021). Lusaka, the capital city of Zambia, has the potential for e-commerce growth; however, key infrastructure constraints - such as unreliable power supply, slow internet speeds, and inefficient logistics - have postponed adoption (World Bank, 2022; ZICTA, 2023).

The global increase of e-commerce, as UNCTAD (2021) reports that global e-commerce sales grew by 16% annually between 2017 and 2021, and the world of online shopping on international scale raised interest how popular the online retail sector is among consumers in Lusaka, Zambia and how developed online shopping is, how advanced the technology may or may not be, what are the experiences of the consumers; and considering the infrastructure challenges, how it all makes an impact on purchasing decisions digitally.

The globe has been highly impacted by the rise of e-commerce and yet still growing its influence by the innovation of technology and artificial intelligence worldwide. In regards to that, the capital city of Zambia, Lusaka, has its potential in e-commerce economic growth as well. Molla & Licker (2005) emphasize that e-commerce offers increased market access and cost efficiency in developing economies. E-commerce has a lot to offer regarding business operations and growth in the sector, offering convenience, providing new opportunities, giving accessibility and wide variety of options in the online retail industry. Despite that, reality may be different in case of Lusaka as it is highly limited due to the infrastructure challenges that Zambia must suffer from, for instance because of energy supply constraints. Lusaka's efforts to digitize commerce can be traced back to initiatives such as the Smart Zambia Initiative in 2016, and more recently, the 'Digital Transformation and Change Management Strategy for the Public Service' (2023), which seeks to

modernize ICT infrastructure and enhance service delivery through digital platforms. Despite these efforts, the digital divide persists, particularly in areas like e-commerce, where infrastructure limitations continue to impede growth.

The core problem addressed by this study is the infrastructural deficiencies - such as limited internet access, poor 4G coverage, and unreliable energy supply - that seriously challenges e-commerce adoption in Lusaka.

According to the Zambia Information and Communications Technology Authority (ZICTA), the internet penetration rate increased to 63.1% per 100 inhabitants in 2022. Nevertheless, problems including inadequate road conditions and infrequent power supply still limit the proper functioning of e-commerce in Lusaka. The World Bank's "Accelerating Digital Transformation in Zambia: The "Digital Economy Diagnostic Report" (2020) stresses the requirement for infrastructure upgrades to improve e-commerce and broader economic growth.

Where appropriate consumer behaviour and e-commerce adoption rates are highly dependent on the absence of point of presence, infrastructure and the lack of reliable infrastructure has direct consequences for behaviour and adoption rate of e-commerce, which in comparison to global averages is still comparatively low, which will be discussed in detail. Previous studies by organizations like the World Bank highlight the critical role of infrastructure in digital adoption across developing economies. But the research regarding the implications of such limitations on consumers' behaviour in Lusaka is limited.

Despite the global rise of e-commerce, which has seen a growth rate of approximately 16.5% annually between 2017 and 2021 according to the World Bank, Lusaka's digital economy faces difficult obstacles. These limitations, alongside inappropriate transportation, poor road conditions, and unreliable electricity supply, delay the effective operation of e-commerce in the city and further disrupt operation for online retail businesses. These infrastructure limitations raise vital concerns regarding the reliability of online transactions and the accessibility of digital marketplaces, thereby challenging consumer confidence in the online retail sector. Moreover, studies have shown that up to 60% of consumers in emerging markets cite infrastructure-related issues as a primary barrier to engaging in e-commerce (UNCTAD, 2021), and the UNCTAD Economic Development in Africa Report 2023 emphasizes the critical need for infrastructure improvements across Africa to enhance e-commerce and overall economic development. The lack of reliable infrastructure is

frequently mentioned as a major burden to consumer engagement with digital platforms (UNCTAD). This directly impacts consumer behaviour and the overall adoption rate of e-commerce, which remains relatively low compared to global averages.

Previous studies, such as those by UNCTAD (2021) and the World Bank, emphasize that infrastructure plays a critical role in digital adoption across developing economies. However, there is limited research specifically focusing on how these limitations affect consumer behaviour in Lusaka, presenting a gap that this study aims to fill.

This research aims to dig into the dynamics surrounding the impact of infrastructure limitations on consumer behaviour and e-commerce adoption in Lusaka's online retail sector. Exploring these complexities, the study seeks to shed light on how infrastructure constraints shape consumer perceptions and behaviours in online transactions and purchase. This targeted review will contribute valuable insights that can inform strategic interventions, potentially driving e-commerce growth and enhancing consumer welfare in Lusaka.

### 1.1.1 The Background

The topic of limitation of infrastructure that affects e-commerce adoption in Lusaka has been derived from personal experiences and broad conversations with consumers and business owners. Such conversations reveal some of the recurring difficulties that create a bottleneck to the smooth operation and better acceptance of online shopping within the city. Some of the major problems include slow-speed internet access, poor delivery systems, and pervasive fear regarding payment security breaches, all of which combine to make the experience frustrating and discouraging for the end users while shopping online. The Zambian government has taken steps toward digital transformation, notably through the Smart Zambia Initiative (2016) and the Digital Transformation and Change Management Strategy (2023), both of which aim to modernize ICT infrastructure and enhance digital service delivery (ZICTA, 2022; GRZ, 2023). Despite these efforts, Zambia ranks low in the United Nations E-Government Development Index, with slow progress in e-commerce infrastructure development compared to regional peers such as Kenya and South Africa (UNCTAD, 2022).

**Internet Access:** Accessible internet connection is one of the basic needs for e-commerce. Today there is major obstacle towards e-commerce in Lusaka where internet accessibility has been due to the cost, nature of quality service on offer and limited coverage in certain areas (ZICTA, 2022). Most of the above challenges majorly impact the consumers in low-income neighbourhoods, where access to the internet at mutually affordable costs at high speed is non-existent. In addition, frequent power outages cause disruption on such online transactions and communication thereby lowering trust in digital platforms (Boateng, Molla & Heeks, 2009).

**Delivery Systems:** Ineffective logistics and delivery systems stall the growth of e-commerce in Lusaka. Many such businesses fail to have their products delivered to the customer on time or in good shape at the last mile. It is attributed to an inadequate courier service and comparatively less developed road infrastructures, especially in the non-urban locations of Zambia (Mothobi & Grater, 2020).

**Payment Security and Digital Literacy:** Widespread remain concerns regarding the safety of the online payment system. Most consumers have the fear of giving their financial details over the internet, since they have many fears such as fraud or unauthorized transactions (Nguyen et al., 2020). In addition, very few secure gateways are available to enhance the payment of local banks. This is also aggravated by a largely low digitized population. A significant portion of users lacks the skills needed of going through an online platform such that they face various errors and frustrations and, finally, disengagement from e-commerce (Zhu & Kraemer, 2005).

**Consumer Trust and Satisfaction:** It is true that trust is very important for people to adopt e-commerce, but not much has been done about that in Lusaka. Negative experiences such as delayed deliveries, receipt of damaged or wrong goods, and lack of adequate customer support presence act against repeat purchases. This makes it hard for their consumers to engage with suppliers who have e-commerce platforms, and so most people stay away from e-commerce.

Not only does it affect all the businesses individually, but it also slows the overall growth of the e-commerce sector, creating a vicious cycle in which firms cannot invest in improvements because the demand is limited (Zhou et al., 2007).

**Impact on Market Growth:** These infrastructure-related and systems-related factors question the pace at which e-commerce can expand in Lusaka. Lack of trust coupled with accessibility issues and logistical inefficiencies leading to non-effective using of digital services, limits the ability for e-commerce to attract and retain users. Thus, the market, which is still immature, has several businesses that are unable to scale their operations or obtain enough efficiency to compete favourably against traditional retail outlets. (World Bank, 2021).

Overall, removing the above restrictions will be very important for e-commerce development in Lusaka. Improvements in internet infrastructure, establishment of reliable logistics network, enhancement of payment security, and promotion of digital literacy will attract investments to join the potential of e-commerce development. These would prevent consumer dissatisfaction and mistrust which will limit innovation and slow down digital transformation of commerce within the city.

## 1.1.2 Operational Definitions

### **Infrastructure Limitations:**

These are deficiencies and limitations present in physical and digital infrastructure, which are critical to the efficiency and effectiveness of online retail. Examples include unreliable internet connectivity, insufficient transportation systems, and logistical problems that produce interferences for the functioning of e-commerce transacting and access.

### **Digital Divide:**

Digital divide indicates differential access that people have to new information and communication technology such as reliable internet services. Thus, to Lusaka, it signifies the differences in internet access that might postpone participation in e-commerce.

### **Consumer Trust:**

Consumer trust is the confidence that consumers have in online retail platforms' reliability and integrity.

It is a prerequisite for e-commerce adoption because consumers must feel that their transactions are secure and that goods and services will be delivered as promised.

**Adoption Rate:** Adoption rate is the acceleration and extent to which customers use and incorporate e-commerce into their regular shopping activities. There are several variables which determine the adoption rate of e-commerce platforms in Lusaka such as infrastructure quality, consumer trust, and overall satisfaction.

### **Economic Impact:**

Exploring how infrastructure issues in e-commerce affect Lusaka's economy at a macro level; increased or decreased e-commerce activities would thus be reflected in changes in employment, business growth, consumer spending, and market efficiency.

### **Consumer Behaviour:**

This refers to the actions and decision-making processes exhibited by individuals with respect to e-commerce systems.

Consumer studies could address the extent to which infrastructural limitations would affect purchases, the frequency of online shopping, and the general attitudes about e-commerce.

**E-commerce:**

E-commerce denotes all activities bordering on buying and/or selling goods over the internet. This translates into the whole range of online transactions, from browsing to payment.

**Urban Landscape:**

The urban areas of Lusaka, including its residential, commercial, and industrial areas, together with the transportation networks and infrastructure facilities in the city.

**Descriptive Analysis:** Statistics simply summarize and describe data to get at the key variables and identify patterns among them. It can describe evidence about consumer behaviour and the limitation effects towards infrastructure.

## 1.2 Statement of the Research Problem

The major challenge and problem that arise in the context of e-commerce adoption in Lusaka, Zambia is in connection with lack of power supply, inefficient infrastructure, and online payment security to mention a few. According to the Zambia Information and Communications Technology Authority (ZICTA), as of 2023, Zambia's internet penetration rate stood at 63.1% per 100 inhabitants, but access remains inconsistent due to unreliable network infrastructure and high data costs (ZICTA, 2023).

According to the World Bank, only about 21% of Zambia's population had internet access as of 2021, reflecting severe connectivity issues (World Bank, 2021). This limited internet penetration is exacerbated by frequent power outages, as reported by the Zambia Electricity Supply Corporation (ZESCO), which affects both residential and business operations in Lusaka (ZESCO, 2024). Unreliable energy supply further constrains e-commerce expansion, with ZESCO (2024) reporting an average of 12-24 hours of daily load shedding in urban areas, significantly affecting online businesses. One of the major challenges that Lusaka and its citizens face with online shopping as an option to purchase goods is the frequent power outages, delays in product delivery and secure payment options. As this problem has not been pointed out before in research, the study aims to explore how infrastructural limitations impact consumer behaviour and the adoption of e-commerce in Lusaka, Zambia on the ground - an issue that also has broader implications for the country's economic welfare. Infrastructure limitations directly affect consumer confidence, with studies showing that in low-income regions, 60% of consumers cite unreliable logistics and poor payment security as barriers to online shopping (UNCTAD, 2021).

As of 2024 and 2025, considering the current energy crisis in Zambia, the reliability of online transactions and the accessibility of digital marketplaces are increasingly called into question, posing a challenge to the growth of the e-commerce sector in the region.

Through a comprehensive examination of these questions, this study aims to offer actionable insights that can inform policy decisions, business strategies, and infrastructure development initiatives. The goal is to support e-commerce growth and enhance customer satisfaction and overall consumer welfare in Lusaka, Zambia.

### 1.3 Research Objectives

The main research goal is to examine the infrastructure constraints on consumers and e-commerce in the online retailing industry of Lusaka, Zambia. It aims to identify the problem outside the infrastructure, such as unreliable internet connection, poor transportation systems, and logistical constraint, among others, affecting consumer experience and online shopping behaviour in urban Lusaka. In the overall goal, the study puts forth the following specific objectives:

**1) Analyse the impact of infrastructure constraints on consumer behaviour:** This objective involves analysis of the effects that infrastructure has on consumer purchasing decisions, preferences, and interaction along the entire customer interaction journey with online retailers in Lusaka, poor internet access and ineffective logistics.

**2) Evaluate the effect of infrastructure limitations on e-commerce adoption:** This objective highlights the extent to which deficiencies of digital and physical infrastructure impact the use and adoption of e-commerce platforms by urban Lusaka.

**3) Investigate the correlation between infrastructure limitations and consumer trust/behaviour into online retail:** This objective looks at the extent of the effect of infrastructure deficiency on consumer trust on e-commerce site, particularly the area of reliability, security, and integrity of services.

**4) Identify potential remedies for improving the negative impact of infrastructure limitation on e-commerce:** This objective would imply the development of possible action within which policymakers, businesspeople, and infrastructure developers can act to improve user experience and thus extol e-commerce growth in Lusaka's online retail.

These objectives are designed to be specific, measurable, attainable, realistic, and time-bound (SMART). The focus is on the causes and effects of the problem, the relationship between key variables, and potential solutions.

## 1.4 Research Hypotheses

**H<sub>0</sub> (Null Hypothesis): Infrastructure limitations have no significant impact on consumer trust in Lusaka.**

**H<sub>1</sub> (Alternative Hypothesis): Infrastructure limitations negatively affect consumer trust and e-commerce adoption.**

Constraints in infrastructure limit the extent to which consumers use the online retail sector in Lusaka. It is hypothesized that perceived barriers to service quality like those associated with delays in delivery or some issues relating to performance of the website or payment options, power outages will have a negative consumer behaviour such as reduced engagement, trust and satisfaction.

Likewise, consumers would tend to experience an exciting online shopping experience when internet service is frequently disrupted or confronted with some logistical challenges, resulting in poor shopping experience and subsequently reducing overall consumer satisfaction, which may discourage them from returning.

**H<sub>0</sub>: There is no significant relationship between infrastructure deficiencies and consumer trust in online retail platforms.**

**H<sub>2</sub>: Infrastructure deficiencies reduce consumer trust, which in turn decreases e-commerce adoption.**

Infrastructure limitations delay e-commerce adoption among consumers in Lusaka. It is hypothesized that such conditions like inconsistent internet access and inadequate delivery infrastructure act as disincentives for customers to participate in online shopping. Thus, it may be said that deficiencies on the infrastructure will delay tendency towards the acceptance and use of e-commerce platforms by customers at lower rates similar to areas of better infrastructure development.

## 1.5 The Scope of the Study

This study focuses on urban residents of Lusaka, as it represents Zambia's largest economic hub and has the highest concentration of digital consumers. While rural e-commerce adoption is also relevant, it falls beyond the scope of this study due to distinct infrastructural and socioeconomic variables (World Bank, 2021; ZICTA, 2023). Being the economic and technological centre of Zambia, Lusaka avails the right environment to study the patterns of e-commerce adoption and the infrastructural constraints impeding its growth. The research primarily aims at giving a full scope on the infrastructural problems that users from urban Lusaka face, concerning connectivity, logistics, and safe payment systems all linked to challenges-that import on the online retail experience to consumer behaviour as well as business operations.

Narrowing its view deliberately to urban Lusaka makes the study focused and direct. Thus, one does not include the rural areas within the realm to ensure that the challenges and opportunities relevant to the urban context will not be confused with those presented by the immediate locality. The low levels of digital literacy and relatively low connectivity along logistical constraints in the rural areas call for an entirely different study with respect to their implications on e-commerce.

Also, it confines itself to infrastructure-related problems and does not consider other sectors and extra-infrastructure-related issues-like marketing strategies, regulatory frameworks, or product quality-aspects it chooses to limit. Such specific limitation ensures that an understanding of infrastructure constraints, which include internet access, delivery systems, and payment security issues, on online retail experience is generated by the research.

It aims to afford actionable insights to policymakers, businesses, and other stakeholders who target improving e-commerce adoption within the areas mapped out in Lusaka.

## **1.6 The Significance of the Study**

This study extends existing e-commerce adoption models by incorporating infrastructure limitations as a key determinant (Molla & Licker, 2005). It incorporates the issues of consumer trust and infrastructure quality into existing frameworks. It also hopes to contribute in the development of theories that are context specific to urban Sub-Saharan Africa.

Findings will assist policymakers in formulating infrastructure policies and help e-commerce businesses improve service quality, logistics, and payment security (UNCTAD, 2022).

Data collected may serve as a valuable tool of data for the government and private sector in their mobilization for targeted infrastructure improvements. Likewise, the infrastructure developers could use such findings to understand the conditions for connectivity and mobility. Its findings do have major socioeconomic implication which may help boost economic growth, increase consumer expenditure levels, facilitate investments, and create jobs in Lusaka. Government agencies and stakeholders in Zambia's digital economy can use this research to develop targeted strategies to promote e-commerce growth (World Bank, 2023). More so, it intends to provide explanations about how infrastructure restriction affects e-commerce and satisfaction among consumers that will work toward improving consumer welfare and economic empowerment.

## 1.7 The Organization of the Report

This segment gives a simple description of the chapters in the report, along with a brief description of their contents and intent.

**Chapter 1: Introduction:** This chapter presents the introduction of the study containing the general overview of the topic under study, research problems, objectives, and hypotheses. It also contains the operational definitions of key terms, definitions, and significance of the study and ends with the organization of the report.

**Chapter 2: Literature Review:** This chapter discusses related theories, empirical, and conceptual frameworks dealing with e-commerce adoption and consumer behaviour. It indicated research gaps around which this scholarly study will revolve.

**Chapter 3: Methodology:** The chapter explains the research design, the methods of data analysis and data collection, sampling technique, ethical considerations, as well as reasons for the adopted methods.

**Chapter 4: Presentation and Analysis of Data:** In this chapter, the collected data during the study is described and examined through statistical and thematic methods. It notes most important findings about the infrastructure constraints and their effects on consumer behaviour and e-commerce adoption in Lusaka.

**Chapter 5: Discussion of Results as well as Findings:** The chapter gives meaning to the results in the light of the research objectives and extant literature. This chapter also explains what the results mean and contextualizes them in larger theoretical as well as practical scopes.

**Chapter 6: Conclusion and Recommendations:** It incorporates findings into summary report of the study, gives conclusions reached, and prescribes actions.

## **1.8 Chapter One: Summary**

This chapter provided an overview of the study on e-commerce adoption and consumer behaviour in Lusaka, Zambia, with a specific focus on infrastructure limitations. The background section established how internet connectivity, power supply, logistics, and payment security impact e-commerce growth in developing economies. The statement of the research problem highlighted key challenges affecting consumer trust and adoption of online shopping platforms in Lusaka.

The research objectives were clearly outlined, focusing on the impact of infrastructure on consumer behavior, e-commerce adoption, and potential solutions. The study also defined key operational terms, ensuring clarity in how infrastructure constraints, digital divide, consumer trust, and adoption rates were measured. The scope of the study was narrowed to urban Lusaka, while the significance emphasized the study's contributions to policy, business strategy, and infrastructure planning.

Lastly, the organization of the report was presented, summarizing the structure of subsequent chapters. This introduction sets the foundation for Chapter Two, which reviews existing literature on e-commerce adoption and infrastructure challenges in similar contexts.

# CHAPTER TWO: LITERATURE REVIEW

## 2.1. Introduction

This chapter examines relevant literature on e-commerce adoption, with a focus on infrastructure limitations, consumer behaviour, and trust. Exploring global trends and regional challenges, the review establishes a foundation for understanding e-commerce dynamics in Lusaka, Zambia and on a global scale as well. Important to note that, literature is quite limited about Lusaka or Zambia at all, making it more challenging to present a robust literature review. Although, for this reason this research may have a stronger point to explore and to investigate about e-commerce adoption as previous research has not been conducted.

### 2.1.1 Global Context of E-commerce Adoption:

Increasing internet penetration has led to an exponential rise in the worldwide use of e-commerce. According to UNCTAD (2021), worldwide e-commerce sales experienced an annual growth of 16% between 2017 and 2021, with developed economies being the primary contributors to this increase. Hybrid payment systems, high internet traffic, and secure online payment channels have boosted consumer confidence in developed countries (Zhu & Kraemer, 2005).

Conversely, developing economies encounter significant obstacles that include insufficient internet connectivity, logistical loopholes, and low consumer confidence (Molla & Licker, 2005). The disparity between developed and emerging markets is stressed by the global gap in e-commerce adoption. While larger platforms like Amazon and Alibaba dominate the global e-commerce landscape, emerging markets often see competition from smaller, localized platforms. These platforms, despite limited resources, manage to thrive by tailoring their services to local consumer preferences, addressing logistical challenges, and leveraging regional knowledge (UNCTAD, 2021). Additionally, logistical barriers like unreliable postal services and poor last-mile delivery infrastructure contribute to negative perceptions of e-commerce reliability, further making it more challenging to adopt e-commerce. Despite these differences, it is crucial to implement targeted measures that address the distinct

challenges encountered by developing regions like Zambia and initiate development first in the capital city, Lusaka at least.

### **2.1.2 Infrastructure Challenges in Sub-Saharan Africa:**

E-commerce heavily depends on infrastructure. Infrastructure is a significant barrier in Sub-Saharan Africa in general. Unreliable internet connectivity is a common issue, with average speeds falling well below global standards. (ZICTA, 2022)

The lack of affordable services only serves to make life more complicated for consumers and businesses who want to conduct online business. In the same way, frequent power outages disrupt consumers and businesses, thereby impeding their ability to use digital platforms. Blackouts in Zambia are a common occurrence due to load shedding implemented by ZESCO, which can last for several hours despite being widespread. This not only limits the accessibility of online shopping websites but also impedes the operations of internet-based enterprises that depend on uninterrupted electricity. These challenges are compounded by logistical inefficiencies.

Studies by Mothobi and Grater (2020) further emphasize the need for improved cross-border logistics in Sub-Saharan Africa to foster smoother trade and e-commerce operations. Moreover, Mothobi and Grater (2020) highlight the critical need for regional cooperation to improve cross-border logistics, which can facilitate trade and reduce delivery times. For Lusaka, enhancing infrastructure such as warehousing, road networks, and last-mile delivery services is vital to nurture e-commerce growth (Mulenga & Simwanza, 2021).

### **2.1.3 Consumer Trust and E-commerce Adoption:**

E-commerce is built around trust as one of its key components. The combination of transparent policies and secure payment systems is a crucial element in building consumer confidence, as noted by Pavlou and Gefen (2004).

The findings of Nguyen et al. (2020) suggest that online trust is compromised due to logistical failures and data breaches. Mobile money platforms are a viable option for increasing trust, given their widespread adoption in Zambia. In the region, e-commerce strategies must consider secure digital payment systems as an essential factor due to their potential to reduce consumer concerns, as stated by Donner and Escobari (2010). The inclusion of secure payment gateways like MTN Mobile Money and Airtel

Money in local e-commerce platforms can alleviate payment security concerns and promote wider adoption. Furthermore, trust-based approaches such as well-defined return procedures, effective customer support, and visible security measures can help alleviate consumer concerns. Studies conducted by Kim et al. (2008) reveal that these measures can help customers reduce their perceived risks and increase their loyalty over time.

#### **2.1.4 Socioeconomic and Cultural Influences:**

Income, education, and digital literacy are major socioeconomic influences on e-commerce. According to UNCTAD (2021), consumers with lower incomes often encounter challenges such as expensive internet and limited device availability. The pattern observed by Verma and Singh (2020) in India is reminiscent of this trend. The influence of cultural attitudes is also evident. E-commerce may be less likely to embrace it due to perceived risks, according to Hofstede's (2001) theory on cultural dimensions. In Zambia, the absence of consumer protection laws for online transactions can impede potential buyers who are concerned about fraud or delivery issues. These cultural and legal gaps must be bridged to create a more inclusive e-commerce ecosystem.

#### **2.1.5 Logistics and Consumer Satisfaction:**

Successful e-commerce requires the implementation of efficient logistics. Hsiao (2009) notes that last-mile delivery plays an important role in consumer satisfaction. The solution to these logistical challenges includes the use of innovative technology, including real-time tracking systems and working with local delivery providers to improve efficiency and dependability. According to Chiu et al. (2014), to provide transparency and reliability to enhance customer satisfaction, implementing real-time tracking systems is one of the solutions.

## **2.2 Theoretical Frameworks**

The three chosen key theoretical frameworks: the Technology Acceptance Model (TAM), Diffusion of Innovations Theory (DOI), and SERVQUAL Model. These theories collectively provide insights into the factors influencing consumer adoption of e-commerce platforms, the mechanisms of innovation diffusion, and the role of service quality in fostering trust and satisfaction in online transactions.

### **2.2.1 Technology Acceptance Model (TAM)**

The Technology Acceptance Model (TAM) was first introduced by Davis (1989) to explain how users adopt and use technology. The model posits that two primary factors - perceived usefulness (PU) and perceived ease of use (PEOU) - significantly influence an individual's decision to adopt digital platforms. When users find a system easy to navigate (PEOU) and beneficial for their needs (PU), they are more likely to engage with and integrate it into their daily activities (Venkatesh & Davis, 2000). TAM has been extensively applied in e-commerce studies to assess how technological features influence consumer adoption.

In the context of Lusaka, digital literacy remains a significant challenge, affecting how consumers interact with e-commerce platforms. Limited exposure to online shopping platforms, coupled with concerns regarding payment security, hinders consumer trust and adoption. According to Zhu and Kraemer (2005), infrastructure limitations in developing economies negatively impact both PU and PEOU, resulting in low technology adoption rates. Furthermore, Molla and Licker (2005) demonstrated that factors such as internet reliability, digital payment security, and logistical efficiency influence the perceived usefulness of e-commerce platforms.

The relevance of TAM to this study lies in understanding how consumers in Lusaka perceive online shopping in terms of ease of use and perceived benefits. If poor internet access, slow delivery systems, and unreliable payment mechanisms persist, consumers may view e-commerce as complicated, thereby reducing adoption rates.

### **2.2.2 Diffusion of Innovations (DOI) Theory**

The Diffusion of Innovations (DOI) Theory, developed by Rogers (2003), explains how new technologies are adopted within societies. The theory identifies five key attributes that influence the diffusion process:

1. Relative Advantage – The extent to which e-commerce is perceived as superior to traditional shopping methods.
2. Compatibility – The degree to which e-commerce aligns with existing consumer habits and societal norms.
3. Complexity – The perceived difficulty of learning and using online shopping platforms.
4. Trialability – The ability of consumers to experiment with e-commerce platforms before committing to full adoption.
5. Observability – The extent to which the benefits of e-commerce are visible to other potential adopters.

The slow adoption of e-commerce in Lusaka can be attributed to low observability and trialability - many consumers do not see clear examples of successful online transactions, leading to skepticism. Moreover, inadequate return policies and unreliable refunds further reduce consumers' willingness to try online shopping. Pavlou and Gefen (2004) argue that trust and trialability are significant predictors of e-commerce adoption, particularly in markets where fraud and transaction risks are high. Nguyen et al. (2020) further emphasize that perceived risk in payment security hinders DOI's effectiveness in developing regions.

Additionally, social influence plays a crucial role. For example, the widespread adoption of mobile money services such as M-Pesa in Kenya demonstrates how early adopters influence mass adoption (Donner & Escobari, 2010). Similarly, in Lusaka, if a critical mass of users successfully engages with digital payment platforms, others may follow suit.

### **2.2.3 SERVQUAL Model (Service Quality Framework)**

The SERVQUAL Model, developed by Parasuraman, Zeithaml, and Berry (1988), is a framework used to evaluate service quality and its impact on consumer satisfaction. The model identifies five dimensions that influence customer perception and trust in service-based industries, including e-commerce:

1. Reliability – The ability to deliver promised services consistently and accurately.
2. Responsiveness – The speed at which customer inquiries and complaints are addressed.
3. Assurance – The presence of guarantees, secure payment systems, and trust-building mechanisms.
4. Empathy – The degree to which customer service is personalized and consumer-friendly.
5. Tangibles – The presentation of physical elements such as website design, product descriptions, and overall digital aesthetics.

E-commerce platforms in Lusaka often struggle with service reliability due to frequent delivery delays, poor last-mile logistics, and inadequate return policies. These shortcomings negatively impact consumer trust and satisfaction. Studies by Mothobi and Grater (2020) indicate that African consumers are less likely to make repeat purchases if their initial experience with online retail is negative due to logistical inefficiencies.

Moreover, assurance is a significant concern - many consumers are hesitant to provide financial details online due to fears of fraud. Boateng et al. (2016) found that payment security is one of the biggest determinants of online consumer trust in developing markets. Similarly, Hsiao (2009) examined last-mile delivery challenges in Asian e-commerce markets and found that delivery inefficiencies directly reduce consumer retention rates.

Improving these service dimensions is crucial for enhancing e-commerce adoption in Lusaka. Platforms that offer reliable payment security, fast customer service responses, and clear refund policies are more likely to gain consumer trust and increase online shopping engagement.

Overall, The Technology Acceptance Model (TAM), Diffusion of Innovations (DOI) Theory, and SERVQUAL Model collectively explain the key determinants of e-commerce adoption in Lusaka. While TAM highlights the importance of ease of use

and usefulness in adoption, DOI emphasizes how consumers adopt new technologies over time. Meanwhile, the SERVQUAL Model underscores the importance of service quality, reliability, and trust in online shopping platforms.

## **2.3. Empirical Review**

The empirical review evaluates existing studies on e-commerce adoption and consumer behaviour, focusing on infrastructure challenges, trust, and socio-economic factors. This section identifies key findings, methodological approaches, and gaps that inform the context of Lusaka, Zambia.

### **2.3.1 Studies on Infrastructure Challenges: Why infrastructure is such an important enabler for e-commerce?**

The impact of infrastructure on e-commerce in Sub-Saharan Africa was highlighted as being blocked by inadequate internet penetration, unreliable supply of power and logistics. ZICTA (2022) reported that Zambia's internet penetration is still below 40%, with poor connectivity affecting both businesses and consumers. Mothobi and Grater (2020) have identified several challenges to e-commerce in South Africa, including lack of transportation infrastructure and last-mile delivery issues. These results are consistent with those of Boateng et al. (2016), who have identified similar issues in all parts of West Africa.

Empirical studies also demonstrate the use of mobile technologies to address infrastructure challenges. Kenya's financial inclusion has been enhanced by mobile money systems, as noted by Donner and Escobari (2010). The role of consumer behaviour in determining the extent to which infrastructure limitations affect e-commerce adoption is crucial. Mobile technologies, especially mobile money systems like MTN Mobile Money and Airtel Money, play a key role in Zambia as digital payments can help ease trust and lack of infrastructure as argued by Pavlou and Gefen (2004). According to the source which is from 2004, the use of the mentioned mobile technologies has been implemented since then which potentially proves actual growth and improvement.

### **2.3.2 Research on Consumer Behaviour**

According to Pavlou and Gefen (2004), trust plays a significant role in shaping online shopping habits. The study concluded that consumer confidence can only be boosted through the implementation of secure payment systems, transparent policies, and reliable customer support. A study by Nguyen et al. (2020) found that trust is compromised due to logistical failures and data breaches, leading to lower

engagement from consumers on platforms considered unreliable. Trust in online platforms can still be eroded in Zambia based on the unreliable delivery services, as described by Boateng et al. (2016) when customers may be reluctant to purchase online because of fear of late deliveries or delivery failures.

Verma and Singh (2020) examined the impact of socio-economic factors on consumer behaviour in developing markets. Younger, tech-savvy individuals are more likely to be interested in e-commerce, as per their study. Nevertheless, UNCTAD (2021) highlights that access to devices and internet costs are often too expensive for low-income consumers. Research on e-commerce adoption in developing countries has been conducted, with a focus on identifying both barriers and enablers that affect the industry's adoption. According to Molla and Licker (2005), the E-commerce Readiness Model is based on factors such as infrastructure (i.e., readiness), trust, and culture. Afolayan et al. (2015) assert that infrastructure deficiencies are the main burdens to adoption in Sub-Saharan Africa, where countries with better-developed infrastructure tend to have higher rates of adoption. Mothobi and Grater (2020) highlight that government regulation of digital literacy and internet access is of paramount importance in attempting to knock down these socio-economic constraints. Their results indicate that specific interventions can substantially enhance e-commerce uptake in low- and middle-income countries such as Zambia. According to UNCTAD (2021), government policies are crucial for promoting e-commerce. Digital literacy programs and investments in broadband infrastructure have had a significant impact on Rwanda's e-commerce growth. The outcomes point to the possibility of undertaking similar measures in Zambia, where digital literacy and infrastructure improvements are still vital. E-commerce adoption can be comprehended through the Diffusion of Innovations theory put forth by Rogers (2003).

Research on Zambia regarding e-commerce is not widespread; instead, most studies focus on wider regional patterns of behaviour and purchasing patterns. There are few studies that explore the relationship between infrastructure limitations, consumer confidence levels, and e-commerce adoption, especially in urban areas such as Lusaka. Research on infrastructure challenges often fails to consider the impact of mobile payments and mobile technologies. This research seeks to address the deficiencies in infrastructure by examining how these limitations affect consumer behaviour and e-commerce adoption on an urban scale in Lusaka. This is an integrated analysis of the challenges and opportunities in Zambia's e-commerce

industry, using both quantitative and qualitative methods. Research findings indicate that e-commerce adoption is heavily influenced by infrastructure, trust, and socio-economic factors. Research highlights the importance of implementing targeted measures to overcome barriers and promote growth, especially in developing nations. With its focus on Lusaka, this research will contribute to the growing body of literature on e-commerce in Sub-Saharan Africa, providing useful information for policymakers and stakeholders.

### **2.3.3 Critique of Literature Review**

The combination of theory, empirical evidence and regional data is well-suited to understanding the topic. Yet to meet the demanding criteria of a master's dissertation, many areas need work beyond that in which there is often room for improvement (e.g, critical analysis, scope, and integration of emerging ideas). A significant benefit of the review is that it provides comprehensive coverage. Through the lens of global, regional, and local perspectives, the review presents a comprehensive perspective on the various factors that shape the adoption of e-commerce. Including specific data, such as Zambia's internet penetration rate from ZICTA (2022), enhances the review's credibility by providing empirical evidence on identified infrastructural issues. In addition, well-established theories such as TAM and DOI offer a systematic approach to understanding the factors that drive e-commerce adoption. Despite the strengths, the review does not provide critical engagement with the studies mentioned, also its useful summary of current literature, it does not give enough weight to the methodologies used or contextual relevancies of the studies mentioned. Studies conducted in countries other than Zambia are frequently presented without considering their potential relevance within the Zambian context. Providing a more thorough evaluation of the usefulness of these outcomes would elevate this review objectively. Also, while the review highlights a connection between infrastructure and public trust as well as socio-economic factors, it does not provide enough information about these relationships. Understanding the impact of poor internet connectivity on trust and overcoming infrastructural barriers through data analysis would provide broader insights into the obstacles to e-commerce adoption in Zambia. The review has a narrow geographic and demographic focus, which is another drawback.

Although the study is centred on Lusaka, it may not be universally applicable to other regions of Zambia, particularly rural or peri-urban. By incorporating data from these regions, we can gain a deeper understanding of the factors that influence e-commerce adoption across the nation. The comparison of these empirical findings with current literature may result in a more nuanced and critical analysis, pinpointing areas of agreement or disagreement.

## 2.4. Conceptual Framework

The conceptual framework of this study examines how infrastructure limitations influence e-commerce adoption in Lusaka, Zambia. The framework is structured around two key variables: independent variables (infrastructure limitations) and a dependent variable (e-commerce adoption). By adopting this approach, the study provides a focused analysis of the direct impact of various infrastructural constraints on the growth of online retail in the region.

### **Independent Variables: Infrastructure Limitations**

Infrastructure is a fundamental determinant of e-commerce success, as it shapes the accessibility, reliability, and efficiency of digital transactions. For this study, infrastructure limitations are classified into three main categories:

1. **Digital Infrastructure** – This refers to the availability and quality of internet services, mobile network reliability, and the affordability of data. The Zambia Information and Communications Technology Authority (ZICTA, 2022) reports that while internet penetration in Zambia has improved, challenges such as slow connection speeds, loadshedding impact, frequent outages, and high data costs remain barriers to widespread e-commerce adoption. Poor digital infrastructure affects the ease with which consumers can browse products, complete transactions, and interact with e-commerce platforms.
2. **Logistical Infrastructure** – Effective e-commerce relies on well-developed delivery systems, road networks, and last-mile logistics. However, many online businesses in Lusaka struggle with inefficient transportation networks, unreliable delivery services, and high costs associated with logistics (Mothobi & Grater, 2020). Without an efficient distribution network, customers experience delays in product delivery, which diminishes trust in online shopping and discourages repeat purchases.
3. **Payment Infrastructure** – Secure and convenient payment systems are critical for e-commerce transactions. In Zambia, while mobile money services like MTN Mobile Money and Airtel Money have facilitated digital payments, challenges remain concerning fraud risks, low banking penetration, and consumer trust in online transactions (Nguyen et al., 2020). Limited access to reliable and secure payment methods discourages consumers from engaging with e-commerce platforms, particularly for high-value transactions.

## **Dependent Variable: E-Commerce Adoption**

E-commerce adoption refers to the extent to which consumers engage with digital marketplaces for purchasing goods and services. This study measures adoption based on three key factors:

1. Online Shopping Frequency – The number of times consumers make digital transactions over a given period.
2. Platform Engagement – The level of interaction consumers have with e-commerce websites, including browsing, comparing prices, and making purchases.
3. Consumer Retention – The likelihood of repeat purchases and long-term usage of e-commerce services.

## **Conceptual Linkages**

The relationship between infrastructure limitations and e-commerce adoption is direct rather than mediated by consumer behaviour. The study hypothesizes that deficiencies in digital, logistical, and payment infrastructure create barriers that directly influence consumer willingness to engage in e-commerce.

- Digital Infrastructure → E-Commerce Adoption: Poor internet quality and high data costs make it difficult for consumers to access and use online platforms effectively, discouraging adoption.
- Logistical Infrastructure → E-Commerce Adoption: Inadequate delivery services and poor road networks lead to late deliveries and order cancellations, reducing consumer trust and satisfaction.
- Payment Infrastructure → E-Commerce Adoption: Limited secure payment options heighten concerns over transaction security, discouraging online purchases.

These relationships illustrate how overcoming infrastructure limitations can significantly enhance e-commerce adoption in Lusaka. This conceptual framework provides a structured lens through which the study will analyze the challenges and opportunities for e-commerce in Lusaka, ensuring that findings contribute meaningfully to both academic research and practical solutions.

## **2.5 Chapter Two: Summary**

This chapter reviewed existing literature on e-commerce adoption and consumer behaviour, particularly in developing economies. It examined key theoretical frameworks, including the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), which explain how consumers adopt digital platforms. Empirical studies were explored, highlighting how infrastructure challenges such as internet reliability, power supply, and digital payment security affect e-commerce adoption. The review identified gaps in existing research, particularly in Zambia, where there is limited data on how infrastructure constraints impact online shopping behavior. The conceptual framework was developed based on these insights, linking key variables that were further examined in the study. This chapter provided the theoretical and empirical foundation for the research methodology presented in Chapter Three.

## **CHAPTER THREE: METHODOLOGY**

### **3.1. Research Approach**

In this mixed-methods study, the quantitative aspect focuses on analysing numerical data to identify trends, patterns, and relationships among key variables, such as the progression of events over time and the interconnections between them. Simultaneously, the qualitative component involves collecting insights through open-ended survey responses, enabling an exploration of participants' experiences and perceptions. Pragmatism generally states as research philosophy applied for this study that the mixed method borrows quantitative methods and employs qualitative methods of data collection. This research is justified as it addresses practical challenges by integrating objective, quantitative data with subjective, qualitative insights. It generates knowledge that supports the development of a framework for realistic solutions to address the ongoing issue of infrastructure constraints within the e-commerce environment.

Proof by deduction is used in this study as it begins with the established theories and concepts to the portal on e-commerce and infrastructure challenges. The hypotheses were found from previously conducted analysis within the literature, and then collecting quantitative data for their test was the next procedure. However, the inductive-reasoned result through qualitative section includes open-ended survey response coding to yield categories and themes emerging from the responses. Thus, this dual approach provides a very rigorous study of the research problem, whereby theoretical assumptions can be subjected to testing as well as discoveries of new consumer behaviour patterns.

### **3.2. Research Design**

The present research study employs a crossover, cross-sectional, mixed-method research design that finds the two data types-at a point: qualitative and quantitative. It has captured a very close current picture regarding the extent of e-commerce adoption and the bearing of infrastructure constraints on consumer behaviour in Lusaka, Zambia. Under the quantitative head involves a structured survey extending to a diverse sample of urban consumers. This is intended to bring out statistically significant outcomes on relationships between key variables such as internet reliability, logistical challenges, and consumer trust in e-commerce platforms. It does include the qualitative part mostly through the open-ended questions in the survey and interviews. The response types are informed by experiences and views respondents have about the discussed factors of infrastructure. Given the nature of the study, a cross-sectional design has been found to be appropriate since it enables easy and cost-effective data collection as well as offers broad understanding of the research problem within the constraints of time and resources. This design also allows for the analysis of patterns and relationships while accepting the limitations of not having longitudinal data. The philosophical stance of this study is pragmatism. Thus, it emphasizes the pragmatic application of both qualitative and quantitative methods in resolving real-life problems. Pragmatism advocates the mixed-method approach whereby quantitative surveys check trends in e-commerce, while qualitative interviews attempt to understand consumer attitudes and experiences (Creswell & Poth, 2018). Thus, the study captures both objective data and subjective insights for which it is best suited for an intricate situation like e-commerce adoption in Lusaka. It finds synergy with the above gainful objectives, i.e., providing actionable insights toward improving infrastructure and consumer satisfaction, focusing on effective use of methods: mix of methods (Morgan, 2007; Creswell, 2014).

Cross-sectional research will be used in the study. The cross-sectional design is such that it will collect data over a single point in time from a selected group of participants. It suits the intention to obtain insights on consumer opinions and behaviours regarding the phenomenon of e-commerce in the urban environment of Lusaka. The descriptive analysis will be employed to summarize and interpret the

collected data, highlighting patterns, trends, and characteristics of the consumers' views with respect to e-commerce adoption.

### **3.3. Study Population**

The specific population for the study consists of urban residents in Lusaka, Zambia engaged in any undertaking or related experience in e-commerce. The criteria for choosing these individuals relevant to research are because they are directly affected by certain limited infrastructures - unreliable internet connectivity, inefficient logistics, and sometimes inconsistent power supply - which critically influence how online shoppers behave. Urban residents are targeted as such because they are much likely to encounter e-commerce as compared to those who reside in rural areas, which, to some extent, minimizes their exposure to such situations and even their responses to infrastructure-related challenges. This is a very important group when it comes to obstacles and such like to adopting e-commerce in urban settings, making it very relevant for understanding the framework of e-commerce within Lusaka's online retail sector.

### **3.4. Sample Size**

Sampling in this research would be based on some broadly accepted norms for the case of survey research techniques so that the study would follow the desired precision, projected response rate and statistical accuracy. Keeping in mind Lusaka's diversified urban population and the necessity to have a representative sample of online shopping consumers, at least 300 such individuals will be tracked for this quantitative survey. This figure of sample size is enough to provide competent statistical power to detect significant relationships between the variables and test the research hypotheses adequately.

In addition, there will be 8 in-depth interviews with survey participants for qualitative input. The intention is to have a diverse sample representative of Lusaka's diverse population in terms of age, gender, income, and occupation. This will enhance the study's ability need to understand the effects of infrastructure constraints on e-commerce and consumer behaviour.

### **3.5. Sampling Design**

Stratified sampling will be used to ensure that a representative sample of the target population will be obtained in the study among Lusaka's urban populace. This technique involves distributing sub-populations across various demographic characteristics such as age, gender, income, and education. Stratification enables sounder analysis of how infrastructure limitations in the context of e-commerce influence various demographic groups. A total of 150-300 sample respondents will be targeted to the quantitative component for statistical sufficiency for the identification of patterns and relationships that exist among variables. However, in-depth interviews will supplement the quantitative with 8 personal interviews for rich qualitative perspectives into the lived experiences and perspectives of the participants. The study will cover people who live in Lusaka and actively indulge into either ends of e-commerce as consumers or stakeholders who are at least 18 years old. These criteria ensure that the data collected would be directly valuable to the specifics of one's objectives. On the contrary exclusion criteria will eliminate any individual who do not engage in e-commerce, below the age of 18 or refuses to provide informed consent. In addition, sampling frame will be carefully checked and updated before data collection begins to avoid sampling errors. Follow-up procedures such as reminder emails or calls will be implemented to improve on response rates hence diversifying and representing sample well.

Demographic confounding potentials like age, gender, and income will be controlled in the analysis step. Thus, it will isolate how infrastructure limitations affect consumer behaviour and the adoption of e-commerce. The main data collection method would be an online survey composed of both closed and open questions to allow for the quantitative measurement of key variables while allowing respondents to elaborate their experiences. In addition to this, certain selected participants will be interviewed using a semi-structured format to probe more deeply into their perceptions of infrastructure challenges and how it affects their e-commerce behaviour.

Ethical consideration remains paramount throughout the research. Detailed information of the purpose, methodologies and risks associated with the research would be given before the consent is taken. Participation will be voluntary, and respondents will be given the right to withdraw at any moment without consequence.

All data collected will remain anonymous and stored in a secure facility to maintain confidentiality.

While online surveys can lead to general trends and relationships, interviews would allow people to bring to light some other issues, thus making the results solid and grounded in context to have maximum effectiveness.

### **3.6. Data Collection**

Data will be collected by administering standardized questionnaires to those taking part in Lusaka, Zambia. The questionnaire will collect quantitative data on crucial characteristics such as infrastructure limits, customer happiness, and e-commerce uptake.

The questionnaire will incorporate tested scales and items gathered from current literature to ensure measurement reliability and validity. It will address topics like as participants' perceptions of infrastructure restrictions, trust in online transactions, and e-commerce adoption patterns. Demographic data such as age, gender, income, and occupation will also be collected to define the sample and investigate potential demographic disparities in e-commerce adoption patterns.

Prior to full-scale data collection, the questionnaire will be piloted and pre-tested to verify data quality and reduce respondent bias. Data will be collected through online questionnaires, with digital platforms used to efficiently contact participants. Ethical considerations, such as getting informed consent and maintaining data confidentiality, shall be strictly followed throughout the research process.

### **3.7. Data Analysis**

Regarding data analysis, inferential statistical methods will be applied, including regression analysis and correlation analysis to determine the relationships of the variables. In this case, regression analysis will be used to assess the extent to which infrastructure restrictions affect levels of consumer trust and e-commerce adoption. Correlation analysis, on the other hand, will determine the strength and direction of the relationships among infrastructure restrictions, consumer trust, and e-commerce adoption. Statistical tests such as T-test and Analysis of Variance (ANOVA) are also useful for subgroup studies in looking at demographic differences in approaches to

adopting e-commerce. This can inform the public of how age, gender, income, and occupation influence consumer involvement and consideration given to e-commerce such as the changes brought about. Data collected will be subject to quantitative analysis for the relationship between infrastructural limitations, consumer trust, and adoption of e-commerce in Lusaka, Zambia.

First, descriptive statistics will apply in summarizing the important variables and examining the distribution of responses. This will comprise the whole lot of measures, such as means, frequencies, and percentages, to shed light on participants' perceptions and behaviours as regards infrastructure constraints and e-commerce activities. Post that, inferential statistical techniques including regression analysis and correlation analysis are to be applied on the respective variables to show how they are related. In this case, regression analysis will be done to assess the extent to which infrastructure restrictions affect levels of consumer trust and e-commerce adoption. With correlation analysis, the strength and direction of the relationships between infrastructure restrictions, consumer trust, and e-commerce adoption will be determined.

### **3.8. Study Variables (Independent, Dependent)**

This research aims to evaluate the impact of infrastructure limitations on e-commerce adoption in Lusaka, Zambia. E-commerce adoption, in this context, is considered synonymous with consumer behavior, reflecting the extent to which individuals engage with digital platforms for purchasing goods and services. As outlined in the conceptual framework, the independent variables in this study are related to infrastructure challenges that potentially hinder e-commerce adoption, while the dependent variable is the extent to which consumers adopt e-commerce as a preferred method of shopping.

The independent variables are categorized into three types of infrastructure challenges: digital infrastructure, logistical infrastructure, and payment infrastructure. Digital infrastructure includes the availability, reliability, and affordability of internet services and mobile network coverage. Challenges such as slow internet speeds, frequent service interruptions, and high data costs directly influence the ease with which consumers can access and use e-commerce platforms. These issues are

measured through indicators such as internet connection speeds, the frequency of service outages, and the cost of data. The logistical infrastructure variable refers to the efficiency of delivery systems, transportation networks, and last-mile logistics. Problems in this area, including delayed deliveries, unreliable transport networks, and high delivery costs, are critical barriers that reduce consumer trust and satisfaction with e-commerce platforms. This research assesses these challenges by examining the reliability of delivery services and the impact of logistical inefficiencies on online shopping experiences. Lastly, payment infrastructure concerns the availability and security of payment methods for online transactions. While mobile money services such as MTN Mobile Money and Airtel Money are prevalent in Zambia, challenges remain regarding fraud risks, limited banking penetration, and consumer trust in online payment systems. This variable is measured by evaluating the security and reliability of available payment methods, and consumer confidence in completing transactions online.

The dependent variable of the study is e-commerce adoption, which reflects consumer behavior in relation to online shopping. This is measured through various factors that capture the frequency and intensity of online shopping. Key indicators of e-commerce adoption include the frequency of online shopping, the level of engagement with e-commerce platforms (such as browsing and making purchases), and consumer retention, which refers to repeat purchases and sustained engagement with e-commerce services. These measures collectively provide insights into how infrastructure limitations impact consumers' willingness to adopt e-commerce as a regular and reliable shopping method.

In this study, consumer behaviour is considered the outcome variable that is directly influenced by the infrastructure limitations discussed above. It is hypothesized that deficiencies in digital, logistical, and payment infrastructure create barriers that directly impede consumers' ability to engage with e-commerce. These infrastructure challenges affect key consumer behaviours, such as trust in online platforms, satisfaction with the shopping experience, and the willingness to make repeat purchases, all of which are crucial elements in determining the overall level of e-commerce adoption in Lusaka.

### **3.9 Chapter Three: Summary**

This chapter outlined the research design, data collection methods, and analytical approaches used in the study. A quantitative research approach was adopted, using a survey of 150 respondents in Lusaka to collect data on e-commerce adoption and consumer experiences. The sampling method, survey instrument, and data collection process were explained, ensuring the study's validity and reliability. Statistical methods, including descriptive analysis, regression analysis, and Pearson correlation tests, were specified to analyze the relationships between infrastructure challenges and e-commerce satisfaction.

Ethical considerations, such as informed consent and data confidentiality, were also addressed. The chapter concluded by highlighting how the methodology supports answering the research questions posed in Chapter One, leading to the data presentation and analysis in Chapter Four.

# **CHAPTER FOUR: PRESENTATION OF DATA**

## **4.1 Introduction**

Chapter Four focuses on the presentation of data collected during the study, providing insights into the factors influencing e-commerce adoption in Lusaka. This chapter serves as a critical component of the research, aligning with the hypotheses outlined in Chapter Three, particularly those concerning the impact of infrastructural limitations and consumer behaviour on the uptake of online shopping. The chapter begins by presenting descriptive statistics that summarise the demographic characteristics of respondents, their online shopping behaviours, and their perceptions of e-commerce. Subsequently, the analysis delves into the relationships between key variables, such as infrastructural constraints, consumer satisfaction, and trust, as well as the mediating role of consumer behaviour in e-commerce adoption. The findings in this chapter are systematically organised to address the research objectives and hypotheses. This includes exploring how limitations in internet connectivity, power reliability, and delivery logistics shape consumer experiences, behaviours, and decisions. Additionally, the chapter highlights patterns and trends in the data, providing evidence to support or refute the proposed hypotheses. The results presented in this chapter form the basis for the discussion and recommendations in subsequent chapters.

## **4.2 Response Rate**

The study did not make a positive impression of the intended response rate versus what was achieved. The study managed to capture 150 respondents out of the 300 targeted sample size indicating a 50% response rate. However, the study managed to capture the 30+ achievement rate of a minimum sample size for a quantitative study and a 10+ sample size for a qualitative study.

## 4.3 Demography of Respondents

### 4.3.1 Age of respondents

Out of 150 respondents, 53 respondents were between the ages of 18 to 24 years, 25 to 34 years were 57 respondents, 31 respondents were between the ages of 35 to 44 years of age, and 45 to 54 years were 9 respondents.

**Table 4.1 Age of the respondents**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18–24 years	53	33.8	35.3	35.3
	25-34	57	36.3	38.0	73.3
	35-44 years	31	19.7	20.7	94.0
	45-54 years	9	5.7	6.0	100.0
	Total	150	95.5	100.0	
Missing			4.5		
Total		150	100.0		

### 4.3.2 Gender of the Respondents

Out of the 150 respondents, 47 were male, and 103 were female as suggested below.

**Table 4.2 Gender of respondents**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	47	29.9	31.3	31.3
	Female	103	65.6	68.7	100.0
	Total	150	95.5	100.0	
			4.5		
Total		150	100.0		

### 4.3.3 Employment status of the respondents

Out of the 150 respondents, 63 stated that they were employed, 26 stated that they were self-employed. 3 were students, and 25 stated that they were unemployed.

**Table 4.3 Employment status**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed	63	40.1	42.0	42.0
	Self-employed	29	18.5	19.3	61.3
	Student	36	22.9	24.0	85.3
	Unemployed	22	14.0	14.7	100.0
	Total	150	95.5	100.0	
Missing			4.5		
Total		150	100.0		

#### 4.3.4 Income level

Out of 150 respondents, 47 stated that they were in an income level of below K2,000. 28 stated that their income was between K2,000 to K5,000, 31 respondents that their income was between K5,001 to K10,000, and 44 stated that they were above K10,000.

**Table 4.4 Income Level**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below K2,000	47	29.9	31.3	31.3
	K2,000 – K5,000	28	17.8	18.7	50.0
	5,001 - K10,000	31	19.7	20.7	70.7
	Above K10,000	44	28.0	29.3	100.0
	Total	150	95.5	100.0	
Missing			4.5		
Total		150	100.0		

#### 4.4 Presentation of quantitative data

The quantitative data was presented using frequency distributions across selected questions, descriptive statistics, regression analysis, Pearson correlation analysis, and reliability and validity of the data.

#### 4.4.1 Frequency distribution presentation

**Table 4.5 Gender of respondents**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	47	29.9	31.3	31.3
	Female	103	65.6	68.7	100.0
	Total	150	95.5	100.0	
Total		150	100.0		

The distribution of the above sample consisted out of 47 male (31.3%) and 103 female (68.7%) participants, with most respondents being in the age gap between 25 and 34 years (38%), followed by 18 – 24 age group at (35.3%).

**Table 4.6 Age of the respondents**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18–24 years	53	33.8	35.3	35.3
	25-34	57	36.3	38.0	73.3
	35-44 years	31	19.7	20.7	94.0
	45-54 years	9	5.7	6.0	100.0
	Total	150	95.5	100.0	
Missing			4.5		
Total		150	100.0		

**Table 4.7 Employment status**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed	63	40.1	42.0	42.0
	Self-employed	29	18.5	19.3	61.3
	Student	36	22.9	24.0	85.3
	Unemployed	22	14.0	14.7	100.0
	Total	150	95.5	100.0	
Missing			4.5		
Total		150	100.0		

The employment status distribution indicated that 42% were working, 24% were students, 19.3% were self-employed while 14.7% fell into the unemployed category. This varied demographic better illustrates the segmentation of consumers who partake in e-commerce.

**Table 4.8 How often do you shop online?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Frequently (Once a week or more)	23	14.6	15.3	15.3
	Occasionally	57	36.3	38.0	53.3
	Rarely (a few times a year)	63	40.1	42.0	95.3
	Never	7	4.5	4.7	100.0
	Total	150	95.5	100.0	
Missing	System		4.5		
Total		150	100.0		

Shifting the focus towards online shopping behaviour, 42% of respondents stated that they rarely shopped online, whereas 38% percent claimed to shop online occasionally. Only 15.3% were online shoppers and no less than 4.7% of participants claimed to never shop online.

**Table 4.9 What is your average monthly expenditure on online purchases?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below K500	55	35.0	36.7	36.7
	K500 - K1,000	49	31.2	32.7	69.3
	K1,000 - K2,500	20	12.7	13.3	82.7
	Above K2,500	20	12.7	13.3	96.0
	Other	6	3.8	4.0	100.0
	Total	150	95.5	100.0	
Missing	System		4.5		
	Total	150	100.0		

Expenditures varied monthly: 36.7% reported spending below K500, 32.7% spending between K500 and K1000, and 13.3% spending over K2500. Interestingly, 99.3% of individuals claimed to understand what online shopping entailed.

**Table 4.10 Are you aware of online shopping as an option for purchasing goods and services?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	149	94.9	99.3	99.3
	No	1	.6	.7	100.0
	Total	150	95.5	100.0	
Missing	System	7	4.5		
	Total	150	100.0		

According to Table 4.10, almost 100% of the respondents are aware of online shopping as a shopping activity compared to traditional ways of shopping. This was important to ask to confirm that the awareness of online shopping exist in Lusaka.

**Table 4.11 What types of products do you typically purchase online?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Clothing and accessories	65	41.4	43.3	43.3
	Electronics	54	34.4	36.0	79.3
	Groceries	16	10.2	10.7	90.0
	Home appliances	6	3.8	4.0	94.0
	I do not purchase anything online	9	5.7	6.0	100.0
	Total	150	95.5	100.0	
Missing	System	7	4.5		
	Total	150	100.0		

Table 4.11 presents the types of products that respondents typically purchase online. The findings indicate that clothing and accessories (43.3%) are the most frequently purchased items, followed by electronics (36.0%). This suggests that fashion and technology-related goods are the most in demand among online shoppers in Lusaka. Groceries (10.7%) and home appliances (4.0%) are purchased less frequently, possibly due to concerns related to freshness, delivery logistics, or consumer preferences for in-store purchases.

Notably, 6.0% of respondents reported that they do not purchase anything online, indicating a segment of the population that remains disengaged from e-commerce. Additionally, 4.5% of responses were missing, which may reflect non-responses or individuals who were unsure about their online shopping habits.

**Table 4.12 Do you prefer traditional shopping or online shopping?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Traditional shopping (in store)	79	50.3	52.7	52.7
	Online shopping (apps, online platforms)	50	31.8	33.3	86.0
	Both	21	13.4	14.0	100.0
	Total	150	95.5	100.0	
Missing	System	7	4.5		
	Total	150	100.0		

52.7% of respondents preferred traditional means of shopping while 33.3% liked to shop online whereas 14% used both.

**Table 4.13 Which online shopping platforms or retail outlets do you use for your online purchases in Lusaka?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Social media stores (Facebook, Instagram)	71	45.2	47.3	47.3
	Yango delivery (Food, beverages)	44	28.0	29.3	76.7
	Umoyo (Health fitness)	16	10.2	10.7	87.3
	Radian (Electronics, home appliances)	4	2.5	2.7	90.0
	AfriSupermarket (groceries)	9	5.7	6.0	96.0
	I don't shop online	6	3.8	4.0	100.0
	Total	150	95.5	100.0	
Missing	System	7	4.5		
Total		150	100.0		

Developing upon, among traditional sellers, the emerging trendy e-commerce platforms have included social media stores like Facebook and Instagram (47.3%), Yango delivery services (29.3%), and niche outlets Umoyo for health products (10.7%). What is surprising is that 4% of respondents stated that they never engaged with online platforms at all.

**Table 4.14 How often do you experience interruptions in your internet service?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	5	3.2	3.3	3.3
	Rarely	32	20.4	21.3	24.7
	Occasionally	65	41.4	43.3	68.0
	Frequently	43	27.4	28.7	96.7
	Always	5	3.2	3.3	100.0
	Total	150	95.5	100.0	
Missing	System	7	4.5		
Total		150	100.0		

According to the results, respondents claim that they occasionally (43.3%) experience some interruptions in their internet service. 28.7% stated they experience interruptions frequently, which proves that digital infrastructure challenges are existing in Lusaka.

**Table 4.15 How would you describe the reliability of your electricity supply?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very reliable	11	7.0	7.3	7.3
	Somewhat reliable	17	10.8	11.3	18.7
	Neutral	22	14.0	14.7	33.3
	Somewhat unreliable	31	19.7	20.7	54.0
	Very unreliable	69	43.9	46.0	100.0
	Total	150	95.5	100.0	
Missing	System	7	4.5		
Total		150	100.0		

However, there was a distinct effect of infrastructure on the online shopping experience. A considerable 28.7% reported that their electricity was quite unreliable, and 20.7% claimed it to be somewhat unreliable.

**Table 4.16 Do you have backup power solutions (e.g., generators, solar systems, inverter etc.)?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, and they are reliable	64	40.8	42.7	42.7
	Yes, but they are unreliable	19	12.1	12.7	55.3
	No, I do not have backup power	67	42.7	44.7	100.0
	Total	150	95.5	100.0	
Missing	System	7	4.5		
Total		150	100.0		

Even though 55% of respondents had some form of backup power solutions like solar systems (32%) or inverters (16%), 44.7% had no form of backup at all.

**Table 4.17 What is the average duration of power outages you experience?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 hour	14	8.9	9.3	9.3
	1 – 3 hours	13	8.3	8.7	18.0
	3 – 6 hours	13	8.3	8.7	26.7
	8 – 12 hours	29	18.5	19.3	46.0
	More than 12 hours	81	51.6	54.0	100.0
Total		150	95.5	100.0	
Missing	System	7	4.5		
Total		150	100.0		

Table 4.17 shows that respondents faced power outages for more than 12 hours which drastically limited their online shopping abilities, 54% of respondents claimed that their electricity was severely unreliable.

**Table 4.18 What type of backup power solution do you use to continue online shopping during power outages?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Generator	11	7.0	7.3	7.3
	Solar power	48	30.6	32.0	39.3
	Uninterruptible power supply (UPS)	2	1.3	1.3	40.7
	Inverter	24	15.3	16.0	56.7
	None	57	36.3	38.0	94.7
	Other	8	5.1	5.3	100.0
	Total	150	95.5	100.0	
Missing	System	7	4.5		
Total		150	100.0		

Table 4.18 presents the types of backup power solutions used by respondents to continue online shopping during power outages. The data reveals that solar power (32.0%) is the most used backup solution, reflecting a growing reliance on renewable energy sources. Inverters (16.0%) are the second most preferred option, followed by generators (7.3%) and uninterruptible power supply (UPS) systems (1.3%), which have minimal adoption.

However, a significant 38.0% of respondents reported having no backup power solution, indicating that power outages remain a major barrier to online shopping for a large segment of consumers. Additionally, 5.3% indicated using other unspecified solutions, which may include power banks or alternative sources.

**Table 4.19 What is the possible cause you face challenges with delivery services?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor road conditions	30	19.1	20.0	20.0
	Traffic congestion	83	52.9	55.3	75.3
	High transportation costs	17	10.8	11.3	86.7
	Other	20	12.7	13.3	100.0
	Total	150	95.5	100.0	
Missing	System	7	4.5		
Total		150	100.0		

These infrastructural challenges were also presented at delivery logistics where traffic congestion was the most described problem (55.3%) with poor road conditions (20%) and expensive transport (11.3%).

**Table 4.20 How would you rate the cost of transportation for e-commerce in Lusaka?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very affordable	7	4.5	4.7	4.7
	Affordable	49	31.2	32.7	37.3
	Neutral	58	36.9	38.7	76.0
	Expensive	33	21.0	22.0	98.0
	Very expensive	3	1.9	2.0	100.0
	Total	150	95.5	100.0	
Missing	System	7	4.5		
Total		150	100.0		

Despite challenges with delivery services, 36.9% of respondents viewed transport cost as neutral and 31.2 – so majority – viewed it as affordable, with only 21% of these people considering it to be costly or extremely costly.

**Table 4.21 How would you rate the availability of digital payment options in Lusaka?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very unavailable	2	1.3	1.3	1.3
	Unavailable	15	9.6	10.0	11.3
	Neutral	64	40.8	42.7	54.0
	Available	40	25.5	26.7	80.7
	Very available	29	18.5	19.3	100.0
Total		150	95.5	100.0	
Missing	System	7	4.5		
Total		150	100.0		

In relation to digital payment options, there was an overall positive attitude towards these systems, as evidenced by 46% of respondents claiming them to be available or very available. At the same time, 10% believed that these services were non-existent, while 42.7% were indifferent.

**Table 4.22 What is the average speed of your internet connection?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very fast	10	6.4	6.7	6.7
	Fast	44	28.0	29.3	36.0
	Average	80	51.0	53.3	89.3
	Slow	16	10.2	10.7	100.0
	Total	150	95.5	100.0	
Missing	System	7	4.5		
Total		150	100.0		

Table 4.22 presents the self-reported average speed of internet connections among respondents. The majority (53.3%) described their internet speed as "Average," while 29.3% rated it as "Fast." A smaller proportion reported having "Very Fast" internet (6.7%), suggesting that high-speed internet access remains limited.

Conversely, 10.7% of respondents reported having "Slow" internet connections, which could significantly impact their ability to engage in online shopping. 4.5% of

responses were missing, indicating some respondents may have been unsure of their internet speed.

These findings indicate that while most respondents have moderate to fast internet, a substantial proportion still face slow connections, which may act as a barrier to seamless e-commerce transactions. Improving internet speed and accessibility could enhance consumer confidence and engagement with online shopping in Lusaka.

**Table 4.23 Have you faced any challenges with payment security in online transactions?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, frequently	9	5.7	6.0	6.0
	Yes, occasionally	68	43.3	45.3	51.3
	No, never	73	46.5	48.7	100.0
	Total	150	95.5	100.0	
Missing	System	7	4.5		
Total		150	100.0		

Whereas challenges regarding payment security appeared as another major concern as 45.3% claimed to have faced infrequent problems and 6% faced challenges very often. Positively, nearly two in five (48.7%) reported having no issues at all with security.

**Table 4.24 Rate the challenge of payment security?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not an issue	27	17.2	18.0	18.0
	Small issue	41	26.1	27.3	45.3
	Neutral	45	28.7	30.0	75.3
	An issue	25	15.9	16.7	92.0
	Major issue	12	7.6	8.0	100.0
Total		150	95.5	100.0	
Missing	System	7	4.5		
Total		150	100.0		

Table 4.24 shows that the largest proportion (30.0%) of respondents remained neutral, indicating mixed experiences or uncertainty regarding the severity of payment security concerns. 27.3% perceived it as a small issue, while 18.0% believed it was not an issue at all, suggesting that for many users, payment security is not a major barrier to online shopping.

However, a combined 24.7% of respondents viewed payment security as a significant concern (16.7% rated it as "An Issue," and 8.0% as a "Major Issue"). This indicates that although most users feel secure making online payments, a substantial minority remains wary of fraud, data breaches, or transaction failures.

**Table 4.25 Rate the challenge of delivery logistics?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not an issue	15	9.6	10.0	10.0
	Small issue	52	33.1	34.7	44.7
	Neutral	49	31.2	32.7	77.3
	An issue	24	15.3	16.0	93.3
	Major issue	10	6.4	6.7	100.0
	Total	150	95.5	100.0	
Missing	System	7	4.5		
Total		150	100.0		

A significant proportion (34.7%) perceived delivery logistics as a small issue, while 32.7% remained neutral, indicating that most respondents do not view it as a major barrier.

However, 16.0% rated delivery logistics as an issue, and 6.7% considered it a major issue, showing that a substantial minority faces challenges related to timely and reliable product deliveries. Only 10.0% of respondents reported that delivery logistics were not an issue at all.

These findings suggest that while logistical inefficiencies exist, they do not severely impact most online shoppers in Lusaka. However, improving delivery speed, tracking systems, and last-mile logistics could enhance overall customer satisfaction and encourage higher e-commerce adoption.

**Table 4.26 Which of the following factors most affects your decision to shop online?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Internet speed/connectivity	41	26.1	27.3	27.3
	Delivery time	69	43.9	46.0	73.3
	Trust in payment methods	30	19.1	20.0	93.3
	Product availability	5	3.2	3.3	96.7
	Other	5	3.2	3.3	100.0
	Total	150	95.5	100.0	
Missing	System	7	4.5		
Total		150	100.0		

Table 4.26 highlights the key factors influencing respondents' decisions to shop online. Most respondents (46.0%) identified delivery time as the most critical factor, suggesting that the speed and efficiency of product delivery significantly impact consumer confidence in e-commerce.

Internet speed and connectivity (27.3%) was the second most cited factor, reinforcing previous findings that reliable internet access is crucial for engaging in online shopping. This aligns with the study's focus on infrastructure barriers.

Additionally, trust in payment methods (20.0%) was another notable concern, indicating that security and reliability of online transactions still affect consumer behavior. Product availability (3.3%) and other factors (3.3%) were less significant in influencing online shopping decisions.

**Table 4.27 On a scale of 1 to 5, how satisfied are you with the current state of e-commerce services in Lusaka?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very unsatisfied	7	4.5	4.7	4.7
	Unsatisfied	33	21.0	22.0	26.7
	Neutral	89	56.7	59.3	86.0
	Satisfied	17	10.8	11.3	97.3
	Very satisfied	4	2.5	2.7	100.0
	Total	150	95.5	100.0	
Missing	System	7	4.5		
Total		150	100.0		

Overall, perceptions of the e-commerce services were varied, with the majority (59.3%) expressing neutral feelings, 22% voicing displeasure and 11.3% proclaiming satisfaction.

**Table 4.28 How much do you trust online shopping platforms to deliver reliable products and services?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I trust them completely	13	8.3	8.7	8.7
	I trust them somewhat	119	75.8	79.3	88.0
	I do not trust them at all	18	11.5	12.0	100.0
	Total	150	95.5	100.0	
Missing	System		4.5		
Total		150	100.0		

E-commerce platforms were met with moderate trust levels, with respondents slightly indicating some trust placing the buffer at 79.3% but completely trusting them limiting it to 8.7%. On the other end of the spectrum, there were 12% who reported being completely un-trustful of these platforms.

**Table 4.29 To what extent do infrastructure challenges prevent you from making repeat online purchases?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	16	10.6	10.7	10.7
	Slightly	37	24.5	24.7	35.3
	Moderately	67	44.4	44.7	80.0
	Significantly	27	17.9	18.0	98.0
	Completely	3	2.0	2.0	100.0
	Total	150	99.3	100.0	
Missing	System	1	.7		
Total		151	100.0		

Table 4.29 examines the extent to which infrastructure challenges hinder repeat online purchases among consumers in Lusaka. Many respondents (44.7%) indicated that infrastructure challenges moderately affect their decision to shop online again, while an additional 18.0% reported a significant impact. This suggests that infrastructure-related issues, such as internet reliability, power supply, and logistics, are key barriers to sustained e-commerce engagement.

Conversely, 10.7% of respondents stated that infrastructure challenges do not affect their repeat purchases at all, while 24.7% reported only a slight impact. A small 2.0% of respondents indicated that infrastructure challenges completely prevent them from making repeat purchases, highlighting a segment of consumers who may have abandoned e-commerce entirely due to infrastructure constraints.

**Table 4.30 How likely are you to recommend online shopping to others in Lusaka, given the current infrastructure situation?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very unlikely	15	9.9	10.0	10.0
	Unlikely	23	15.2	15.3	25.3
	Neutral	69	45.7	46.0	71.3
	Likely	35	23.2	23.3	94.7
	Very likely	8	5.3	5.3	100.0
	Total	150	99.3	100.0	
Missing	System	1	.7		
Total		151	100.0		

Table 4.30 presents respondents' likelihood of recommending online shopping to others in Lusaka, given the current infrastructure situation. The largest group (46.0%) remained neutral, indicating that many respondents are undecided or have mixed experiences with e-commerce.

However, 28.6% of respondents (combining "Likely" and "Very Likely") indicated a positive willingness to recommend online shopping, suggesting that despite infrastructure challenges, some consumers find online shopping beneficial. In contrast, 25.3% of respondents (combining "Unlikely" and "Very Unlikely") were hesitant to recommend e-commerce, likely due to concerns such as poor internet connectivity, unreliable delivery, or payment security issues.

**Table 4.31 Do you think e-commerce will grow in Lusaka over the next 5 years despite infrastructure challenges?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	85	56.3	56.7	56.7
	No	8	5.3	5.3	62.0
	Maybe	57	37.7	38.0	100.0
	Total	150	99.3	100.0	
Missing	System	1	.7		
Total		151	100.0		

Table 4.31 explores respondents' perceptions of e-commerce growth in Lusaka over the next five years despite infrastructure challenges. The majority (56.7%) expressed optimism, believing that e-commerce will continue to grow, indicating confidence in market expansion and potential improvements in digital infrastructure, logistics, and payment systems.

However, 38.0% of respondents selected "Maybe," suggesting that uncertainty remains due to existing infrastructure limitations. A small portion (5.3%) believed that e-commerce would not grow, likely due to persistent challenges such as internet connectivity, power supply issues, and unreliable delivery systems.

These findings indicate that while many consumers see potential for e-commerce growth in Lusaka, addressing key infrastructure constraints will be essential to sustaining this momentum and increasing adoption rates.

**Table 4.32 How do infrastructure issues influence your decision to start or maintain an online retail business?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly encourages	15	9.9	10.0	10.0
	Somewhat encourages	23	15.2	15.3	25.3
	No impact	51	33.8	34.0	59.3
	Somewhat discourages	53	35.1	35.3	94.7
	Strongly discourages	8	5.3	5.3	100.0
	Total	150	99.3	100.0	
Missing	System	1	.7		
Total		151	100.0		

Lastly, infrastructure concerns have some dampening effects on entrepreneurial activities in online retail, the mean was 3.11 and 35.3% mode were “Somewhat discourages.”

#### 4.4.2 Descriptive statistics

**Table 4.33 Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Age of the respondents	150	1	4	1.97	.897
Income level	150	1	4	2.48	1.214
What is your average monthly expenditure on online purchases?	150	1	5	2.15	1.174
Do you prefer traditional shopping or online shopping?	150	1	3	1.61	.722
What is the average speed of your internet connection?	150	1	4	2.68	.754
What is the average duration of power outages you experience?	150	1	5	4.00	1.351
How would you rate the efficiency of delivery services in Lusaka?	150	1	5	3.26	.923
How often do you face delays in receiving orders?	150	1	6	3.04	.881
What is the possible cause you face challenges with delivery services?	150	1	4	2.18	.905
How often do you encounter issues with online payment transactions?	150	1	5	2.56	.798
How would you rate the availability of digital payment options in Lusaka?	150	1	5	3.53	.960
How do payment system issues affect your confidence in making online purchases?	150	1	5	3.11	1.020
On a scale of 1 to 5, how satisfied are you with the current state of e-commerce services in Lusaka?	150	1	5	2.85	.781
How would you rate the cost of transportation for e-commerce in Lusaka?	150	1	5	2.84	.891

To what extent do infrastructure challenges prevent you from making repeat online purchases?	150	1	5	2.76	.939
How likely are you to recommend online shopping to others in Lusaka, given the current infrastructure situation?	150	1	5	2.99	1.003
How do infrastructure issues influence your decision to start or maintain an online retail business?	150	1	5	3.11	1.056
Do you think e-commerce will grow in Lusaka over the next 5 years despite infrastructure challenges?	150	1	3	1.81	.958
How would you describe the reliability of your electricity supply?	150	1	5	3.87	1.309
How would you rate the reliability of your internet connection?	150	1	5	3.37	1.108
How often do you shop online?	150	1	4	2.36	.797
Rate the challenge of internet connectivity?	150	1	5	2.86	1.068
Valid N (listwise)	150				

The descriptive statistics present in the document provide information regarding the answers given by 150 respondents about their e-commerce experiences in Lusaka. Data was described in common statistics of their minimum and maximum values, mean, and standard deviation, which shows the data's central tendencies and variability. The mean age of respondents is 1.97 (SD = 0.897), with responses spread across four age brackets. Similarly, the average income level (mean = 2.48, SD =

1.214) and employment status (mean = 2.11, SD = 1.114) indicate diversity in socio-economic backgrounds.

The average monthly expenditure on online purchases is moderate (mean = 2.15, SD = 1.174), reflecting spending across five categories. Shopping preferences show a stronger inclination toward traditional shopping (mean = 1.61, SD = 0.722).

Online shopping habits are varied (mean = 2.15, SD = 1.666), suggesting diverse consumer behavior. Internet speed is moderate (mean = 2.68, SD = 0.754), while power outages are frequent (mean = 4.00, SD = 1.351).

Responses about technological and logistical challenges reveal moderate delivery efficiency (mean = 3.26, SD = 0.923) and frequent delays (mean = 3.04, SD = 0.881). Backup power solutions are not widely adopted (mean = 2.02, SD = 0.937).

Challenges in online payment systems are evident (mean = 2.56, SD = 0.798), with moderate confidence in payment security (mean = 3.11, SD = 1.020). The most preferred digital payment method has a mean of 1.63, suggesting dominance of one payment type over others.

Satisfaction with e-commerce services in Lusaka is moderate (mean = 2.85, SD = 0.781), but trust in online platforms is low (mean = 2.03, SD = 0.455). Data security concerns are also moderate (mean = 2.23, SD = 0.670). Internet reliability (mean = 3.37, SD = 1.108) and electricity supply (mean = 3.87, SD = 1.309) significantly influence the online shopping experience.

Infrastructure challenges have a moderate impact on repeat purchases (mean = 2.76, SD = 0.939). Respondents show cautious willingness to recommend online shopping in Lusaka despite infrastructure issues (mean = 2.99, SD = 1.003).

The highest mean score (3.11, SD = 1.056) suggests that infrastructure issues play a significant role in entrepreneurial decisions regarding online retail.

Expectations for e-commerce growth in Lusaka over the next five years are low (mean = 1.81, SD = 0.958), indicating skepticism about overcoming infrastructure challenges.

### **4.4.3 Regression analysis**

This section examines the relationship between infrastructure challenges and satisfaction with e-commerce services in Lusaka. The regression model aims to determine how internet connectivity issues influence overall consumer satisfaction with online shopping.

The decision to examine internet connectivity challenges as the primary predictor of satisfaction with e-commerce services was based on preliminary survey findings. Descriptive statistics revealed that a significant proportion of respondents experienced frequent internet disruptions, highlighting it as a major barrier to online shopping. Further correlation analysis confirmed a strong relationship between internet connectivity challenges and satisfaction with e-commerce services ( $r = 0.861$ ,  $p < 0.01$ ), reinforcing its critical role. While other infrastructure factors such as payment security, delivery efficiency, and power reliability were also considered, their impact on satisfaction was less pronounced. Therefore, this study prioritizes internet connectivity as a key determinant of e-commerce satisfaction, with future research recommended to explore additional influencing factors.

#### **1. Variables in the Model**

The dependent variable (DV) in this regression analysis is:

- Satisfaction with e-commerce services in Lusaka (measured on a 1–5 Likert scale, where 1 = Very Unsatisfied and 5 = Very Satisfied).

The independent variable (IV) included in the model is:

- Challenges with internet connectivity (measured on a 1–5 Likert scale, where 1 = No Challenge and 5 = Major Challenge).

Since prior research has shown that internet connectivity is a crucial factor in e-commerce satisfaction, this study focuses on its direct impact. However, future research could expand this model by incorporating additional predictors such as internet speed, payment security concerns, and power reliability.

#### **2. Regression Model Summary**

The regression model was estimated using the Enter method, which includes all predictor variables at once. The model summary is presented below:

**Table 4.34 Regression Model**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	0.861	0.741	0.739	0.399

The R-value (0.861) indicates a strong positive correlation between internet connectivity challenges and satisfaction with e-commerce services. The R<sup>2</sup> value (0.741) suggests that 74.1% of the variation in satisfaction with e-commerce services can be explained by internet connectivity challenges.

This result confirms that internet reliability plays a critical role in shaping consumer perceptions of e-commerce services. Given that only one independent variable was tested, future models should examine additional factors that could influence satisfaction.

### 3. ANOVA Results

To assess whether the regression model is statistically significant, an ANOVA test was conducted:

**Table 4.35 ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	67.223	1	67.223	422.449	.000 <sup>a</sup>
	Residual	23.551	148	.159		
	Total	90.773	149			

a. Predictors: (Constant), Rate the challenge of internet connectivity?

b. Dependent Variable: On a scale of 1 to 5, how satisfied are you with the current state of e-commerce services in Lusaka?

#### Interpretation:

- The model is statistically significant ( $F = 422.449$ ,  $p < 0.001$ ), indicating that the predictor variable (internet connectivity challenge) has a significant effect on satisfaction with e-commerce services.
- The low residual sum of squares (23.551) suggests that the model fits the data well.

#### 4. Regression Coefficients

The regression equation used is:

$$Y = B_0 + B_1X + e$$

$$Y = B_0 + B_1X + e$$

Where:

- Y = Satisfaction with e-commerce services
- X = Challenge of internet connectivity
- B<sub>0</sub> = Constant
- B<sub>1</sub> = Regression coefficient

Table 4.36 Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.055	.093		11.303	.000
Rate the challenge of internet connectivity?	.629	.031	.861	20.554	.000

a. Dependent Variable: On a scale of 1 to 5, how satisfied are you with the current state of e-commerce services in Lusaka?

Interpretation:

- The coefficient (B = 0.629) suggests that for each one-unit increase in internet connectivity challenges, satisfaction with e-commerce services decreases by 0.629 units on average.
- The standardized Beta (0.861) confirms a strong positive effect of internet connectivity challenges on satisfaction.
- The t-value (20.554, p < 0.001) indicates a highly significant relationship.

#### 5. Discussion of Findings

The regression analysis demonstrates that internet connectivity issues significantly impact consumer satisfaction with e-commerce services in Lusaka. The results suggest that unreliable internet access may deter users from engaging in online shopping, leading to dissatisfaction.

Given that 74.1% of the variation in satisfaction is explained by internet connectivity challenges, policymakers and service providers should prioritize internet infrastructure improvements to enhance e-commerce adoption. Additionally, future research could incorporate other factors such as payment security, delivery efficiency, and power supply reliability to provide a more comprehensive understanding of satisfaction determinants.

The survey results indicate that respondents, on average, rated their satisfaction with e-commerce services in Lusaka at 2.85 (SD = 0.781) on a 5-point Likert scale, suggesting a generally neutral to slightly dissatisfied perception. Similarly, the challenge of internet connectivity received an average rating of 2.86 (SD = 1.068), indicating that most respondents experienced moderate difficulties with internet reliability. These findings highlight the significant role of internet infrastructure in shaping user satisfaction with online shopping experiences in Lusaka.

**Table 4.37 Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.861 <sup>a</sup>	.741	.739	.399	.741	422.449	1	148	.000

a. Predictors: (Constant), Rate the challenge of internet connectivity?

#### 4.4.4 Pearson correlation analysis

The analysis explored the relationship between infrastructure factors and satisfaction with e-commerce services in Lusaka using Pearson correlation. The key variables assessed were: internet speed, internet connectivity challenges, satisfaction with e-commerce services.

The results indicate strong positive correlations:

- Internet speed and satisfaction with e-commerce services ( $r = 0.878$ ,  $p < 0.01$ ) suggest that as internet speed improves, user satisfaction increases.

- Internet connectivity challenges and satisfaction with e-commerce services ( $r = 0.861$ ,  $p < 0.01$ ) indicate that higher connectivity issues result in lower satisfaction.
- Internet speed and connectivity challenges ( $r = 0.829$ ,  $p < 0.01$ ) show a significant relationship, suggesting that poor internet connectivity is closely linked to slow internet speeds.

All correlations were statistically significant at the 0.01 level ( $p < 0.01$ ), confirming that these relationships are unlikely to have occurred by chance. The analysis was based on 150 valid responses, with no missing data.

These findings underscore the critical role of internet infrastructure in shaping user satisfaction with e-commerce. Improving internet speed and reducing connectivity challenges could lead to better e-commerce experiences in Lusaka.

#### **4.4.5 Reliability and validity**

The reliability and validity test aimed to assess the internal consistency regarding internet access and electricity supply. This is a quantitative study based on analyses of responses from a hundred and fifty cases which represents one hundred percent of the data collected. It must also be noted that no data exclusions have been reported as indicated by the excluded section which shows a zero percent exclusion rate. Hence, all provided cases have contributed to the analysis, ensuring a thorough evaluation. For the specific challenges presented above, the reliability is measured through Cronbach's Alpha, a statistical tool which helps to measure internal consistency. The reported Cronbach's alpha value of 0.927 is high and, thus, facilitates explanation as to why the items used to evaluate internet connectivity and power supply reliability are strongly correlated and tend to consistently measure infrastructure challenges. His value above 0.7 is generally accepted while above 0.9 suggests excellent reliability of findings and trustworthiness. The N of Items value of 2 indicates that the analysis included two variables internet connectivity and power supply reliability. This statistic has a high degree of reliability which indicates that the respondents' perception regarding these challenges is the same thereby validating the assertion that both factors have an impact on e-commerce operations in Lusaka.

## **4.5 Qualitative analysis**

### **4.5.1 Thematic analysis**

#### **4.5.1.1 Infrastructure Challenges**

A great number of respondents noted the issue surrounding infrastructure as a major impediment to online business growth in Lusaka. A comment like *“If the current situation does not improve around infrastructure and development, online shopping will not gain relevance in 5 years”* captures the apprehensions about the reliability of power, internet, and logistics. These challenges underscore the fact that unless infrastructure issues are addressed, the expansion of e-commerce in the region may be hindered.

#### **4.5.1.2 Convenience as a Driving Force**

The convenience of e-commerce came out strongly as a very commonly cited theme, with some respondents mentioning the ease of saving time and ease of access. Comments such as *“It’s easier to purchase goods and services from the comfort of your home”* and *“It saves you the cost of travelling to the store”* illustrate how appealing online shopping is for highly busy people and other users who value efficiency. This theme implies that convenience is a prime reason which induces consumers, and in this case, it may spur e-commerce development despite all the hurdles.

#### **4.5.1.3 Growing Internet and Mobile Subscriptions**

This was also echoed in the responses when referring to the expanding access of mobile and internet as a positive thing. One of them said, “Yes, because internet availability will grow along the development of infrastructure,” while another pointed out, “Improving the access of the internet and penetration of smartphones are making the internet more available.” It was noted in these comments that the infrastructure improvements together with the increased use of the internet and digital literacy will positively impact e-commerce growth in Lusaka.

#### **4.5.1.4 Economic and Social Influences**

Economic phenomena and societal activities were abundantly reported. On the one hand, some were over-optimistic, claiming, *“A struggling economy is a growing economy. We rise through challenges,”* whereas others were more reserved, saying, *“Our economy is growing at a very, very slow pace.”* Divergent views like this show

that there is conflicting opinion around the potential encouraging recovery of the economy badly needed to recover e-commerce, and the deep and broad concerns about all pervasive stagnation. Further, globalization was also mentioned by some who said, “*Yes, in line with the consumer behaviours and global market trends.*”

#### **4.5.1.5 Awareness and Cultural Shifts**

Catalysts like the rise of awareness on online purchasing systems, and changes in cultural attitudes toward adopting e-commerce were also recognized. Complaints like, “*Most people are getting to know about e-commerce,*” and “*It’s the next big thing*” were common. This suggests that indeed recognition of the advantages of e-commerce has begun to permeate into the broader consumer base which might result into increased adoption rate in the future.

#### **4.5.1.6 Issues About Trust and Security**

Some respondents point to issues of trust on online platforms and the insecurity of payment. For instance, “*People have improved trust towards online platforms,*” indicates shifts towards confidence, while “*Bad situations and poor protection measures*” underscore the remaining gaps. These aspects of trust would need to be addressed to ensure more growth in e commerce.

#### **4.5.1.6 Globalisation Impact Influence**

Some respondents were more optimistic and posited that e-commerce development in Lusaka would follow the global trend. When someone stated, “*The global e-commerce market is growing at a fast pace, and I’m sure it will reach our market as well*”, it shows the expectation that Zambia will not be left out in the global development race. Western influence was also one of the factors mentioned by one respondent who said, “*Yes, it can grow as the Western culture is a big factor.*”

### **4.5.2 Thematic Analysis of Desired Improvements in Lusaka’s E-Commerce Sector**

#### **4.5.2.1 Development of infrastructure**

The requirement for better infrastructure to facilitate the expansion of e-commerce was underscored by many respondents. Respondents highlighted issues regarding “*stable power supply,*” “*better internet connectivity,*” and just “*better*” transport networks and infrastructure. One respondent remark, “*We need new and more*

*efficient energy suppliers besides ZESCO. Once that's sorted, I believe there will be a domino effect on services.*" These comments indicate that many foundational infrastructure issues need to be addressed at first to make e-commerce services more affordable and dependable.

#### **4.5.2.2 Efficient and Reliable Delivery Services**

Delivery logistics were frequently mentioned as areas that highlight lack of improvement. Quite a few respondents felt the *"faster and more reliable delivery options"* and *"affordable delivery rates"* should be from *"more service areas."* For example, one participant opined, *"There is a need to improve delivery infrastructure, so that they can include same day or next day delivery services."* Another participant noted, *"Providing timely delivery will encourage customers to embrace e-commerce."* These comments bring to the forefront the high value that effective logistics are placed on consumer satisfaction and confidence.

#### **4.5.2.3 Enhanced Online Platforms and Payment Systems**

Several respondents stressed the need for friendly user interfaces and safe online platforms. Suggestions included *"better websites," "easier navigation,"* and *"more variety within products."* Concerns regarding payment systems were also significant including, *"secure payment methods," "more payment alternatives,"* and *"reducing delivery costs."* One of the respondents stated, *"Providing secure and varied options for payment like mobile money or credit cards would enhance transactions and increase confidence."* This theme illustrates the need to establish and upgrade both the online platform and the payment systems to capture the interest of shopper online market.

#### **4.5.2.4 Product Quality and Trust**

Deep faith in the sellers and being able to trust the merchandise was the most important issue raised. Survey respondents spoke of concerns, including *"scammers," "ensure that the right product is received,"* and *"better quality of the goods together with reliable sizing systems."* For instance, one participant told, *"There is great need to verify these online businesses and their owners to stamp out scammers."* Others underscored the importance of having *"clear return policies"* and *"product images which have not been downloaded or computer generated and portray the authentic items."* Such feedback captures the essence of trust building in e-commerce.

#### **4.5.2.5 Governmental and Private Sector Facilitation**

All the respondents called for an increased government and private sector facilitation of the e-commerce sector. Suggestions were *“better government policies geared towards supporting businesses,” “giving the public e-commerce education,” and “investment in digital and logistic systems.”* One of them said that *“The government should facilitate so the private sector can develop.”* Yet another informed, *“Commerce education at large presents many opportunities for both buyers and sellers.”* This pragmatic theme illustrates the importance of government policy as well as private investment towards the development of e-commerce.

#### **4.5.2.6 Security and Data Protection**

Respondents raised concerns regarding e-commerce adaption that indeed include security issues. Platforms to trade online needed to be ‘secure’ as did ‘cyber security awareness’ as well as ‘*payment security*’. One respondent from the above group put it clearly that, *“Enhancing the security of mobile money and reducing scams would encourage people to shop online.”*

#### **4.5.2.7 Awareness and Sensitisation**

Another theme was that public awareness and education on the topic of e-commerce needs to improve. Respondents suggested *“more advertising through social media,” “awareness of safe platforms,” and “education about the benefits of e-commerce.”* As one respondent pointed out, *“Businesses need to realise they can utilise online platforms and delivery services.”* This corroborates the need for marketing and education in the promotion of e-commerce.

### **4.6 Chapter Summary**

Chapter Four presented the data presentation using descriptive analysis, frequency distribution, regression analysis, Pearson correlation analysis, and thematic analysis. The study provided a detailed presentation of the findings and presented a positive skew towards the attitude of respondents towards e-commerce. The next chapter will provide an academic and detailed understanding of the study.

# CHAPTER FIVE: DISCUSSION OF FINDINGS

## 5.1 Introduction

In this part, I engage with the survey results regarding the e-commerce adoption in Lusaka, Zambia, covering the demographic, behavioural and infrastructural amenities necessary. It discusses the survey's findings by interpreting them through the prism of the existing literature on e-commerce and practice. In some respect, the chapter is thematic and is structured around demographic issues, infrastructural gaps, Trust/Safety, Conveniences, and Socio-Cultural and Economic Issues, among others. These have been structured in a way so that the results obtained can be placed within the socioeconomic setting of Lusaka while setting the basis for the recommendations and further analysis to be undertaken.

## 5.2 Discussion of findings

The researcher studied the demographic, behavioural, and infrastructure constraints to e-commerce adoption in Lusaka, Zambia. From the survey, it was possible to uncover critical information on how infrastructure constraints affect online shopping behaviour and the development of e-commerce. This section returns to these findings and attempts to provide a relevant contribution to e-commerce in its wider academic and practical context.

### 5.2.1 E-Commerce Users: A Bottom-Up Approach Offering Insights

In zonal previews of Lusaka, some aspects of respondents' demographic characteristics form the core basis for the analysis of online shopping. The younger populace, particularly those aged between 18 and 34, had the highest engagement levels with e-commerce. Research into users of new digital technologies shows that the younger ones tend to use the internet and smartphones more frequently (Mofokeng & Matima, 2018). This age group is predicted to dominate over the other groups which suggests that there will be e-commerce growth, if infrastructure gaps are filled (Bwalya; 2011). As per the first objective, this age group's high engagement directly correlates with the impact of infrastructure limitations on e-commerce

adoption, as more frequent internet and smartphone use reveals a greater need for reliable infrastructure to facilitate such behaviours.

Gender differences were also pronounced where there were more female than male respondents. Although this might depict a general picture in Lusaka, it also refers to the market characteristics in which woman shoppers, who are known to spend more on retail goods, are the majority (Verma & Singh, 2020). Addressing infrastructure limitations could further tap into this gender-based shopping behaviour, especially considering that women tend to lead consumer spending. Targeting these shoppers will demand an understanding of what drives their purchasing decisions, enabling managers of the e-commerce business to design instruments that can capture and keep them. The socioeconomic factors affecting the adoption of e-commerce are illustrated by employment status and income levels. A large number of respondents were employed or self-employed, showing working people are more willing to make purchases on the internet. On the contrary, low-income respondents were constrained with additional problems such as a lack of dependable internet and affordable goods. This demonstrates the difference in access to the Internet due to economic factors and agrees with Chigada and Ngulube's (2015) findings. This observation highlights the socioeconomic challenges hindering e-commerce adoption, emphasising the second objective of investigating the correlation between infrastructure constraints and consumer trust/behaviour in online retail.

### **5.2.2 Infrastructure Challenges and Their Effects**

As seen in the survey, infrastructure challenges were singled out as a significant constraint to e-commerce usage in Lusaka. The respondents noted that the lack of reliable electricity and poor internet coverage were serious impediments all the time. Power cuts make it difficult for customers to engage in e-commerce and for businesses to conduct operations. These findings support the second objective of evaluating the effect of infrastructure limitations on e-commerce adoption. This correlates with other studies which have claimed that e-commerce cannot thrive with heavy competition without reliable electricity in developing countries (Afolayan et al., 2015). In regards to internet service, became another critical area, as respondents revealed sporadic or consistent interruptions to the service. As observed in the regression and correlation analyses, e-commerce service satisfaction is strongly associated with internet speed.

This issue directly ties back to Objective 2, showing that slow or unreliable internet hinders consumer trust in e-commerce platforms. This supports earlier studies which show that quality internet access translates to better user experience and greater trust in the sites (Molla & Licker, 2005). It is equally important to solve these connectivity challenges in Lusaka to create an e-friendly environment. Last-mile delivery logistics was equally difficult because of traffic, bad roads, and expensive business in transportation. These challenges lead to slow delivery which reduces confidence in the consumers. Improving delivery logistics would address consumer dissatisfaction and improve e-commerce adoption, linking to Objective 3, which explores remedies for infrastructure limitations in e-commerce. Respondents noted that through the establishment of effective and low-cost delivery services, online shopping can be boosted. This corresponds with the suggestion made by Hsiao (2009) that last-mile delivery remains a challenge but must be dealt with to promote e-commerce activities.

### **5.2.3 Trust and Security Concerns Addressed**

Another common thread in the study was the issue of trust in online platforms and payment systems (Tembo; 2024). While, on average, almost half of the respondents were comfortable with the use of digital payment mediums, fraud and data protection issues were still major concerns. This aligns with Objective 2, where the correlation between infrastructure limitations, especially payment security, and consumer behaviour is a significant concern for adoption. When comparing different sets of data, the reliability analysis conducted for the study showed that there is a great deal of internal consistency across the respondents in their opinions about the infrastructure issues related to the internet and payment security. Earlier work on the adoption of e-commerce by Pavlou and Gefen matches research findings that involve trust in e-commerce adoption. To resolve this, respondents recommended safe payment systems and online security consumer education. Apprehensions about security can also be alleviated by trust cast through, for instance, seller ratings, product description, and return policy (Luapula; 2023). Improving these features aligns with the third objective, proposing solutions to mitigate infrastructure and trust-related issues in e-commerce adoption. These practices are necessary for fostering trust in e-commerce in Lusaka.

#### **5.2.4 How E-Commerce Thrives Out of Convenience Motivating Factors**

No matter the infrastructure deficits, the ease of online shopping served as a glaring motivation even for the respondents. This supports the first objective on consumer behaviour, where convenience continues to play a significant role in adoption, despite challenges in infrastructure. This further supports the phenomenon where convenience serves as a leading factor in e-commerce demand regardless of country (Chiu et al, 2014). A considerable number of respondents noted the lack of infrastructure development, especially within the Lusaka region, which could greatly unlock demand for e-commerce because of the existing mobile money platforms and increased smartphone usage. Respondents noted that these technologies facilitate transactions and broaden access to internet services. This shows how technological adoption like mobile money and smartphones can be part of the remedy to infrastructure issues, directly linking to Objective 3 on improving infrastructure limitations. This corroborates studies showing that mobile technologies are transformative in bridging the digital divide in developing economies (Donner & Escobari, 2010). Failing to wholeheartedly embrace these technologies will stultify e-commerce development in Lusaka.

#### **5.2.5 Sociocultural and Economic Aspects**

Ngwira (2024) states that changes in how people view online shopping go hand in hand with the changing adoption rates of e-commerce due to socioeconomic factors. Compared to before, there is an increase in the number of respondents who appreciate the benefit of digital shopping, indicating a shifting culture. This observation coincides with the Diffusion of Innovation theory which indicates how and why new ideas and technology spread among cultures and implies that awareness and early adoption are key prerequisites (Rogers, 2003). In line with Objective 1, the shift in consumer attitude points toward a growing acceptance of e-commerce, though infrastructure constraints remain a key barrier. However, these economic factors come with breed opportunities alongside these challenges. For instance, respondents from Zambia have varied views regarding e-commerce; some foresaw a flourishing economy while others seemed sceptical given the slow economic progress within their nation. This view supports Objective 3, where there is a need for more inclusive economic policies and infrastructure development to encourage e-commerce growth.

This presents a double-edged concern as long-term, high rates of unemployment coupled with low-income levels may limit spending power to a large portion of the populace. These statistics call for the formulation of economic policies that are less selective to encourage e-commerce development, which is also the position in the recommendations of UNCTAD (2019).

### **5.3 Qualitative findings – Interviews**

The investigation involved not only a survey but also utilized deep interviews to investigate the essential elements of an online shopping experience, such as infrastructure, trustworthiness, payment security, ease, internet accessibility, and logistics of deliveries.

Eight interviews in total brought to light the qualitative data that cited the infrastructure issues as their main barriers, for instance, the breakdown of the electricity, the internet not working and the lack of logistics. In addition, the residents from the outskirts of Lusaka complained about the long delivery times and the horrible road situation that made the matters even worse. Regardless, the results of the quantitative research were further backed up by the findings of the study, with 54% of the respondents who said that they experience power cuts that last longer than 12 hours, and 28.7% that the internet is frequently disrupted and 46% of the other group had major delivery logistics problems. The data was the conveyer of the message that about 50% of the respondents have been without power for more than 12 hours. Both the qualitative and quantitative methods have shown that infrastructure is an e-commerce hurdle in Lusaka. Moving obstacles to the successful and efficient e-commerce platforms, these prohibitions also contribute to lower customer satisfaction and preference of online shopping.

**Consumer Trust and Payment Security:** An element that stood out in many interviews was the question on trust. Most of those questioned mentioned that trust of online versions was at a very low level especially when it came to scam stores' on social media platforms. The most people chose to pay money either cash on delivery or via bank cards since these payment methods were believed to be the most secure. The quantitative data also supported this measurement, where only 8.7% respondents were sure that e-commerce platforms can be trusted, 45.3% felt occasional problems

of payment security and 6% reported frequent problems. This suggests that the findings of both qualitative and quantitative analyses have shown that the trust and payment security as barriers to the adoption of e-commerce.

Despite the challenges of infrastructure and trust, the convenience of e-commerce was identified as a significant factor that drove many interviewees to prioritize driver convenience. Customers pointed out the convenience of using products and time-saving techniques, such as avoiding home delivery. Many commented on this fact. More importantly, this was supported by the results of quantitative analysis where 43.3% of respondents stated that they prefer convenience over traditional shopping on the internet. The most popular online purchases were clothing and accessories, indicating a desire for convenience. Despite the limitations in infrastructure, convenience is still considered one of the primary drivers of e-commerce adoption, as demonstrated by the integration of qualitative and quantitative data. This indicates that enhancing user experience and reducing access barriers could significantly increase the demand for online retailing in Lusaka.

1. Internet and Mobile Penetration Interviewees also said they were happy with the growth of e-commerce as access to the internet and mobile subscriptions are increasing'. According to the quantitative data, 53.3% of respondents rated internet speed as "average," while 29.6% ranked it as fast. Furthermore, improved internet speeds were positively linked to satisfaction with e-commerce services ( $r = 0.878$ ). As mobile devices and internet services become more prevalent, the future of e-commerce is looking up with improved internet speed and connectivity.

2. Delivery Logistics delivery inefficiencies were a common theme among many of the questions asked during the interview, with topics including: delayed orders and limited delivery reach. They said they believe that the demand for e-commerce would increase with improved infrastructure and better delivery services. These concerns were reflected in the quantitative results, wherein traffic congestion was identified as the number one delivery challenge by 55.3% of respondents, followed by poor road conditions (20%). Moreover, 46% of those polled stated that the duration of delivery was a significant factor in their online shopping choices. The study's qualitative and quantitative outcomes indicate that addressing logistical inefficiencies is crucial to enhance consumer satisfaction and ensure efficient operation of e-commerce platforms in Lusaka.

3. E-Commerce Growth Potential: Many people interviewed said they believe e-commerce will continue to grow, provided that other major barriers like infrastructure and trust were addressed. According to respondents, 56.7% believed e-commerce would experience growth over the next five years, despite current difficulties and quantitative evidence supporting their perspective. The potential for e-commerce growth is being cautiously optimistic, both qualitatively and quantitatively, due to the need to address infrastructure, payment security, and delivery logistics.

## **5.4 Chapter Five: Summary of Findings**

This chapter presented key findings from both quantitative and qualitative data, highlighting the factors impacting e-commerce adoption in Lusaka, Zambia. From a demographic standpoint, adults between the ages of 18 and 34 emerged as the primary users of e-commerce, with gender and income stratum revealing participation gaps. These findings address Objective 1, demonstrating that specific demographic groups drive e-commerce growth in Lusaka.

Both the quantitative and qualitative data emphasize infrastructure limitations as a major barrier to e-commerce growth. Key infrastructure issues such as inconsistent electricity, poor internet access, and weak logistics systems were highlighted by participants, with 54% of survey respondents experiencing power cuts lasting longer than 12 hours and 28.7% facing frequent internet disruptions. In addition, residents of outlying areas reported poor road conditions and delayed deliveries, contributing to dissatisfaction with online shopping. These challenges are aligned with Objectives 2 and 3, demonstrating the need for solutions to overcome these infrastructure constraints and promote e-commerce growth.

The issue of trust and security, particularly in online payment systems, was a significant concern among both interviewees and survey respondents. Trust in online platforms was found to be low, especially regarding fraudulent social media stores. Most respondents preferred cash on delivery or bank card payments, which they perceived as more secure. Quantitative data revealed that only 8.7% of respondents trusted e-commerce platforms fully, while 45.3% experienced occasional payment security issues. Both qualitative and quantitative findings indicate that trust and payment security are critical barriers to e-commerce adoption.

Despite these challenges, the convenience of e-commerce was identified as a major driver for its adoption. Many interviewees prioritized the convenience of shopping online and the time-saving benefits it offers. The quantitative data also supported this, with 43.3% of respondents citing convenience as a key factor in their decision to shop online. Popular purchases, such as clothing and accessories, further reinforced the role of convenience in driving e-commerce growth. This suggests that improving the user experience and addressing barriers to access could significantly increase demand for online shopping in Lusaka.

The growing penetration of internet and mobile services was also noted as a positive trend for e-commerce. Both interviewees and survey respondents expressed satisfaction with the improvements in internet speed and mobile accessibility. Over half (53.3%) of respondents rated internet speed as "average," while 29.6% rated it as fast, and improved internet connectivity was positively correlated with higher satisfaction levels.

Logistical inefficiencies, including delivery delays and limited reach, were recurring themes in the interviews. The survey data further supported this, with 55.3% of respondents identifying traffic congestion as the leading delivery challenge, followed by poor road conditions (20%). Addressing these logistical issues is crucial for enhancing consumer satisfaction and ensuring efficient operation of e-commerce platforms in Lusaka.

Finally, despite the current challenges, there is cautious optimism about the future of e-commerce in Lusaka. Interviewees and survey respondents were generally hopeful that e-commerce would continue to grow, particularly if infrastructure, payment security, and delivery logistics issues were addressed. A majority (56.7%) of respondents believed that e-commerce would experience significant growth over the next five years.

In conclusion, the findings underscore that while infrastructure and trust remain key barriers, convenience and technological improvements provide a solid foundation for the growth of e-commerce in Lusaka. Both qualitative and quantitative data support the need for targeted interventions to address these challenges and facilitate the development of the e-commerce sector in the region.

# **CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS**

## **6.1 Introduction**

This chapter synthesizes the findings of the study, revises, and summarizes the results, addressing the research objectives and hypotheses which possibly may provide recommendations to stakeholders. Drawing on both quantitative and qualitative data, it discusses the implications of the results, situating them within the broader academic and practical context of e-commerce adoption in Lusaka. Additionally, this chapter highlights limitations and proposes avenues for future research to further understand the dynamics of e-commerce in developing economies, giving the potential to explore further within Zambia.

## **6.2 Conclusions**

The study explored the impact of infrastructure limitations on consumer behaviour and e-commerce adoption in Lusaka. The findings align with the research objectives demonstrating how infrastructure constraints, such as unreliable power supply, internet connectivity issues, and inadequate delivery logistics, significantly affect consumer trust, satisfaction, and the broader adoption of e-commerce. These infrastructural deficiencies directly affect consumer trust and satisfaction, constraining the overall growth of the sector and creating more challenge in e-commerce retail to keep up the speed of technological advancements and adopt accordingly. The research revealed that infrastructure issues hinder the smooth operation of e-commerce platforms, eroding consumer trust and making online shopping less attractive. As detailed, 54% of respondents reported prolonged electricity outages, and 28.7% cited frequent internet disruptions. These challenges were found to deter consumers from making online purchases and negatively impacted their overall shopping experience. This finding directly addresses the first objective of analysing the impact of infrastructure constraints on consumer behaviour. The study also evaluated how infrastructure limitations affect e-commerce adoption. The findings suggest that while convenience remains a key motivator for online shopping, infrastructure challenges - especially in payment security, delivery logistics,

and internet connectivity - are substantial barriers to wider adoption. Despite these barriers, the increasing use of mobile devices and internet access presents significant opportunities for growth in the sector. This directly speaks to the second objective, which is evaluating the effect of infrastructure limitations on e-commerce adoption. The study highlights both the hurdles and growth potential posed by infrastructure issues.

The study identifies critical remedies, such as investing in solar power for reliable energy, improving internet connectivity through public-private partnerships, and addressing delivery logistics. These interventions are crucial in mitigating the negative effects of infrastructure issues and can foster greater consumer trust and adoption. This section addresses the third objective, which is finding potential remedies for improving the negative impact of infrastructure limitations on e-commerce.

The demographic analysis revealed that the younger population, particularly those aged 18–34, are the most active users of e-commerce platforms. This trend reflects global patterns, where younger individuals are more likely to engage with digital technologies due to their familiarity with smartphones and the internet which is popular worldwide. Gender disparities also emerged, with women constituting a larger proportion of online shoppers. This aligns with established research that highlights women's dominant role in retail spending. These insights suggest that tailored strategies targeting younger and female demographics could enhance engagement and adoption.

Infrastructure challenges were a recurring theme throughout the study. Most respondents reported prolonged power outages and frequent internet disruptions, with 54% experiencing electricity outages lasting over 12 hours and 28.7% citing regular internet interruptions. These issues not only impede the functionality of e-commerce platforms but also erode consumer trust. Furthermore, delivery logistics posed significant challenges, with 46% of respondents identifying traffic congestion, poor road conditions, and high transportation costs as barriers to timely delivery. These findings underscore the urgent need for infrastructural investments and innovative solutions to enhance the operational efficiency of e-commerce systems.

Consumer trust emerged as a pivotal factor influencing e-commerce behaviour. The study revealed low levels of trust in online payment systems, with only 8.7% of respondents expressing full confidence in the security of these platforms, while 45.3%

reported occasional concerns about fraud and data protection. These concerns are further compounded by the lack of transparent policies and seller verification systems, which are critical to building consumer confidence. Addressing these issues through secure payment systems and transparent operational practices is essential to fostering long-term trust and engagement, without the implementation of cybersecurity measures and safety, e-commerce adoption will be further delayed by society.

Despite these challenges, convenience was identified as a key motivator for e-commerce adoption. Respondents highlighted the time-saving benefits and ease of access provided by online shopping, with 43.3% indicating that convenience was their primary reason for choosing e-commerce over traditional shopping. This finding aligns with global studies that emphasize the importance of convenience as a driver of online shopping behaviour. Additionally, the increasing penetration of mobile technologies and internet services offers significant opportunities for growth. With 56.7% of respondents expressing optimism about the future of e-commerce in Lusaka, the sector holds immense potential, provided that key challenges are addressed. The conclusion is that consumers are keen to adopt and engage more in e-commerce activities due to convenience but the current infrastructure challenges cause distrust and uncertainty.

## 6.3 Recommendations

The findings of this study highlight several critical areas requiring attention to enhance e-commerce adoption in Lusaka. Reliable infrastructure is foundational for the growth of the sector. Investments in alternative energy sources, such as solar power, are necessary to mitigate the impact of power outages, while expanding broadband coverage and improving internet speeds through public-private partnerships can address connectivity challenges. Reliable electricity will support uninterrupted e-commerce operations and enhance consumer trust. This addresses the need for remedies for improving the negative impact of infrastructure limitations on e-commerce.

Delivery logistics also demand urgent attention. Developing efficient last-mile delivery systems and leveraging technology for route optimization can significantly reduce delivery times and costs, thereby improving consumer satisfaction.

Building consumer trust is another priority. Secure payment systems with advanced encryption and fraud prevention measures are essential to addressing concerns about data security. Additionally, introducing seller verification programs and transparent return policies can enhance credibility and foster trust among consumers. Marketing strategies should be tailored to younger and female demographics, as these groups constitute the largest segments of e-commerce users. Personalized promotions, targeted advertisements, and engagement through social media platforms can help capture and retain this demographic or target audience.

Public awareness and digital literacy are critical to connecting the digital divide. Community outreach programs and training initiatives can empower consumers, particularly those from older and low-income groups, to engage confidently with e-commerce platforms. Finally, supportive policies and regulatory frameworks are vital to create an enabling environment for e-commerce. Regarding government intervention and contribution to support, tax incentives and subsidies for e-commerce businesses can encourage innovation and growth, while strengthened consumer protection laws can address issues related to fraud and data privacy.

## **6.4 Limitations and Future Research**

While this study provides valuable insights, it is limited by its focus on Lusaka and a sample size of 150 respondents. Expanding the geographic scope to include rural areas would provide a more comprehensive understanding of e-commerce adoption across Zambia. Additionally, further studies could examine the impact of emerging technologies, such as blockchain and artificial intelligence, on addressing infrastructure limitations in e-commerce, which would provide insights into how modern technologies can overcome infrastructure challenges. Longitudinal studies tracking changes in consumer behaviour and infrastructure development over time would also be beneficial.

## **6.5 Final Remarks**

In conclusion, this study underscores the significant potential for e-commerce growth in Lusaka, provided that key challenges related to infrastructure, trust, and logistics are addressed. To consider implementing the stated recommendations outlined in this chapter, stakeholders can create a more inclusive and efficient e-commerce ecosystem. Such advancements would not only drive economic growth but also improve consumer welfare by enhancing access to goods and services, generally supporting the economy.

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## Appendices

### **Appendix A: Survey Questionnaire on E-Commerce Adoption and Consumer Behaviour in Lusaka, Zambia**

*The following questionnaire was used to collect data for this study. Respondents were provided with these exact questions, including the listed answer choices.*

*The survey was designed to assess the impact of infrastructure limitations on consumer behaviour and e-commerce adoption in Lusaka, Zambia.*

#### **Dear Respondent,**

My name is **Eszter Németh**, and I am conducting this survey as part of my research for a **Master's degree in Marketing at the University of Lusaka**. The research aims to explore how **infrastructure challenges impact online shopping behaviour and e-commerce adoption** in Lusaka, Zambia. Your participation is crucial in understanding these challenges and improving the e-commerce experience for consumers in the city.

#### **Why Your Participation Matters:**

The insights you provide will help identify key issues in Lusaka's e-commerce sector and offer practical solutions that benefit both consumers and businesses. Your responses will remain **anonymous and confidential**.

#### **Instructions:**

- Please answer all questions honestly based on your personal experiences with online shopping.
- There are **both multiple-choice and open-ended questions**. For open-ended questions, feel free to share your thoughts in as much detail as you like.
- The survey should take about **10-15 minutes** to complete. Your time and feedback are greatly appreciated.

**Thank you for participating.**

#### **Section 1: Consent**

By checking this box, you confirm and agree to your participation in the survey, understanding the information outlined above.

I have read and understood the instructions about my participation in the survey. I am aware of my right to withdraw from the study without any consequences. I confirm my participation is voluntary.

## **Section 2: Demographic Information (Quantitative)**

### **1. Age**

18-24

25-34

35-44

45-54

55+

### **2. Gender**

Male

Female

### **3. Employment status**

Employed

Self-employed

Student

Unemployed

Other (please specify): \_\_\_\_\_

### **4. Income Level**

Below K2,000

K2,000 - K5,000

K5,001 - K10,000

Above K10,000

### **5. How often do you shop online?**

Frequently (once a week or more)

Occasionally (once or twice a month)

- Rarely (a few times a year)
- Never

**6. What is your average monthly expenditure on online purchases?**

- Below K500
- K500 - K1,000
- K1,000 - K2,500
- Above K2,500

**Section 3: Awareness and Use of E-Commerce (Mixed Quantitative & Qualitative)**

**7. Are you aware of online shopping as an option for purchasing goods and services?**

- Yes
- No

**8. Do you prefer traditional shopping or online shopping?**

- Traditional shopping (in-store)
- Online shopping (apps, online platforms)
- Other: \_\_\_\_\_

**9. What types of products do you typically purchase online?**

- Clothing and Accessories
- Electronics
- Groceries
- Home Appliances
- I don't purchase anything online
- Other: \_\_\_\_\_

**10. Which online shopping platforms or retail outlets do you use for your online purchases in Lusaka?**

- Social media stores (Facebook, Instagram)
- Yango delivery (food, beverages)

- Umoyo (health, fitness)
- Fast Mobile Centre (electronics, devices)
- Radian (electronics, home appliances)
- AfriSupermarket (groceries)
- I don't shop online in Lusaka
- Other: \_\_\_\_\_

**11. Do you purchase products online only from Lusaka-based stores, or do you also buy from global platforms?**

- Only from Lusaka-based stores
- From both Lusaka and other cities in Zambia
- From both Lusaka and global platforms
- Only from global platforms

#### **Section 4: Internet Connectivity (Quantitative)**

**12. How would you rate the reliability of your internet connection?**

- 1 Very Unreliable
- 2
- 3
- 4
- 5 Very Reliable

**13. How often do you experience interruptions in your internet service?**

- Never
- Rarely
- Occasionally
- Frequently
- Always

**14. What is the average speed of your internet connection?**

- Very fast
- Fast
- Average

- Slow
- Very slow

### **Section 5: Electricity Supply (Quantitative)**

**15. How would you describe the reliability of your electricity supply?**

- Very reliable
- Somewhat reliable
- Neutral
- Somewhat unreliable
- Very unreliable

**16. How often do you experience power outages?**

- Never
- Rarely
- Occasionally
- Frequently
- Always

**17. What is the average duration of power outages you experience?**

- Less than 1 hour
- 1-3 hours
- 3-6 hours
- 8-12 hours
- More than 12 hours

**18. How do power outages affect your ability to carry out e-commerce activities?**

- No effect
- Moderately impedes
- Greatly impedes

**19. Do you have backup power solutions (e.g., generators, solar systems, inverter etc.)?**

- Yes, and they are reliable
- Yes, but they are unreliable
- No, I do not have backup power

**20. What type of backup power solution do you use to continue online shopping during power outages?**

- Generator
- Solar Power
- Uninterruptible Power Supply (UPS)
- Inverter
- None
- Other: \_\_\_\_\_

**Section 6: Delivery and Logistics (*Quantitative*)**

**21. How would you rate the efficiency of delivery services in Lusaka?**

- 1 Very Unreliable
- 2
- 3
- 4
- 5 Very Reliable

**22. How often do you face delays in receiving orders?**

- Always
  - Often
  - Sometimes
  - Rarely
  - Never
- Other:

**23. What is the possible cause you face challenges with delivery services?**

- Poor road conditions
- Traffic congestion
- High transportation costs
- Other: \_\_\_\_\_

**24. How would you rate the cost of transportation for e-commerce in Lusaka?**

- Very affordable
- Affordable
- Neutral
- Expensive
- Very expensive

**Section 7: Payment Systems (Quantitative)**

**25. How would you rate the availability of digital payment options in Lusaka?**

- 1 Very Unavailable
- 2
- 3
- 4
- 5 Very Available

**26. How often do you encounter issues with online payment transactions?**

- Never
- Rarely
- Occasionally
- Frequently
- Always

**27. What is your preferred method of digital payment for e-commerce transactions?**

- Mobile money
- Bank transfer
- Credit/Debit card
- E-wallet
- Other: \_\_\_\_\_

**28. How do payment system issues affect your confidence in making online purchases?**

- Significantly increases
- Somewhat increases
- No impact
- Somewhat decreases
- Significantly decreases

**29. Have you faced any challenges with payment security in online transactions?**

- Yes, frequently
- Yes, occasionally
- No, never

**Section 8: Experiences with E-Commerce Platforms (*Mixed Quantitative & Qualitative*)**

**30. Rate the following infrastructure-related challenges in Lusaka's e-commerce on a scale of 1 (Not an Issue) to 5 (A Major Issue):**

(Please tick the appropriate box)

Internet Connectivity:

- 1 (Not an Issue)
- 2
- 3

- 4
- 5 (A Major Issue)

Delivery Logistics:

- 1 (Not an Issue)
- 2
- 3
- 4
- 5 (A Major Issue)

Payment Security:

- 1 (Not an Issue)
- 2
- 3
- 4
- 5 (A Major Issue)

Power Supply Reliability (Load Shedding):

- 1 (Not an Issue)
- 2
- 3
- 4
- 5 (A Major Issue)

**31. What specific challenges have you faced with e-commerce in Lusaka related to these infrastructure issues?**

(Open-ended response)

**32. Which of the following factors most affects your decision to shop online?**

(Please tick the appropriate box)

- Internet Speed/Connectivity
- Delivery Time

- Trust in Payment Methods
- Product Availability
- Other: \_\_\_\_\_

**Section 9: Consumer Trust and Satisfaction (Mixed Quantitative & Qualitative)**

**33. How much do you trust online shopping platforms to deliver reliable products and services?**

(Please tick the appropriate box)

- I trust them completely
- I trust them somewhat
- I do not trust them at all

**34. How concerned are you about the security and confidentiality of your personal and financial data when shopping online?**

(Please tick the appropriate box)

- Not concerned
- Slightly concerned
- Very concerned

**35. On a scale of 1 to 5, how satisfied are you with the current state of e-commerce services in Lusaka?**

(Please tick the appropriate box)

- 1 (Very Dissatisfied)
- 2
- 3
- 4
- 5 (Very Satisfied)

**36. In your opinion, how do infrastructure issues (e.g., internet, electricity, logistics) affect your trust in online shopping platforms?**

(Open-ended response)

**37. What would increase your trust and satisfaction with e-commerce platforms? (You may select more than one)**

(Please tick the appropriate boxes)

- Faster Delivery
- Better Payment Security
- Reliable Internet Service
- Improved Product Availability
- Consistent Power Supply
- Other: \_\_\_\_\_

**38. To what extent do infrastructure challenges prevent you from making repeat online purchases?**

(Please tick the appropriate box)

- Not at all
- Slightly
- Moderately
- Significantly
- Completely

**Section 10: E-Commerce Adoption and Future Growth (Mixed Quantitative & Qualitative)**

**39. How likely are you to recommend online shopping to others in Lusaka, given the current infrastructure situation?**

(Please tick the appropriate box)

- Very Unlikely
- Unlikely
- Neutral
- Likely
- Very Likely

**40. How do infrastructure issues influence your decision to start or maintain an online retail business?**

(Please tick the appropriate box)

- Strongly encourages
- Somewhat encourages
- No impact
- Somewhat discourages
- Strongly discourages

**41. Do you think e-commerce will grow in Lusaka over the next 5 years despite infrastructure challenges?**

(Please tick the appropriate box)

- Yes
- No
- Maybe (Unsure)

**42. If you answered "Yes" or "No," please explain why you believe e-commerce will or will not grow in Lusaka.**

(Open-ended response)

**43. What support or changes would help you overcome current infrastructure challenges related to e-commerce?**

(Please tick the appropriate boxes)

- Government initiatives
- Private sector improvements
- Community-based solutions
- Technological advancements
- Other: \_\_\_\_\_

**44. What improvements would you like to see in Lusaka's e-commerce sector to encourage more people to shop online?**

(Open-ended response)

## **Appendix C: INTERVIEW QUESTIONS**

### **Section 1: E-commerce Usage and Behaviour**

#### **1. E-commerce Engagement:**

- × Can you describe your experiences with online shopping? How often do you shop online, and what kind of products do you usually buy?
- × What platforms or websites do you prefer when shopping online? Why do you prefer these platforms?

#### **2. Shopping Preferences:**

- × Do you usually shop from local e-commerce platforms or international ones? Why?
- × How do you feel about the variety of products available online compared to physical stores in Lusaka?

### **Section 2: Infrastructure Challenges**

#### **1. Internet Connectivity:**

- × How would you describe the internet connectivity in your area? How does it affect your online shopping experience?
- × Have you ever experienced issues like slow internet speeds or disconnections while trying to shop online? How did you handle it?

#### **2. Logistics and Delivery:**

- × What are your experiences with delivery services for online purchases? Have there been delays or issues related to transportation? (local or global)
- × How does the reliability of delivery services influence your decision to shop online?

#### **3. Power Supply:**

- × Have power outages or electricity issues ever interrupted your online shopping experience? Can you explain how?

### **Section 3: Consumer Trust and Satisfaction**

#### **1. Trust in E-commerce Platforms:**

- × How confident do you feel when making payments online? Are you ever concerned about security issues or fraud?
- × What factors make you trust a particular e-commerce platform?

## **2. Satisfaction with Services:**

- × Can you describe a positive experience you had with online shopping? What made it satisfying?
- × Have you had any negative experiences, such as failed deliveries, wrong products, or poor customer service? How did this impact your decision to use that platform again?

## **Section 4: Attitudes Toward E-commerce Growth**

### **1. Perception of Future E-commerce:**

- × In your opinion, how could online shopping in Zambia improve? What changes would you like to see, especially regarding infrastructure?
- × Do you think more people in Lusaka would use e-commerce if internet and delivery services were more reliable?

### **2. Barriers to Adoption:**

- × What, in your view, are the main barriers preventing more people from shopping online in Zambia?

## **Conclusion**

### **Final Thoughts:**

- × Is there anything else you would like to share about your experiences with e-commerce or any suggestions for improvement?

## Appendix D: ETHICAL CLEARANCE LETTER



### SCHOOL OF POSTGRADUATE STUDIES

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Phone: +260211258505, 258409 Fax +260211233409; Cell +260976075850,961917862,  
E-mail: unilus@zamnet.zm, ictar@zamnet.zm

### UNILUS-RESEARCH ETHICS COMMITTEE

Ref no: FWA00033228-19712/24

Date: 13<sup>th</sup> December 2024

**STUDENT NAME: Eszter Németh**

**RESEARCH TOPIC: Impact of Infrastructure Limitations on Consumer Behaviour and E-Commerce in the Online Retail Sector of Lusaka, Zambia.**


The above research was submitted to the research ethics committee for review. The study has no major ethical problems and is approved subject to the following:

1. The study cannot be changed without express permission of the UNILUS research ethics committee.
2. Approval from the necessary authority should be sought.

**Congratulations and the committee wishes you success in your work.**

**Professor Kasonde Bowa**  
MSc(Glasgow), M.Med(UNZA), FRCS(Glasgow), FACS, FCS, DPH(LSTMH), MPH(UCL)  
Chairman- UNILUS REC  
Professor of Urology and Consultant Urologist  
Deputy Vice-Chancellor – Research and Innovation  
Executive Dean - School of Medicine and Health Sciences

# Appendix E: SIMILARITY REPORT

 PLAGIARISM CHECK.ORG

0%63.90%SCANNED ON: 20 JAN 2025, 8:52 PM

SIMILARITY OVERALL      POTENTIALLY AI

**AI Detector Results**

Highlighted sentences with the lowest perplexity, most likely generated by AI.

● LIKELY AI  
35.96%● HIGHLY LIKELY AI  
27.94%

## Report #24481585

SCHOOL OF POSTGRADUATE STUDIES IMPACT OF INFRASTRUCTURE  
LIMITATIONS ON CONSUMER BEHAVIOUR AND E-COMMERCE IN THE ONLINE  
RETAIL SECTOR OF LUSAKA, ZAMBIA.  
A DISSERTATION SUBMITTED TO THE SCHOOL OF POSTGRADUATE  
STUDIES, UNIVERSITY OF LUSAKA IN PARTIAL FULFILLMENT OF THE  
AWARD OF THE MASTER OF SCIENCE IN MARKETING. BY ESZTER NÉMETH  
MSCMKT22216392 ©2025. Declaration I, Eszter Németh, declar  
e that this dissertation titled "IMPACT OF INFRASTRUCTUR  
E LIMITATIONS ON CONSUMER BEHAVIOUR AND E-COMM  
ERCE IN THE ONLINE RETAIL SECTOR OF LUSAKA, ZAMBIA" is my own original  
work and that all sources and references  
have been duly acknowledged  
. This dissertation has not been submitted, in whole or  
in part, for any degree or examination at any other  
academic institution. I confirm that I have complied with the  
ethical guidelines of University of Lusaka throughout the  
research process. Student Signature: \_\_\_\_\_ Date: \_  
\_\_\_\_\_  
Supervisor Signature: \_\_\_\_\_  
Date: \_\_\_\_\_ ii Acknowledgments I would  
like to express my deepest gratitude to my supervisor, Dr  
Judith Charumbira, for her invaluable guidance, su