ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE

DEPARTMENT OF MARKETING MANAGEMENT

PRICE FAIRNESS AND SERVICE QUALITY AS DRIVERS OF INFORMAL-FORMAL MARKET IMBALANCE:

THE MEDIATING ROLE OF CONSUMER PERCEIVED VALUE IN THE INJERA SECTOR

The Thesis Submitted to Addis Ababa University School of Commerce, in partial fulfillment of the requirements for the award of degree of Master of Science in Digital Marketing and E-commerce

By

Fikadeselassie Melaku

Advisor

Dr. Andinet Worku

Addis Ababa, Ethiopia

JUNE 2026

DECLARATION

I, Fikadeselassie Melaku, herewith declare that entitled as “Price Fairness and Service Quality as Drivers of Informal-Formal Market Imbalance: The Mediating Role of Consumer Perceived Value in the Injera Sector” thesis is my original work that has been conducted under the counseling and instruction/ supervision of my advisor, Dr. Andinet Worku. Moreover, I also declare as a whole or in part, to any other institution and university for any kind of award including degree, diploma, or any other academic qualification; this thesis has not been submitted. Support in doing this research has been properly acknowledged. Besides all this, Academic standard materials used in this research, and source of information used were also acknowledged and cited properly.

Name: _____

Signature: _____

Date; _____

APPROVAL

Addis Ababa University

School Of Commerce Graduate Studies

Department Of Marketing Management

Title

PRICE FAIRNESS AND SERVICE QUALITY AS DRIVERS OF INFORMAL-FORMAL MARKET IMBALANCE:

THE MEDIATING ROLE OF CONSUMER PERCEIVED VALUE IN THE INJERA SECTOR

By: Fikadeselassie Melaku

BOARD OF EXAMINERS APPROVAL

Advisor

Name	Signature	Date
_____	_____	_____

Internal Examiner

Name	Signature	Date
_____	_____	_____

External Examiner

Name	Signature	Date
Essayas Taye (Phd)		_____

ACKNOWLEDGEMENT

For their guidance, protection, and blessing, I principally would like to express my indebtedness to almighty God and his holy mother St. Mary Kidane Mihret throughout the completion of this thesis.

Here again, my special thanks and appreciation go to my spiritual father who continuously guided me throughout my life with his priceless advice, Memhir Tesfaye Shewaye.

I would also like to thank and share my heartfelt appreciation to my polite advisor Dr. Andinet Worku, for his academic support, his energy and encouragement as well as his quick response and guidance valuable that notably contributed in order to succeed the completion of this study.

Since, without their cooperation it would not have been possible, my admiration also goes to all respondents in Kolfe Keranio Wereda 08 who were willing in providing the necessary data for this study.

I was so lucky to have such instructors during the past two years. I would like to appreciate and thank all my instructors for their support and guidance, especially my recognition goes to Dr. Belaynesh, who is an amazing teacher and truly enriched my skills and knowledge that amplified my academic experience.

Eventually, I offer my appreciation to my family, mainly my brother Abel Tekle Hagos, and my colleagues for their encouragement and motivation throughout the whole study period.

ABSTRACT

This study aim is to explore the effect of price fairness and service quality (reliability, responsiveness, and assurance) on the perceived formal – informal market imbalance of injera in Kolfe Keranio Woreda 08, Addis Ababa.

The research explores how consumers perceive pricing and quality of service attributes in choosing between a compliant formal bakery and other suppliers, due to structural disadvantages for compliant formal bakeries in production based on electricity. The study employed explanatory, cross-sectional quantitative research design and primary data was gathered from 120 injera consumers by using a structured questionnaire.

Data analysis consisted of descriptive statistics, Pearson correlation, regression diagnostics, and path modeling with Hayes' PROCESS Macro (Model 4) with 5,000 bootstrapped samples for a 95% confidence interval. The findings of the empirical results show that the price fairness has a positive and strong effect on the perceived value of the customers, and service quality also has a positive effect, but to a lesser extent. Similarly, consumer perceived value significantly affects consumer perceived formal–informal market imbalance.

Significantly, the path analysis confirms that both independent variables have a direct path to the market imbalance, which is mediated in part by consumer perceived value, as the direct path remains statistically significant when controlling for perceived value.

Finally, this research shows that the imbalance of the market is not simply a structural imbalance in the production process, but rather the imbalanced results of consumers' cognitive interpretation of the value gap between formal and informal producers. The study suggests, it is necessary to upgrade the electrical grid infrastructure, reduce non-technical losses of utilities and power theft, establish transparent electrical pricing, and enhance power reliability to restore equity, ensuring the competitiveness of formal producers.

The keywords: *Price Fairness, Service Quality, Consumer Perceived Value, Perceived Informal–Formal Market Imbalance, Electricity Reliability, Injera Market.*

TABLE OF CONTENTS

Contents **Pages**

DECLARATION i

APPROVAL PAGE ii

ACKNOWLEDGEMENT iii

ABSTRACT iv

LIST OF TABLES ix

LIST OF FIGURES x

LIST OF ABBREVIATIONS xi

1. CHAPTER ONE: INTRODUCTION 1

1.1 Background of The Study 1

1.2 Problem Statement 3

1.3 Research Questions 5

1.3.1 General Research Question 5

1.3.2 Specific Research Questions 5

1.4 Objectives of the study 5

1.4.1 General Objective 5

1.4.2 Specific Objectives 5

1.5 Significance of the Study 6

1.6 Scope of the Study 7

1.7 Limitations of the Study 7

1.8 Organization of the Study 8

2. CHAPTER TWO: REVIEW OF RELATED LITERATURE 10

2.1 Introduction 10

2.2 Theoretical Literature Review 10
2.2.1 PRICE Fairness as a Proxy of Electricity Theft 10
2.2.2 Service Quality in Electricity Supply 12
2.2.3 Consumer Perceived Value 13
2.2.4 Perceived Informal-Formal Market Imbalance 14
2.3 Empirical Literature Review 16
2.3.1 Price Fairness 16
2.3.2 Service Quality 17
2.3.4 Perceived Informal-Formal Market Imbalance 19
2.4 Hypotheses Development 21
2.5 Conceptual Framework 22
2.6 Research Gap 24
3. CHAPTER THREE: RESEARCH METHODOLOGY 26
3.1 Introduction 26
3.2 Research Approach 26
3.3 Research Design 26
3.4 Data Types and Sources 27
3.5 Study Area 27
3.6 Population of the Study 28
3.7 Sample Size and Sampling Technique 28
3.8 Measurement of Variables 28
3.9 Data Collection Procedures 29
3.10 Data Analysis Techniques 30
3.11 Ethical Considerations 30
4. CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION 32

4.1 Introduction 32
4.2 Demographic Characteristics of Respondents 33
4.2.1 Age Distribution 33
4.2.2 Gender Distribution 34
4.2.3 Occupational Status 35
4.2.4 Income Level 36
4.2.5 Family Size 37
4.2.6 Frequency of Injera Purchase 38
4.3 Descriptive Statistics of Key Variables 39
4.3.1 Price Fairness 40
4.3.2 Service Quality 40
4.3.3 Consumer Perceived Value 41
4.3.4 Perceived Informal-Formal Market Imbalance 41
4.4 Reliability Analysis of the Instruments 42
4.5 Validity of The Instrument 43
4.6 Correlation Analysis 44
4.7 Regression Assumption and Mediation Testing 45
4.7.1 Regression Assumption Testing 46
4.8 Hypothesis Testing Using Hayes PROCESS Macro (Model 4) 49
4.8.1 Mediation Analysis: Price Fairness Model 49
4.8.2 Mediation Analysis: Service Quality Model 51
4.9 Conclusion of Mediation Analysis 54
4.10 Summary of Key Findings 55
5. CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS 58
5.1 Introduction 58

5.2 Summary of Key Findings 60
5.2.1 Influence of Price Fairness on Consumer Perceived Value 61
5.2.2 Influence of Service Quality in Consumer Perceived Value 61
5.2.3 Consumer Perceived Value and Market Imbalance 62
5.2.4 Mediation Role of Consumer Perceived Value 63
5.3 Discussion of Key Findings 64
5.4 Conclusions 66
5.5 Recommendations 68
5.5.1 Ethiopian Electric Utility and Energy Authorities 68
5.5.2 Formal Injera Producers 69
5.5.3 Policymakers and Regulatory Bodies 70
5.5.4 Consumers 71
5.6 Implications of the Study 72
5.6.1 Theoretical Implications 73
5.6.2 Practical implications 74
5.6.3 Policy implications 74
5.7 Limitation of the study 75
5.8 Suggestion for Future Researchers 76
5.9 Final Remarks 77
REFERENCES 79
APPENDIX A 82

LIST OF TABLES

Table 4.1: Age Distribution of Respondents……31
Table 4.2: Gender Distribution of Respondents.....32
Table 4.3: Occupational Status of Respondents……...33
Table 4.4: Income Level Distribution……..34
Table 4.5: Family Size of Respondents……35
Table 4.6: Frequency of Injera Purchase……..36
Table 4.7: Descriptive Statistics of Key Variables……...37
Table 4.8: Reliability Test Results……...…….40
Table 4.9: Pearson Correlation Matrix…….….42
Table 4.10: Multicollinearity Test (Tolerance and VIF Values)…….…..44
Table 4.11: Mediation Results (Price Fairness Model)…….……48
Table 4.12: Mediation Results (Service Quality Model)…….……..49

LIST OF FIGURES

Figure 4.1: Age Distribution……32
Figure 4.2: Gender Distribution.....33
Figure 4.3: Occupational Status……...……34
Figure 4.4: Income Level Distribution……...……..35
Figure 4.5: Family Size Distribution……...…….36
Figure 4.6: Frequency of Injera Purchase……...…….....37
Figure 4.7: Mean Comparison of Key Variables…….....38
Figure 4.8: Normality Test……..…….……45
Figure 4.9: Linearity Test……...……..46
Figure 4.10: Heteroscedasticity Test……..…...47

LIST OF ABBREVIATIONS

EEU – Ethiopian Electric Utility

EEA – Ethiopian Energy Authority

NTL – Non-Technical Loss

CPV – Consumer Perceived Value

PF – Price Fairness

SQ – Service Quality

IMB – Informal–Formal Market Imbalance

SPSS – Statistical Package for Social Sciences

VIF – Variance Inflation Factor

MoWE – Ministry of Water and Energy

CI – Confident Interval

SME – Small and Medium Enterprise

1. CHAPTER ONE: INTRODUCTION

1.1 Background of The Study

In our world, electricity has a great importance on daily life, but when it comes to a business that is exclusively reliant on electricity powered technology, it is the lifeblood of the business. The commercial injera industry is an example of that. Ethiopia's performance data reveal that while the country is advancing in grid electrification, major losses in the electrical systems remain and contribute to the poor reliability of supply and efficiency of electricity service, especially in urban areas, which is driven by longstanding problems of infrastructure (Ethiopian Electric Utility., 2025).

The effect is greatest in Kolfe Keranio Wereda 08. Formal producers of injera face a constant and relentless problem of power outages here as a direct consequence of the electricity theft itself: unmetered electricity connections and extensive electricity meter tampering. This illegal practice not only hinders the bakery in operating in the day to day but also directly deprives the revenue of the electric company or hinders the electric company from investing in its infrastructure or its maintenance which is badly needed. The work of Babar, Carr and Thomson is able to show the adverse impacts on local grid stability that these practices have. It's a tremendous financial concern (Babar et al., 2022; Carr & Thomson., 2022).

Ethiopian Electric Utility (EEU) reports that the utility losses more than 50 million birr due to non-technical losses, meter tampering and bootleg connections in less than a year (Ethiopian Electric Utility., 2025). According to an article in Addis Standard published in March 2025, the illegal overloads are damaging critical equipment like transformers, cables, distribution lines, etc., in the region (Addis Standard., 2025). Glauner et al. (2016) found that as a result, the honest and paying customers of such a business have to suffer the repercussions: poor service quality and high operational costs. Arkorful (2022) said that the effect can impede the growth of small businesses.

If utilities lose huge amounts of money due to non-technical theft, they become victims to a financial black hole. Over the past several years, studies by Zhang, Nadeem and Arshad have revealed that these revenue ceilings have a direct impact on the investments of the utilities in grid modernization, in regular equipment maintenance, and in equipment quality improvement (Nameed & Arshad, 2021; Zhang et al., 2025). The most advanced technology to identify power theft automatically exists worldwide, but Blazakis says it is not much in use in developing countries, due to the huge budget requirements and lack of technical skills (Balazakis et al., 2020). This leads to an extremely imbalanced and unequal local market. Informal producers who use stolen electricity have extremely low production costs; Smith pointed out in his pioneering research on the market. They are not dependent on any utilities and can rival any decent businesses (Smith, 2024).

The World Energy Council calls this unlevel playing field a significant disadvantage for the market for legal and formal producers (World Energy Council, 2025). Xia et al. (2024) suggested the reason for this price difference over time leads consumers to be irrational. Customers start to believe that they are paying a lower-than-average rate for electricity and think of the next rate as “unfair” (Bolton et al., 2003).

This study aims at using the renowned Parasuraman model of SERVQUAL to gain insight into the impact of those interruptions on the customer's perception. But, in most cases there is little direct, face-to-face contact between the electricity company and the end user, and the dimensions of "empathy" and "tangibles" have been intentionally excluded from this research (Parauraman et al., 1988). Compared to the hospitality or retail industry, electricity supply is a very standardized business.

This study will be restricted to just three of the dimensions in SERVQUAL most relevant to a power consumer: Reliability: Utility's capability of supplying continuous power supply service. Assurance: consumers' trust and confidence in the utility provider's capability to operate as per accepted standards. Responsiveness: Utility's responsiveness to resolving the cause of a blackout, failure of hardware or disruption of service. The present state of quality of electricity services is poor in all three sectors in Ethiopia.

The Ministry of water and energy noted that an unbroken chain of incidents of outage, transformer failure and voltage instability occur with regularity which impact the production of the local area (Ministry of Water and Energy, 2020). In addition, Ethiopian Electric Power. (2026). Report publicly announced its findings that the distribution systems are overloaded and age-old equipment negatively impacting the small and productive businesses. Zeithaml's classical consumer theory suggests that there exist full mediation relationships between the two factors of price fairness and service quality, and that these two mediation relationships are called "perceived value" (Zeithmal et al., 1988). If the service is poor and the cost is high, the value of the consumer will become very low, and it will no longer be accepted.

As consumers are aware of a decline in the value of the formal market, they are more likely to withdraw completely from the market and switch to the informal market (which they perceive is cheaper) as the Smith's market models would predict (Smith, 2024). It is evident that the price fairness and service quality are significant to consumer behavior, but the limited empirical evidence found in the literature is important in the study of the relationship between the two in electricity dependent businesses.

This project is directly aimed at the question(s) raised in these studies. This paper aims to discuss the dynamics between the formal and informal sector, particularly the price fairness, service quality and consumer perceived value of the injera sector in Kolfe Keranio Woreda 08.

1.2 Problem Statement

Formal injera producers are facing competition from informal producers and consumers have low switching costs between formal producers in Kolfe Keranio Woreda 08. There is a distinct difference between the formal and informal producers with the cost of regulatory approval, added operating expenses and rigorous structural requirements of formal producers being met. It is a level playing field which directly affects consumers' perceptions of the fairness of prices and quality of services.

Price fairness is a key factor in this market affecting choice for consumers. Customers make comparisons between the price offered by the formal producer and the informal producer; if they feel that the price is justified and it meets with the value of the product, then they develop a positive attitude towards the formal producer and thus become loyal customers of the formal producer. But when the price seems too much, the customer will swiftly switch to a lower-priced, informal option.

Meanwhile, the quality of service is a crucial factor of distinction. For the injera sector service quality is more than just having reliable electricity. This will depend on the product, consistency, hygiene, supply guarantees and the service in general. The “best of breed” in these areas help increase consumer confidence and provides a definite sense of why consumers should trust formal producers over unformal producers.

So the battle is about consumer perceived value; that is, the mental continuum in which purchase decisions are made based on consumers' assessment of all benefits against all costs. If the perceived value is high, the consumers don't switch to the informal one because of being attached to the formal one and if the perceived value is low, the consumers switch to the informal one to further the imbalance in the formal market.

Current studies have focused on areas such as price, service quality and informal markets separately, but there is a lack of knowledge on how price fairness and service quality work together to influence market imbalance of the injera market. Moreover, the effect of consumer perceived value as a mediate variable (or bridge) between these factors has not been studied extensively. Such gaps are addressed in the present study by exploring the interaction between the concepts of "price fairness" and "service quality" that could help balance the formal and informal market and the concept of "consumer perceived value".

1.3 Research Questions

1.3.1 General Research Question

How do price fairness and service quality influence consumers' propensity to purchase from informal injera producers, as mediated by consumer perceived value?

1.3.2 Specific Research Questions

1. To what extent does perceive price fairness influence perceived informal–formal market imbalance?
2. How does service quality (reliability, assurance, responsiveness) influence perceived informal–formal market imbalance?
3. What is the relationship between perceived price fairness and consumer perceived value?
4. How does service quality affect consumer perceived value?
5. What is the relationship between consumers' perceived value and perceived informal–formal market imbalance?
6. Does consumer perceived value mediate the relationship between price fairness, service quality, and perceived informal–formal market imbalance?

1.4 Objectives of the study

1.4.1 General Objective

To examine how price fairness and service quality influence consumers' propensity to purchase from informal injera producers, as mediated by consumer perceived value.

1.4.2 Specific Objectives

1. To examine the effect of perceived price fairness on perceived informal–formal market imbalance.

2. To assess the effect of service quality (reliability, assurance, responsiveness) on perceived informal–formal market imbalance.

3. To investigate the relationship between perceived price fairness and consumer perceived value.

4. To examine the effect of service quality on consumer perceived value.

5. To determine the effect of consumer perceived value on perceived informal–formal market imbalance.

6. To assess the mediating role of consumer perceived value between price fairness, service quality, and informal–formal market imbalance.

1.5 Significance of the Study

This study provides important insights to a broad range of stakeholders in the injera industry on the direct connection between quality electricity service and price fairness and their impact on formal versus informal food markets. Namely, the following groups are targeted groups of this research:

Formal Injera Producers: It provides and equips legitimate business owners with a strategic awareness of the competitive choke points that result from the shortcomings of the electrification, and assists them in managing their financial burden due to an unfair competition in the market.

Ethiopia is directly getting that operational reliability, assurance and responsiveness directly influences consumer perception and that it means the utility has a direct path for minimizing non-technical losses and enhancing service delivery, based on empirical evidence from the Ethiopian Electric Utility (EEU).

Policymakers/Regulatory Bodies: Provides policy makers and regulatory bodies with information to enhance regional electricity infrastructure and electricity pricing structures to make the market more balanced and compliant.

Academic Literature and Researchers: It adds to the existing body of knowledge by providing a new perspective on the dynamic nature of informal and formal markets and the dynamics of consumer behavior in sectors that are dependent on electricity in developing economies.

1.6 Scope of the Study

From the geographical perspective, this research is only about Kolfe Keranio Woreda 08 in Addis Ababa where there is a high density of commercial injera production and extensive informal electricity utilization. As independent variables, methodologically, the research considers the price fairness and service quality, which are broken down into the following three components: reliability, assurance, and responsiveness. Perceived value of the government is captured as a mediating variable, the perceived informal–formal market imbalance becomes the dependent variable.

The study is quantitative research because of the analysis you will perform on these relationships. Primary data was collected directly from the injera consumers through structured questionnaires, given only to the consumers who actively make decisions between formal and informal producers. For the sole purpose of complementing these main findings, secondary data was collated from various academic literature, government documents and Ethiopian Electric Utility documentation.

1.7 Limitations of the Study

Despite its contributions, this study acknowledges several key limitations. First, obtaining direct, reliable data from informal producers proved challenging due to the illicit nature of unauthorized electricity connections, meaning certain insights rely more heavily on consumer and utility perspectives.

Second, because the geographic scope is restricted to Kolfe Keranio Woreda 08, the findings may not be entirely generalizable to other urban or rural regions across Ethiopia that operate

under different infrastructural conditions. Additionally, the sample size of 120 limits statistical power for complex mediation. For the findings may not be entirely generalizable.

Finally, because this research relies strictly on a quantitative approach, it may not fully capture the deeper, nuanced psychological and behavioral nuances of consumer decision-making that a qualitative or mixed-methods study could uncover.

1.8 Organization of the Study

The thesis is organized into five chapters, all of which are interrelated, in order to solve the research problem. A preliminary background is provided in Chapter One, along with the major problem statement that sets the stage for the study. It also specifies the research question(s) and research aims, outlines the need for research, presents the scope and limitations, and provides operational definitions for the terms utilized in the entire paper.

Chapter Two builds the ground of the literature and reviews the theory and empirical research which form the basis of issues in price fairness, service quality, consumer perceived value and the formal–informal market imbalance. This section relates all the above research to our context and builds upon the hypotheses for the study, search for research gap and development of the guiding conceptual framework.

The methods used in the research are described in Chapter Three. It describes the method and design of research followed, the sources of data collected and the study area and target population. Moreover, it will provide you a description of sampling method, size calculation, variables measured, data collection steps, analytical techniques, and ethical considerations that are followed in conducting the sampling process.

Chapter Four details and unpacks the raw data from respondents and discusses this data. It begins by describing the demographic characteristics of the respondents, descriptive statistics, and subsequently moves on to reliability and validity of the data. It discusses the correlation analysis and statistical assumptions checking, focuses directly on the hypothesis testing and mediation analysis with the PROCESS Macro of Hayes, and delves into the interaction among the variables.

Finally, in Chapter Five, the main findings are summarized, and a general conclusion is drawn. Based on these results, it offers some specific recommendations to the stakeholders and theory, practice and policy implications of the study results. It ends with a consideration of the areas for further study and research that are suggested by the study's limitations.

OPERATIONAL DEFINITIONS OF TERMS

Price Fairness

Perception of consumers about how injera price is reasonable and justified with production cost and market expectations.

Service Quality

Reliability, responsiveness, and consistency (assurance) in electricity related production services.

Consumer Perceived Value

The perception of consumers that comes from the overall evaluation of benefits they received related to the costs for purchasing the injera.

Informal-Formal Market Imbalance

The informal and formal injera producers' competitive gap in the market, where formals pay full electricity bill and informal may benefit from illegal electricity usage.

2. CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter synthesizes the theoretical and empirical literature surrounding price fairness, service quality, consumer perceived value, and the resulting imbalances between formal and informal markets. Rather than analyzing these variables in isolation, this review adopts a holistic approach—intersecting consumer behavior, market dynamics, and utility performance—to explain how structurally distorted market conditions drive consumer decision-making.

Because electricity-related inefficiencies directly dictate production costs, pricing behavior, and service reliability, this chapter also evaluates existing literature on non-technical losses and power sector performance. In urban Ethiopia, distribution inefficiencies and systemic grid losses continue to heavily cripple small enterprises and productive energy users, a persistent challenge documented (World Bank, 2024).

Ultimately, this section establishes an integrated framework demonstrating how poor electricity performance triggers a ripple effect through business operations. These operational disruptions heavily distort consumer perceptions of fairness and value, which ultimately fuels the formal–formal market imbalance. The chapter concludes by mapping out the specific research gaps this study aims to fill, followed by the presentation of the conceptual framework.

2.2 Theoretical Literature Review

2.2.1 PRICE Fairness as a Proxy of Electricity Theft

Price fairness is defined as a consumer's perception of whether a product's price is reasonable, acceptable, and justified based on underlying production costs and market expectations.

The concept of perceived price fairness is not constructed in isolation but depends on other transaction measures and perceptions of the transparency of costs (Adams, 1965; Kahneman, Knetsch and Thaler, 1986).

According to Equity Theory, consumers conduct a rationing transaction by comparing their outcomes (benefits) and inputs (monetary costs) against some form of standard or reference actor (Adam, 1965). A state of cognitive dissonance and perceived inequity occurs when the consumer feels that the ratio is not equal and that the seller is getting excess surplus at a cost to the consumer. This assessment is problematic in the case of Addis Ababa's commercial injera producers where structural differences between formal and informal producers exist. Under the Principle of Dual Entitlement by team of Kahneman, the potential for reasonable profits for the firms, and reasonable reference prices for consumers.

Price rises that result from clearly identified, unavoidable and increases in the price of the commodity (e.g. rising cost of teff or regulatory compliance fees) are considered fair. But if the price increase is considered to be unearned or rent seeking it is viewed as unfair (Kahnemal et al., 1986). For a utility-dependent market that is plagued by systemic infrastructure problems like non-technical losses and power theft that can be measured by the Ethiopian Electric Utility (EEU), price fairness is a proxy for structural distortions.
Formal bakeries incur high electricity costs due to their electricity consumption rates, their investment in generator stands and having to adhere to the Code of Practice set by the Municipality. In contrast, the informal operators commonly make unauthorized connections to the grid and completely avoid electricity costs.

Grounded in foundational models by researchers such as Xia and Bolton, consumer judgments are not shaped solely by the absolute price tag, but rather by deeper perceptions of equity and transactional fairness (Xia et al., 2024; Bolton et al., 2023).

In electricity-dependent production systems such as the commercial injera sector the pricing structure is fundamentally dictated by the vastly different operational costs borne by formal and informal producers. Formal traders operate within regulated electricity tariffs and strict regulatory compliance requirements. Conversely, as noted in recent performance reports from the Ethiopian Electric Utility, informal traders exploit illegal electricity connections to completely bypass these utility expenses (Ethiopian Electricity Utility, 2025).

2.2.2 Service Quality in Electricity Supply

The assessment of the quality of services in public utility operation has roots when Parasuraman, Zeithaml, and Berry (1988) developed the SERVQUAL framework. The classic model assesses service quality in terms of five different dimensions of the service operation: tangibles, reliability, responsiveness, assurance and empathy (Parasuraman et al., 1988). Public infrastructure distribution networks, however, involve standard low contact systems of distributing public goods like urban electricity supply networks, in which there is little direct contact between the primary service provider (utility) and the supply network end-consumer. Therefore, modern researchers on the field of utility management (Glauner et al., 2016; Nadeem & Arshad, 2021) suggest that the SERVQUAL scale should be modified specifically to reflect the elements which directly affect the productive manufacturing activities as reliability, responsiveness and assurance.

The reliability of a utility is the capacity to provide the uninterrupted, constant and stable flow of electricity (energy service) within the specified technical limits. Reliability is a requirement in operation and especially in a production environment such as the commercial baking of injera. The continuous heating elements need to have stable voltage parameters; frequent outages will lead to quality degradation of raw materials, production disruption and equipment damage.

Responsiveness measures how quickly, efficiently and prepared the utility company is when it encounters a supply problem, overloaded transformers or problems with hardware at a particular location. Businesses incur additional operating expenses as they are required to use alternative power generators when a utility is not responsive. Additional operating expense for formal producers due to lack of responsiveness of a utility in business downtime.

Assurance is the consumer's trust and confidence that the long-term capacity of the infrastructure provider to deliver service to the standards will be maintained. In the theoretical perspective, the broad scale of electricity theft can jeopardize the deterioration of the SERVQUAL dimensions, and this is explained by the Infrastructure Starvation Theory of Blazakis and Zhang. If a public utility suffers significant financial losses with regard to illegal connections and meter tampering, then it has an unsustainable capital shortfall.

These losses impact revenue that is intended to be spent on routine distribution transformer maintenance, routine upgrades to the grid, and regular maintenance (Blazakis et al., 2020; Zhang et al., 2025). The operating reliability and responsiveness of the utility decreases as the infrastructure's reliability and responsiveness to overloads diminish. This lack of operation has a direct impact on the formal producers and makes those services more expensive for the end consumer and reduces their perceived quality.

2.2.3 Consumer Perceived Value

This study relies on Zeithaml's Means-End Perceived Value Theory to explore the relationship that infrastructure distortions have with the consumer choice. According to Zeithaml, consumer perceived value is an all-encompassing model of cognitive trade-off between perceived benefits and perceived sacrifices (monetary and non-monetary). The perceived value is the essence that sets the external market attribute including price and quality into final purchase or switching behavior (Zeithaml, 1988).

In this study, monetary sacrifice is defined as retail price of injera, which depends on if the producer pays full bills for all electrical services or uses electricity without paying bills. The non-monetary sacrifice comprises of worries about consistency, production hygiene and availability of the product. What is perceived benefit includes the quality of the product, quality of the texture, shelf-life and service quality of bakery.

According to Zeithaml, perceived value is a mediator in the consumers' cognition. Inability to keep prices competitive, interrupted service due to grid instability, and additional costs for standard compliance with tariffs leave formal bakeries no choice but to raise prices, and keep product quality consistent (Zeithaml, 1988). This simultaneously makes the consumer feel that they have "sacrificed" more and also gives them a lower "value" or advantage of the same deal, which is good for the consumer's perceived value. This loss in perceived value affects the formal business and its competitive edge. According to means-end chain models, once the value of a formal product decreases below a specific threshold, consumers will shift their choice to considering the informal option as a means to maximise utility (Zeithaml, 1988).

Within consumer decision-making models, this variable plays a crucial role by synthesizing price fairness, service quality, and overall customer satisfaction. Empirically, study frameworks like

those by Wong highlight perceived value as an essential intermediate variable that bridges the gap between service quality perceptions and final consumer behaviors (Wong et al., 2021).

Rather than serving as a static metric, perceived value acts as a behavioral instrument. It reflects how consumers translate their real-world market experiences into judgments about a brand's competitiveness. In electricity-dependent sectors, this value is not derived solely from the tangible characteristics of the product itself. Instead, it is heavily tethered to the reliability of the utility infrastructure supporting production.

For example, Ministry of Water and Energy (2020) report indicate that frequent power interruptions are the most visible drivers of a drop in perceived value, directly eroding consumer confidence in formal producers.

2.2.4 Perceived Informal-Formal Market Imbalance

Within the context of this study, a perceived informal–formal market imbalance is defined as the structural and competitive gap between compliant and non-compliant producers as evaluated by the consumer. This disparity stems primarily from informal operators bypassing full utility billing through unauthorized electricity access, while formal producers bear the full weight of regulated tariffs. These conflicting operational realities grant informal players distinct advantages, resulting in lower production overhead, unequal resource access, and an evasion of regulatory compliance. Dual Economy Models developed by Lewis and also Harris and Todaro; moreover modern Institutional Asymmetry Theory developed by De Soto and Feige provide an explanation of conditions in the informal and formal economic sectors.

The traditional economic conception of the informal sector has been that of a marginal body of excess labour which will be reduced as industries develop (Lewis, 1954; Harris and Todaro, 1970). In fact, modern institutional theories show that informality may be a rational and long-term strategy in the face of high regulatory barriers, high compliance costs, and weak institutions to regulation (De Soto, 1989; Feige, 1990).

The focus of this study is on Perceived Informal–Formal Market Imbalance, which is the consumer's awareness of a competitive imbalance in the marketplace that is felt cognitively. This disparity makes it attractive for informal operators to beat law-abiding formal operators as they are not responsible for regulatory compliance, tax or utility bills. De Soto's concept emphasizes

that if the cost of compliance is significant and there is little enforcement, then there will also be a parallel economy (De Soto, 1989). This is a form of exploiting public goods, in this case, electricity, but without contributing to the costs of supplying electricity.
This results in high asymmetry in costs. Informal producers who source electricity without permission are able to keep their costs low compared to those of formal electricity providers by reducing the costs to almost nothing. However, the formal firms have to pay the rate and at the same time they have to meet the cost of grid inefficiency, which increases their retail price.
This structural market imbalance is ultimately reinforced by consumer's decisions. When consumers see this price difference, they feel a sense of unfairness on the market and use this to their advantage to have more purchasing power in the short term via the cheaper informal services. This structural change has a negative effect on compliance, stimulating continued expansion of the informal sector.

This study specifically evaluates how injera consumers observe these dynamics and how those observations shape their assessments of relative market competitiveness and price fairness.

2.2.4.1 Theoretical and Practical Implication of the Imbalance of Informal-Formal Market

By operating with stolen or unmetered power, informal producers enjoy drastically reduced overhead, enabling them to undercut the prices of formal businesses. Data from the World Bank confirms that these distorted operating costs allow informal vendors to offer the lowest prices in the marketplace (World Bank, 2024). Over time, this price gap skews consumer expectations; buyers may misinterpret the higher, legitimate prices of formal producers as predatory profit-gouging rather than the necessary cost of compliance. The concept of a perceived informal–formal market imbalance perfectly captures how these structural distortions alter consumer psychology regarding market fairness.

Theoretically, this concept illustrates how structural market conditions actively shape consumer evaluations of market outcomes, drawing heavily on market fairness and competition theories. By understanding the intricate ways consumers perceive this imbalance, utility providers and policymakers can better understand how grid inefficiencies actively penalize law-abiding businesses. Practically, these insights provide a clear roadmap for authorities to strengthen

regulatory enforcement, stabilize utility service delivery, and foster a more equitable, balanced marketplace.

Measurement of Constructs

To empirically evaluate how consumers perceive this informal–formal market imbalance, the study utilizes three core perceptual constructs:

- ✓ Price Competition: The extent to which consumers perceive unfair pricing dynamics between formal and informal producers.
- ✓ Market Equity: The perceived level of structural fairness and competitive balance within the local marketplace.
- ✓ Informal Cost Advantage: The degree to which consumers believe informal producers benefit from artificially depressed manufacturing costs.

Together, these three indicators serve as the primary framework for analyzing consumer assessments of competitive positioning within the commercial injera market.

2.3 Empirical Literature Review

In this section, some empirical studies of price fairness and cost asymmetry are discussed.

2.3.1 Price Fairness

Empirical research on the numerous developing markets has shown that consumer perceptions of price fairness is a result of perceived cost transparency and low-priced informal channels. In the retail food market structure in transitional economies, Liu, Wang and Zhang examined the informal cost advantage and its effect on the consumer reference price. They investigated 450 UMEs using an asset-incentive regression design and estimated that the energy saved by the unmetered energy use for the informal enterprise saved up to 42% of their base operating costs (Liu 2003). This saved them money and allowed them to price below the minimum price for profit, of formal and tax-paying competitors. Their path modeling showed a very systematic process whereby the exposure to these low informal prices systematically reworked the consumers' reference standard, and caused them to perceive prices of the businesses that they were compliant with as "exploitative".

This is in line with the results of Bolton, Warlop and Alba who conducted experiments and concluded that consumers undervalue fixed costs that are placed on the formal business (such as the cost of commercial energy tariff and compliance with regulations), (Bolton et al., 2023). For consumers, it's simple to think that the price adjustments are unfair because of the inflation or compliance, but what they do not realize is that the price adjustments are to compensate for inflation or compliance, and not profit.The consumers feel deprived of a good deal by the seller, and this is most probably because the price has been raised or because the seller is following the government's rules and regulations, not for profits.

Broadly speaking, the literature confirms that price fairness acts as a critical pivot point, heavily dictating market competition and driving shifts in consumer behavior.

2.3.2 Service Quality

A robust body of literature specifically foundational frameworks by Parasuraman as well as modern assessments by establish that utility service quality directly shapes consumer satisfaction, trust, and perceived value (Parasuraman et al., 1988).

Operability of the formal small and medium enterprises (SMEs) in the sub-Saharan Africa region where domestic utility theft is rampant was the topic of the 2022 Domestic Arkorful. The study targeted 310, the formal food processors, and the study showed that the food utilities, which suffered huge losses as a result of the non-technical losses, transform the latter into the formal food processors through commercial tariff (Arkorful, 2022).

Consequently, formal-company staff end up having to pay two prices for the inefficient provision of electricity, namely, higher prices that they must pay to the company and being exposed to poor electricity service.This asymmetric pricing will directly affect consumers' sense of price fairness of the formal channel, which will lead to consumers moving to the informal channel(Arkorful, 2022).

The field of economic and behavioral response of the productive enterprise to the variations of quality and utility of the service provided by the utility company, in terms of empirical research, is huge. The present study, conducted by Nadeem and Arshad has conducted a vast cross-

sectional study to investigate the linkage between infrastructure stability and productivity of small business in the developing world. They hypothesized that reliability and responsiveness as dimensions of utility delivery strongly affected the small business survival and small business perceived customer value directly in their study (N = 500 small enterprise managers) that employed structural equation modeling (SEM). They discovered that the operational capital of the formal businesses was used to set up alternative power supply, and this caused a loss of power quality at low frequency, up to 25% of the businesses operational capital (Nadeem and Arshad, 2021).

Carr and Thomson have investigated how the use of transformers and line distribution systems in illegal applications affects both local transformer and line distribution systems. Using technical performance data from urban grids, they were able to show that unmetered overloads lead to damage of the equipment, leading to localized, frequent and grid-wide blackouts and maintenance costs on the utility (Carr and Thomson, 2022).

This gives rise to a vicious circle because the utility has insufficient funds to maintain or upgrade the grid and its "compliant consumers" will always be less reliable in their service. The World Bank (2024) national economic assessment of the performance of urban infrastructure in Ethiopia reported that non-technical losses, antiquated grid assets and infrastructure constraints of distribution lines are among the factors that affect firm productivity.

The report states that urban power services companies are suffering an average loss of 15-20 production days annually as a result of power outages and that has a negative impact on their capacity to meet quality & consistency requirements (World Bank, 2024).
Empirical findings clearly suggest service quality in developing markets is industry-wide and is a function of both material structural and institutional problems.

2.3.3 Consumer Perceived Value

Empirical findings supported by theories from Zeithaml and Wong confirm that consumer perceived value serves as the primary mechanism linking price fairness and service quality directly to final consumer behavior (Zeithmal., 1988; Wong et al., 2021). When consumers

perceive a product's price as excessively high—especially when paired with unreliable utility support, as seen in the injera sector—their perception of the product's overall value plummets.

The fact that the consumer perceived value is a key intermediate between the operational performance measures (like price and quality) and the actual consumer choice, has been confirmed in the literature. Onyango, Mensah, & Wong applied multi-stage path analysis model in the study of the consumers' decision making process in a food market in the townships where the informal sector is active (Wong et al.,2021). They did an investigation of 380 urban consumers and considered the link between the inputs for service consistency and outcomes for perceived service fairness/purchase retention.

A mediation analysis was carried out to support their results and they found that consumer perceived value mediated the effect, partially. The research revealed that the reason for a firm's service value to change from negative to positive or vice versa when it increases (or decreases) the price of its service because of compliance costs depends on the level of service quality. Consumers opted for informal choices when the value proposition was lowered, thus demonstrating that value calculations are made on a holistic basis, not only based on prices (Wong et al.,2021).

This agrees with classical empirical value measures formulated by Zeithaml (1988) which show that the value perceptions of the various consumer segments are based on the combination of monetary costs and non-monetary costs such as product quality and convenience of the shop. If the demand for the utility occurs regularly (in consumer markets) or the reliability of the utility decreases or production costs increase, the consumer will value the utility less (Zeithaml, 1988). It makes people move to the ‘lower cost informal sector' and accelerates change of behaviour.

This behavioral shift reinforces and rewards the informal sector, worsening the structural market imbalance. Ultimately, the literature underscores that perceived value is not just a passive metric; it is the cognitive lens through which consumers translate their real-world experiences with price and quality into market decisions.

2.3.4 Perceived Informal-Formal Market Imbalance

The empirical literature on market structure and relationships in informal economy indicates that there is a lot of ‘twisting’ of the competitive market especially because of the type of cost structure experienced by the formal and informal economy producers.

Empirical research on the perceived informal sector–formal sector imbalance is overwhelmingly dominated by the imbalances in the market due to cost and regulatory disadvantages. In the context of weak enforcement urban areas, Babar, Khan and Ali (2022) looked at the competitive relationship between the formal and informal consumer goods vendors.

They engaged in conversations with 240 registered micro businesses and observed that it was easy for informal businesses to avoid paying wages, licences and utilities and that this created them with a structural cost advantage. This led to a marked imbalance in the market in which formal firms saw their market share decrease and still had the highest standards of production (Babar et al., 2022). They were able to observe that this increased perception of market balance is related to a reduced investment commitment in formal firms, which is associated with lower competitiveness of the formal firms.

Like in Smith (2024), the author takes a structural approach to understanding how traditional food markets in East Africa are “imbalanced”. Based on his research, he found that low entry costs and high utility dependence in the parts of the sector are very vulnerable to informal growth. The informal sector's use of public resources is illegal and “takes them beyond the market cost realities” because they use these resources without paying the market costs (Smith, 2024).

Smith's results revealed that consumers exploit this unequal situation and make the priority of the instant purchasing instead of institutional compliance and rely on informal institutions and reinforce the parallel economy

Moreover, Liu et. al. (2003) highlight in their paper in this volume the non-technical losses and electricity theft that can have a positive effect on the competitiveness of the informal sector by lowering costs of operation due to other electricity-related inefficiencies. At the same time there is the impression, that the market is open and this would also be true, because for the formal producers have to pay also more for this production, which also increases the consumer prices, on top of the increase in prices, for the formal producers.

The higher the consumers' degree of unfair cost advantage, the higher their own level of unfair market balance will be, and this will be reflected in the choice they will make: The higher the consumers' degree of unfair cost advantage, the more it feels like they are choosing an unequal environment rather than an “equal environment.” The price asymmetry and service inefficiencies and distortions from electricity services in particular, make this informal–formal market imbalance a recurrent issue raised in literature.

2.4 Hypotheses Development

Perceived price fairness centers on whether a consumer evaluates the price of a product—such as injera—as reasonable, acceptable, and justified relative to actual production costs and general market expectations (Xia et al., 2024).

Following the theoretical frameworks of Bolton, when consumers believe they are paying a fair price, they are significantly more likely to assign a higher value to the goods or services received. Within utility-dependent markets, fair and transparent pricing strategies directly amplify a consumer's sense of received benefit, thereby expanding their overall calculation of perceived value (Bolton et al., 2003).

H1; Price fairness significantly and positively influences consumer perceived value.

Service quality as reliability, responsiveness, and assurance determine critically perceived value through customers’ evaluation of obtained benefits (parasuraman et al.,1988). Improving service quality means reducing interruptions and disruptions, so that lead directly to satisfaction and perceived value.

H2; Service quality positively influences consumer perceived value of electricity service.

Consumer perceived value performs key and central role in adjusting behavioral and cognitive judgments or evaluations that show the trade-off between consumers’ perceived costs and perceived benefits (Zeithmal, 1988). This perceived value influence, specifically in accordance with competition and fairness perception, how consumers interpret the difference between formal and informal producers.

H3; Consumer perceived value significantly and positively influences perceived informal-formal market imbalance.

Based on Xia suggestion the theory of price fairness is that price is compared to the benefits received, and whether or not prices are fair and reasonable. If consumers think that the prices of formal producers are fair, they will more often be willing to buy formal products instead of choosing cheaper informal products (Xia et al., 2024). Thus the informal producers' dependence on the market is reduced and the consumers' perception of imbalance between formal and informal market participants is reduced. Therefore, it is expected that the perceived price fairness will be negatively correlated with the perceived informal–formal market imbalance.

H4; Perceived price fairness negatively influences perceived informal-formal market imbalance.

Similarly, here, the influence of service quality on informal-formal market imbalance is expected. The attractiveness of formal producers reduces due to less reliable an inconsistent service delivery that encourage consumers to shift to the in formals (Parasuraman et al., 1988; World bank, 2024).

H5; Service quality negatively influences perceived informal-formal market imbalance.

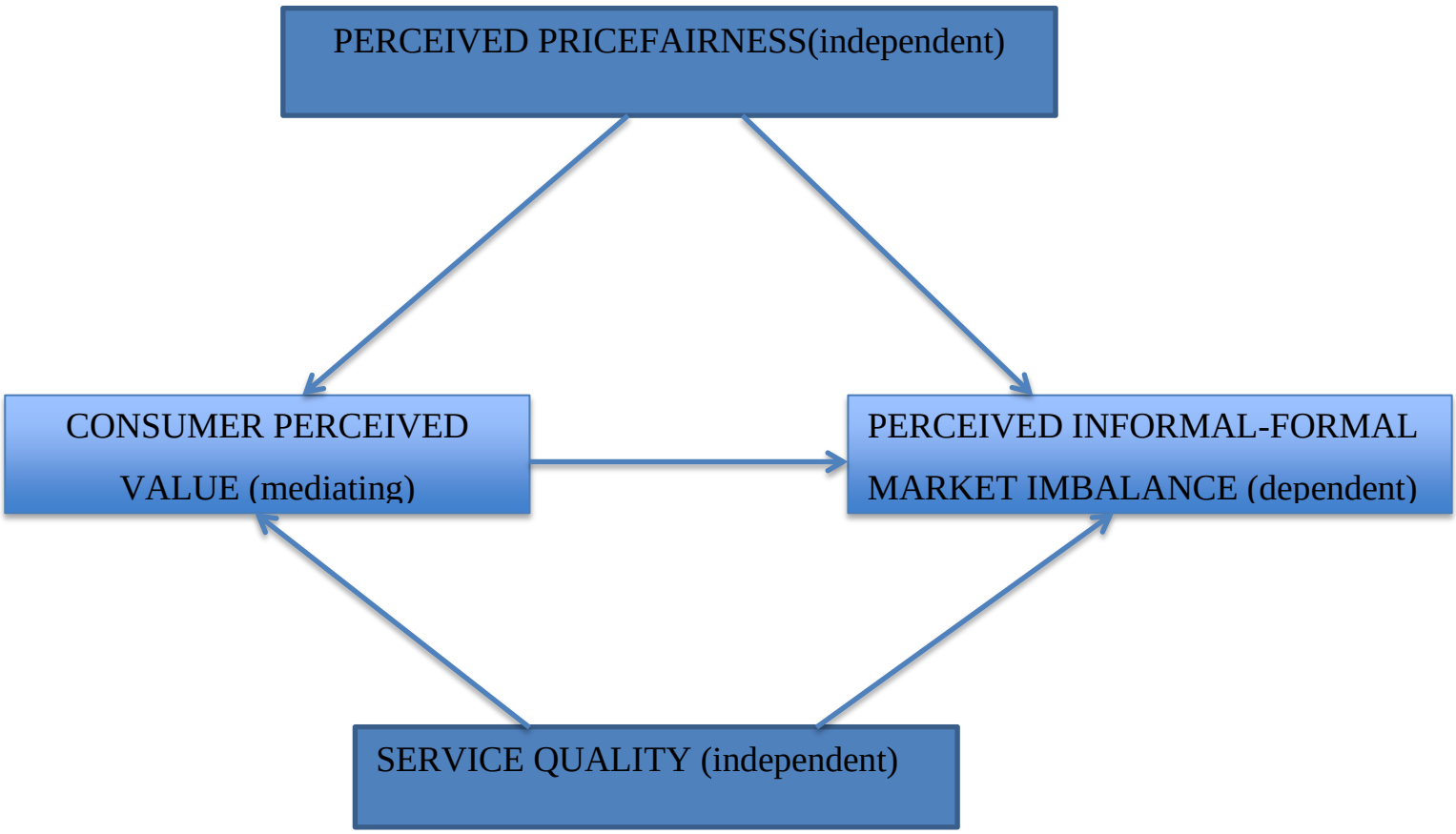
According to Zeithaml, how service-related associations identifies the broader perceptions of market and consumers' behavioral responses translated through s the mediating mechanism of consumers perceived value (Zeithaml., 1988). This relates the final judgements in the market is the cognitive integration of price fairness and service quality.

H6; Consumer perceived value partially mediates the relationship between perceived price fairness and informal-formal market imbalance.

H7; Consumer perceived value partially mediates the relationship between service quality and perceived informal-formal market imbalance.

2.5 Conceptual Framework

In the revised conceptual model below, the direct paths are still present with indirect value links as well as a partial mediation path (Hayes PROCESS Model 4):



Narrative Explanation

The conceptual model shows a multi-path behavioral model, both with direct path inputs (transitions) and indirect path inputs (cognitive evaluations). The story of the structural model is presented in a series of interactions between the paths that start from the antecedent paths, where the major antecedent paths are Perceived Price Fairness (PF) and Service Quality (SQ), which include reliability, responsiveness, and assurance.

Consumers cannot just look at the product without considering the price of the product, though, and the service context is the consistency and reliability, which directly affects and influences Consumer Perceived Value (CPV). These structural inputs are not necessarily used directly in the final market, but first are used in this cognitive filter where the psychological mechanism or mediator is the perceived value of the product, in which the customer's comparing of total benefit vs total sacrifices takes place.

This holistic value calculation then directly affects the Perceived Informal–Formal Market Imbalance (IMB), that is, if the consumer thinks he or she receives a high value from the formal and legitimate producers, then he or she will not perceive this as a distortion of the market against the informal producers and will tend to support the formal producers than the informal ones. Last, consumer-perceived value is not fully mediating as evidenced by the empirical path analysis performed with Hayes' PROCESS Macro (Model 4).

This finding indicates that perceived value not only directly affects market imbalance but also is a tangible effect that is independent of the effect of service quality and satisfaction of price fairness. This study has also found that the satisfaction of price fairness and service quality directly affects market imbalance, and that the two variables have a statistically significant independent effect. Even after taking into account the value added, a bad price setting will directly influence the cognitive interpretation of the value gap between compliant and non compliant producers by the consumer, and therefore be an indicator that the imbalance is being actively created in the market by the consumer.

2.6 Research Gap

Clarifying how consumer behavior, pricing, and service quality factors interact in markets affected by electricity related problems remain in significant gaps, even though previous studies have analyzed these factors.

The prior important gap relates to the limited integration of electricity-related distortions, including electricity theft and service reliability challenges, to consumer price fairness frameworks. On this condition, such factors can substantially influence production costs and pricing structures, their impact on consumers' fairness perceptions received limited empirical attention. According to many research analyses, the role of electricity service quality in food production markets are scarce, particularly regarding how service reliability affects production performance and consumers' evaluation of formal products.

The second gap needed to be fulfilled in this research is the role of consumer perceived value in explaining informal–formal market imbalance. Existing research has primarily treated perceived value as the final outcome of service-related factors, with little attention given to its mediating

role in shaping consumer perception of consumers of market competitiveness and market fairness. This limitation is specifically relevant to influencing consumer decision making as a result of both economic and infrastructural conditions.

On the other side, gap exists in the Ethiopian injera market. Despite the sector's highly dependence on electricity for formal production, the available evidence is limited on how electricity-related conditions influence consumers' perceptions of price fairness, service quality, and perceived value, and how these three perceptions contribute to informal–formal market imbalance.

Aiming at addressing this gap, the focus of this study became integrating electricity-related factors into a consumer behavior framework to analyses their influence on perceived value and market imbalance. In doing so, it goes beyond existing marketing and service literature at the same time providing evidence on informal–formal market dynamics in the electricity-dependent food production sector, namely injera sector.

3. CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The methodological framework is presented in this chapter to address the main objectives of this study. It explains the research approach, research design, types and sources of data, geographic study area, target population, sampling methods and sample size determination. In addition, this section details the data collection tools, statistical analysis methods, variable measurements and also ethical safeguards kept throughout the study process. In conclusion, this methodology offers an empirical and structured approach to analyses the intricate link between price fairness, service quality, consumer perceived value and the informal–formal market imbalance of injera consumers in Kolfe Keranio Woreda 08.

3.2 Research Approach

This study used an explanatory research approach which is a quantitative method. The main aim of the study was to explore and measure the causal linkages between price fairness, service quality, consumer perceived value, and consumer perceived informal–formal market imbalance, which is highly relevant in this study. The use of an explanatory framework makes it easy to test systematically the influence of independent variables on both the intervening variables and the dependent variables in the conceptual model.

3.3 Research Design

The study is designed cross sectional survey with qualitative approach. The design was very appropriate for this research because the data can be obtained from respondents within a single time of measurement and thus it was very effective in measuring immediate perceptual and behavioral constructs of all the research variables.

Both descriptive and inferential statistical methods were used to analyze the gathered data:

Descriptive Statistics: These are used to describe the demographic information about the respondents and to give an overview of the general perceptions of respondents on the core study variables.

Inferential Statistics: Used to determine the relationships between variables in terms of direction, strength and significance. This consists of Pearson correlation coefficients, standard regression assumption tests, and Andrew Hayes' PROCESS Macro for robust mediation analysis.

Notably, such inferential methods enable direct estimation of the indirect effects of price fairness and service quality on the market imbalance via perceived value by consumers.

3.4 Data Types and Sources

This study is a combination of Primary and Secondary data sources to ensure a depth and reliable study:

1. Primary Data: Collected from the consumers of injera in Kolfe Keranio Woreda 08. Structured questionnaires specifically developed to capture the perception of price fairness, service quality and perceived value were used for data collection.
2. Secondary Data: This is the data that has been compiled from academic literature, institutional report and official documents from Ethiopian Electric Utility (EEU) and Addis Ababa Trade Bureau. These secondary sources are important to give context to the primary consumer data, and can help support this primary data in the context of the local operational environment.

3.5 Study Area

The study area was Kolfe Keranio Woreda 08 in Addis Ababa because of its very dense mix of both regular and informal producers of injera using illegal electricity connections. The empirical focus in this particular locality is suitable to this research because all these market actors exist concurrently, giving the chance to explain how inefficiencies at the utility level contribute to the overall market imbalance and affect the perception of the consumer.

3.6 Population of the Study

This study will target injera consumers in Kolfe Keranio Woreda 08. These are the people most suitable for this research given that people make the final decision on a purchase. Their internal perceptions of service quality, fairness of prices, and value of the product are key, direct inputs to the behavioral dimension which leads to the decision between formal compliance and informal alternatives.

3.7 Sample Size and Sampling Technique

In mediation models, determining an adequate sample size is crucial to obtaining statistical power. Hair et al. (2010) recommends that samples ranging from 100 to 200 are quite suitable for multiple regression and simple path analyses. In addition to this, Hayes points out that with a sample size larger than 100, the bootstrapping procedure is statistically adequate to test for direct and indirect effects in the PROCESS Macro (Hayes, 2018). Based on these benchmarks, this study set the sample size as 120 consumers of injera, which is adequate for the hypotheses to be validated as mediated relationships.

A comprehensive, updated sampling frame of all injera consumers in the woreda was not available making probability sampling impractical. Thus, a non-probability sampling technique (convenience sampling) was used. This limitation may limit the generalizability of the results beyond the sample; however, a convenience sampling method was used to provide convenient access to regular, active purchasers of injera during the fieldwork period. This approach is commonly used in explanatory research in which the main aim is to explore the structural relationships and interactions between theoretical variables, rather than achieve a perfect representation of the population.

3.8 Measurement of Variables

This study's conceptual framework suggests that the independent variables are price fairness and service quality, and service quality is measured using the constructs of grid reliability, provider assurance and rapid responsiveness.

All the structured survey instruments were derived from the well-known measurements in relevant literature to guarantee content validity and reliability.

Items for the measure of price fairness were adopted from Bolton et al. (2003) and Xia et al. (2004). These measures are based on the theories of equity and expectation-confirmation theory, and are based on the comparison of the prices of the product against the market options and whether they are justified and reasonable.

Service Quality: The measure used were selected from the classical SERVQUAL model of Parasuraman et al. (1988) focusing only on service reliability, service assurance and service responsiveness to assess the quality of electricity utility services in the study.

Consumer Perceived Value: Measurement scales were based on Zeithaml (1988) which emphasized the cognitive balance between the costs (transaction) experienced and the benefits (consumer) received in the transaction.

Perceived Informal–Formal Market Imbalance: Items came from sectoral and informal market dynamics studies by the World Bank (2024), Liu et al. (2023) and Smith (2024).

Hayes' PROCESS Macro (Model 4) was used to estimate mediation models, with income level and purchase frequency added as covariate.To control for possible demographic influences, income level and purchase frequency were added as a covariate in mediation models using Hayes' PROCESS Macro (Model 4).

3.9 Data Collection Procedures

One hundred and ten (120) injera consumers were selected from Kolfe Keranio Woreda 08 and a structured questionnaire was used to collect primary data. Being daily consumers of formal and informal vendors and making decisions on the type of position to cross, these respondents held a unique perspective in assessing operational problems explored in this study. The survey successfully recorded their real-life experiences as well as the perceptions they had about all the study variables of interest.

In order to support these major findings, secondary data was collected from publications of the Ethiopian Electric Utility, documents from the City of Addis Ababa Trade and Industry Bureau of the Ethiopian City Administration and World Bank documents. Incorporating these institutional sources further solidified the final data understanding, establishing a connection between consumers' perceptions and real grid service levels, market conditions, and local regulatory issues.

3.10 Data Analysis Techniques

Appropriate statistical software SPSS was used to analyze quantitative data. The data collected was first cleaned, coded and entered in the software platform for processing.

The analysis was carried out in two parts;

Descriptive Analysis: The demographic characteristics of the sample population were summarized using descriptive statistics like frequency distributions, percentages, means and standard deviations which gave a general sense of the population product being analyzed and a baseline of consumer perception.

The general strength and direction of the relationships between variables were demonstrated by applying Inferential Analysis that is Pearson correlation analysis. Then, regression-based path modeling was performed via Andrew Hayes' PROCESS Macro (model 4).

This powerful mediation modeling enabled the study to examine the direct relationship of both price fairness and service quality to consumer perceived value, as well as to explore the direct relationship between both constructs and the consumer perceived imbalance between informal and formal markets – importantly, the indirect bootstrapping pathways were statistically significant to identify if the consumer perceived value was an active mediating variable.

3.11 Ethical Considerations

The research process was conducted in an ethical manner. All those who responded to the survey were asked whether they consented, and they all gave informed consent before giving their

responses. Participants were clearly told that they will only use the information they provided for research purposes.

In order to ensure the anonymity of the respondents, all the data collected was fully anonymized and no personal factors were included in the analysis and final report. In addition, the respondents had the explicit permission to withdraw from the study at any point during the study without any negative consequences. Finally, all the physical and electronic data tokens are stored securely so that they can't be accessed by anyone else.

4. CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter includes empirical analysis, interpretation and discussion of primary data obtained from the 120 respondents of Kolfe Keranio Woreda 08. The primary purpose of this study is to investigate the linkages between price fairness, service quality, consumer perceived value and perceived imbalance between the formal and informal market place for injera in the peri-urban markets.

The role of electricity related production vulnerabilities specifically show as a direct impact on compliant formal producers are given special attention. This focus is particularly important because official findings from the Ethiopian Electric Utility are that urban distribution networks are subjected to chronic outages and high non-technical losses which directly affect small productive enterprises and also small household businesses in Addis Ababa Ethiopian Electric Utility (2026).

The design of this research is quantitative, explanatory, cross sectional survey. This model can be used to assess perceptual constructs at one time and can clarify the relationship between the independent variables and intervening mediator variable and the primary dependent variable.

The chapter is analytically structured into four parts: including the characteristics of the respondents, the demographical characteristics of the respondents, and descriptive Analysis of Core Study Variables. The core empirical analysis focused systematically on evaluating price fairness, service quality, consumer perceived value, and the perceived informal–formal market imbalance. This structure directly mirrors the specified variable configurations required to execute Andrew Hayes' PROCESS Macro (Model 4).

To ensure a comprehensive breakdown of the field data, both descriptive and inferential statistical methodologies were deployed:

Descriptive Statistics: Applied to condense the baseline demographic characteristics of the sample population and establish the foundational trends for each operational study variable.

Inferential Statistics: Utilized to robustly test the study's primary hypotheses. Specifically, a Pearson correlation matrix was constructed to map the initial strength and direction of the linear relationships among variables.

Mediation Path Modeling: Executed via the Hayes' PROCESS Macro (Model 4). This advanced procedure isolated both the direct impacts of the predictors and the boot-strapped indirect effects traveling through consumer perceived value.

4.2 Demographic Characteristics of Respondents

Demographic information of the sample population helps give context to interpreting consumer purchasing behaviors, fairness judgements and perceptions of quality. This section provides a summary of important demographic information, such as age distribution, gender representation, occupation, size of household, frequency of purchase and income level of households.

4.2.1 Age Distribution

Table 4.1: Age Distribution

Age Group	Frequency	Percentage (%)
Below18	1	0.8
18-24	18	15.0
25-34	36	30.0
35-44	56	46.7
Above 45	9	7.5
Total	120	100.

It is summarized in Table 4.1 that almost half of the respondents (46.7%) are in the age group of 35-44 years, which is a highly active economically deserving age group. This is nearly followed by the age group 25-34 that contributes to 30.0% of the sample. Young Adults (18-24) make up 15.0% of the population, 45- and over makes up 7.5% and below 18 makes up 0.8%. All these are evidence that the survey is able to capture the mature consumers who play direct active role in the household provisioning and financial purchasing.

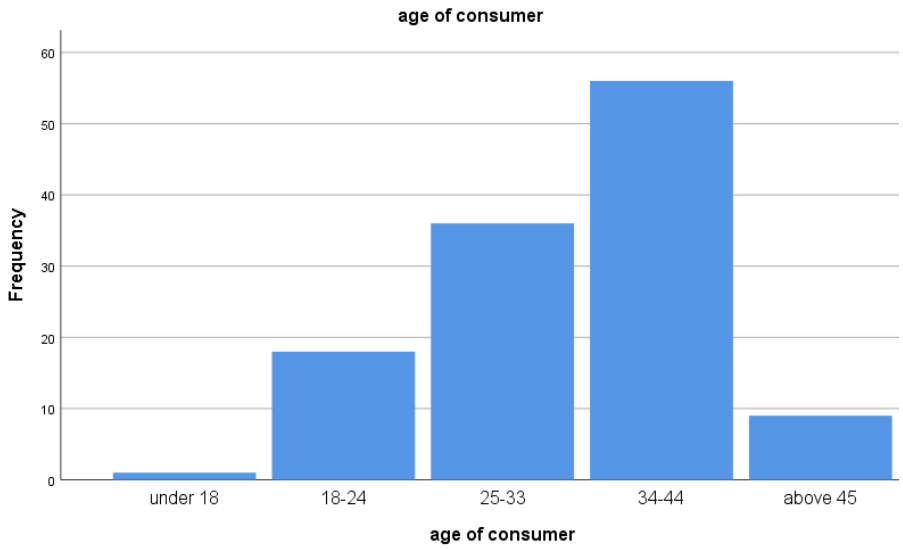


Figure 4.1: Age Distribution of Respondents

4.2.2 Gender Distribution

Table 4.2: Gender Distribution of Respondents

Gender	Frequency	Percentage (%)
Male	49	40.8
Female	71	59.2
Total	120	100.0

The data shows that there is a more even distribution of females among the market participants. Table 4.2 shows that the majority of the sample is made up of female respondents at 59.2% whereas male respondents make up 40.8%. At the household level in urban Ethiopia, such distribution is more comparable to traditional gender roles responsibilities, as women are more often than men doing the housekeeping and making the decision on the daily household food purchase, especially injera.

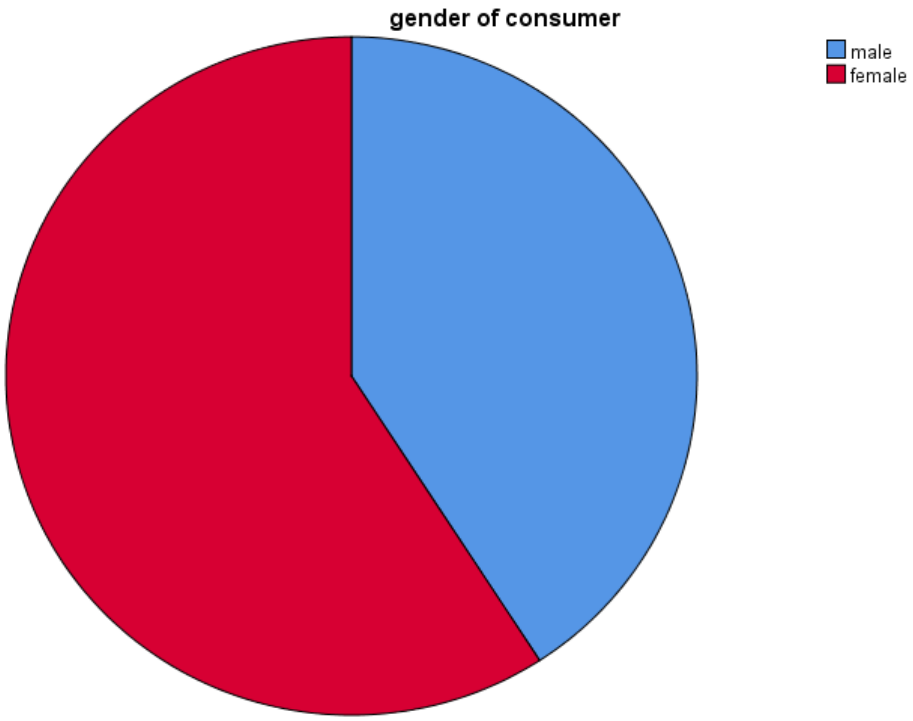


Figure 4.2: Gender Distribution of Respondents

4.2.3 Occupational Status

Table 4.3: Occupational Status of Respondents

Occupation	Frequency	Percentage (%)
Trader	42	35.0
Government employee	30	25.0
Private sector worker	24	20.0
Student	10	8.3
Housewife	9	7.5
Unemployed	5	4.2
Total	120	100.0

The occupational distribution of respondents (summarized in Table 4.3) makes it more understandable of the socioeconomic composition of the sample. The independent traders and traders are the major portion, 35%, showing the Kolfe Keranio Woreda 08 has a very commercialized system. The second largest group of employees (25%) is the government sector and this is closely followed by the private sector (20%). Unemployed people make up 4.2% and housewives 7.5%, with students making the rest of the segments (8.3%). This variety of

occupations allows for a broad representation of different socioeconomic groups: people from all walks of life are represented in the final data sample reflecting their buying habits based on the different professions and lifestyles.

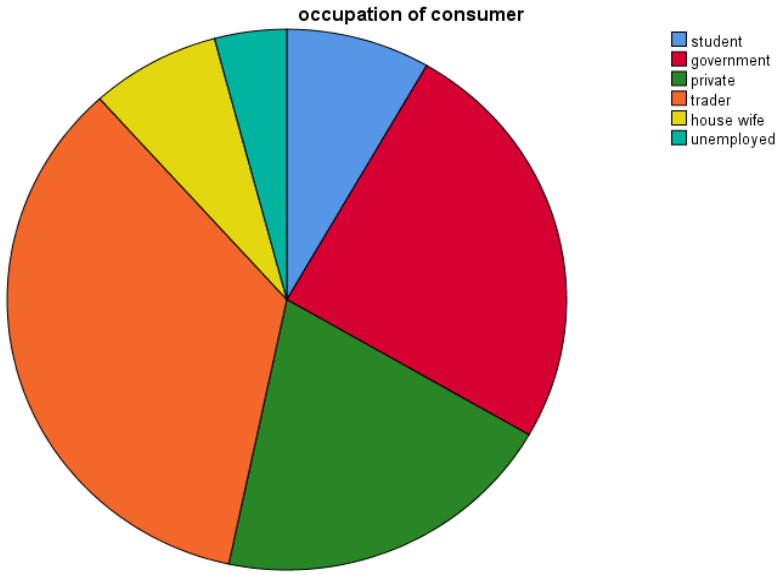


Figure 4.3: Occupational Status of Respondents

4.2.4 Income Level

Table 4.4: Income Level Distribution of Respondents

Income Level (ETB)	Frequency	Percentage (%)
Below 3,000	11	9.2
3,000-6000	15	12.5
6,000-10,000	36	30.0
10,000-15,000	50	41.7
Above 15,000	8	6.7
Total	120	100.0

Monthly household income falls off steeply towards the lower end as shown in Table 4.4 and is mostly concentrated in the lowest monthly income groups. Households that earn between 10,000 and 15,000 ETB per month constitute the largest income group (41.7%) followed by those with a monthly income of 6,000-10,000 ETB (30.0%). Moderate to low-income earners between 3,000 and 6,000 ETB account up to12.5% of the respondents. The cutting points of the distribution fall

in the lowest earner group (ETB less than 3,000) which has 9.2% of the population and the highest earner group (ETB above 15,000) has 6.7%. The distribution shows that there are mainly people with moderate purchasing power in the sample. Therefore, price fairness assessments and financial circumstances are salient to purchasing decisions made by these households.

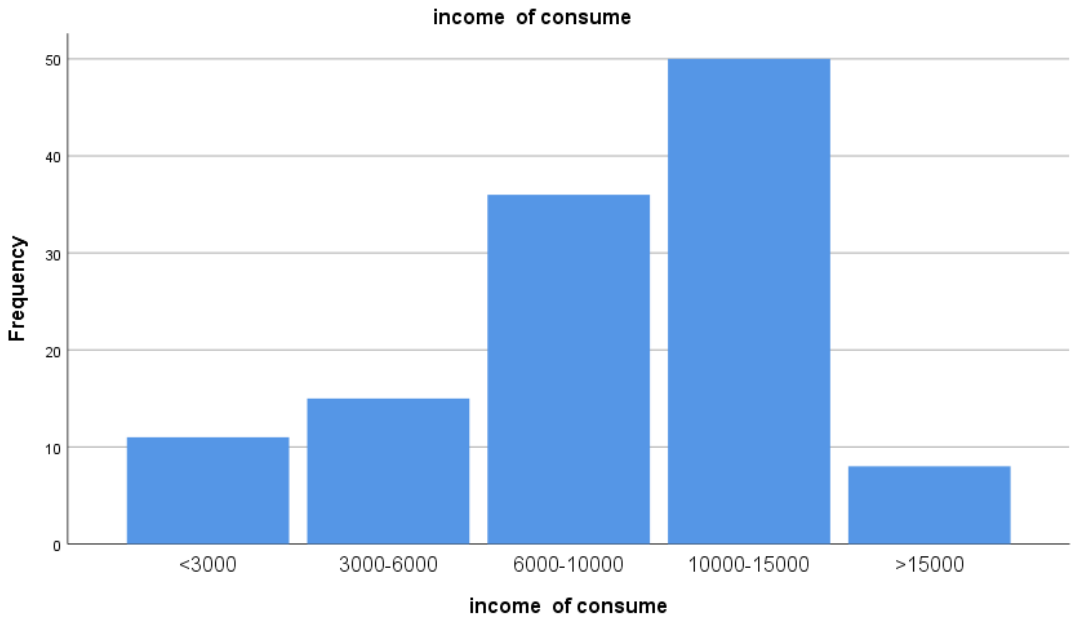


Figure 4.4: Income Level Distribution of Respondents

4.2.5 Family Size

Table 4.5: Family Size of Respondents

Family size	Frequency	Percentage (%)
1-2 members	39	32.5
3-4 members	68	56.7
5-6 members	8	6.7
More than 6 members	5	4.2
Total	120	100.0

Household size has a significant effect on the food consumption needs and food spending patterns of households. As can be seen in Table 4.5, the majority of the respondents are from households that have 3 to 4 members (56.7%). The common household model types are smaller

household model types with 1-2 persons in the household (32.5%) and larger household model types with 5-6 persons (6.7%) and larger persons (4.2%) in the household. These statistics reveal that the average size and type of units are mainly small to medium size seeing domestic size units and this structure directly affects the regular food consumption patterns and commercial injera requirements.

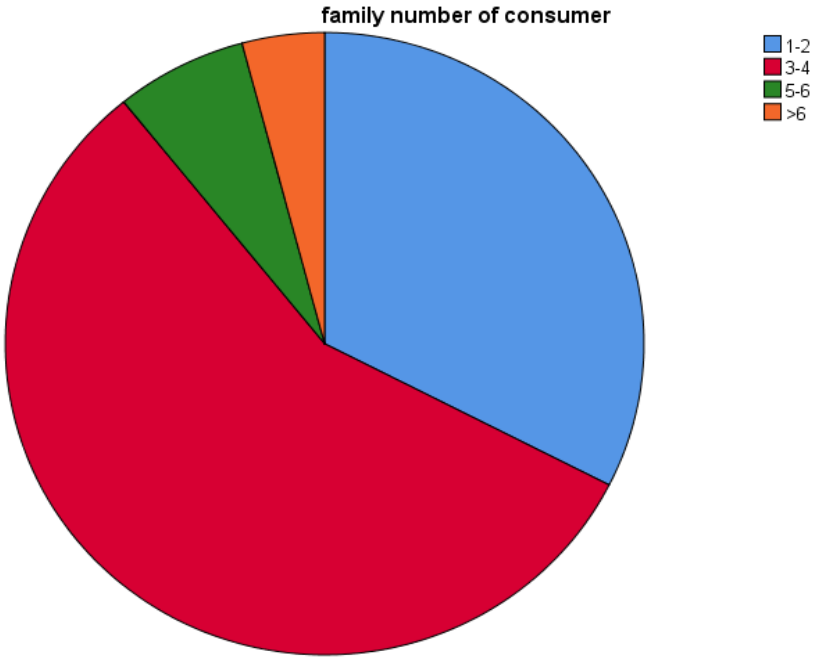


Figure 4.5: Family size Distribution of Consumers

4.2.6 Frequency of Injera Purchase

Table 4.6: Frequency of Injera Purchase

Purchase Frequency	Frequency	Percentage (%)
Daily	78	65.0
Several times per week	35	29.2
Less frequently (once a week and occasionally)	7	5.8
Total	120	100.0

Purchasing frequency for each of the local commercial injera establishments is outlined in Table 4.6, which shows that the local residents rely on commercial injera for their wish. Table 4.6 sets the indicator data for the reliance by local people on commercial injera through purchasing frequency. Majority of 65.0% of the respondents buy injera every day for their daily diet. Several times a week, 29.2 per cent purchase the product, and a low percentage of 5.8 per cent purchases it less often. Such statistics emphasize the important role of commercial injera in the urban food system in the study area and reinforce the fact that the change in any element of the injera value chain or the price of injera immediately affects consumers' purchasing power.

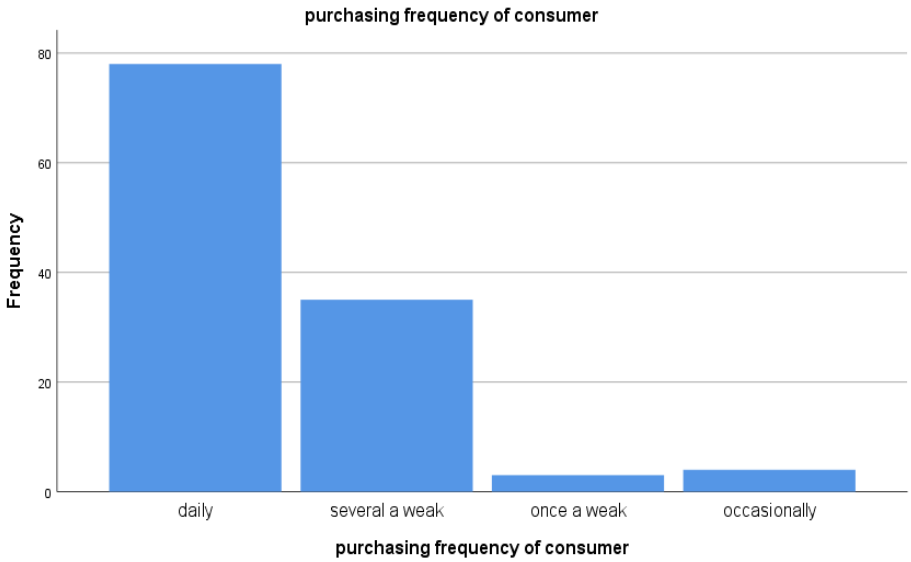


Figure 4.6: Frequency of Injera Purchase among Respondents

4.3 Descriptive Statistics of Key Variables

Table 4.7: Descriptive Statistics of Key Variables

Variable	Mean	Std. Deviation
Price Fairness	3.25	1.21094
Service Quality	2.39	1.03201
Consumer Perceived Value	3.73	0.97
Informal-Formal Market Imbalance	3.930	0.78556

The mean scores and standard deviations (SD) of each variable were calculated to assess the baseline perceptions of respondents concerning core constructs investigated. They are summarized in Table 4.7 below and then discussed in detail by variable.

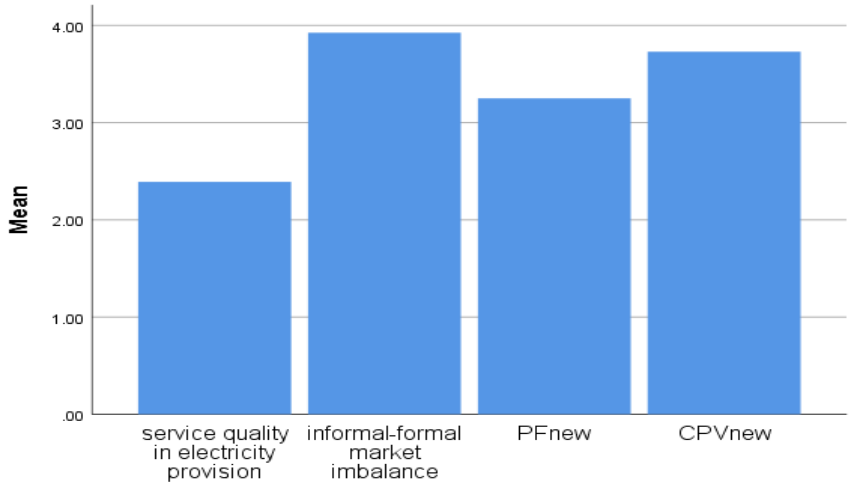


Figure 4.7: Mean Comparison of Key Study Variables

4.3.1 Price Fairness

The overall score for price fairness is 4.31 (SD = 1.21), meaning that the perception of price fairness is at a moderate level, with sharp differences in individual sentiments on it. This medium tier average indicates that a consumer segment feels the formal producers' pricing is fair and that the hygiene standards, product quality and legitimate production costs justify it, but a considerable proportion of customers do not like the price, probably because of the easily available lower-priced informal channel in the market. These are extreme consumer preferences that are shown by the relatively high standard deviation (1.21).

4.3.2 Service Quality

The descriptive analysis of the service quality results showed that the perceptions of the respondents about service quality were interpreted as negative, with an average of 2.39 (SD = 1.03), which is the lowest. This low score can be attributed directly to the systemic problems consumers experience, such as regular power outages, voltage fluctuations, and major disruptions to production, like those often faced by formal producers. The respondents indicated

that frequent power outages disrupt daily operations and break commercial baking timetables, which leaves businesses without any certainty in operations. This supports the previous findings by EEU and MoWE that says poor utility performance is a significant constraint on the process of formal production of injera (Ethiopian Electric Utility, 2025; Ministry of Water Energy, 2020).

4.3.3 Consumer Perceived Value

Even though they expressed a high level of dissatisfaction with the quality of the utility service, respondents mentioned that the situation was much better with the formal producers of injera as they rated the value for money at a very high mean score of 3.73 (SD = 0.97). This makes it clear that consumers highly value the value provided by compliant businesses – on issues such as food safety, consistency of sizes, and consistent hygienic standards of ingredients used – and see these as a good investment given inconclusive pricing perception.

4.3.4 Perceived Informal-Formal Market Imbalance

The informal–formal market imbalance in perception was also the highest with a mean score of 3.93 (SD = 0.79), compared to other items in the present study. The discovery is that consumers overwhelmingly side by side with each other, agree that the informal producers are in far more profitable and favorable market conditions than those of the citizens abiding by the law. Consumers will know that these unfair advantages encompass evaded utility bills for power theft, reduced operational costs, and not even having to deal with any regulatory requirements or taxes.

Almost everyone in the woreda in the sample is aware of this market distortion as shown by the very low standard deviation (SD) of 0.79. This also aligns with the international assessment, including World Bank frameworks, which show that ‘inadequate efficiency' of the power sector and unresolved losses, such as non-technical, play a key role in causing operational cost gaps and contribute directly to platform imbalance between the formal and informal market-based players (World Bank, 2024).

Covering the baseline descriptive info, it's possible to say that the consumer mindset that emerged is complex and multi-layers. Formalized injera bakeries are valued highly but weak electricity service quality is a constraint to their development. This operational disconformity has

split consumers even on how "fair" the formal prices are and the structural functioning of the marketplace is considered as being heavily distorted in favor of non-compliant operators, who exploit illegal use of the utilities.

4.4 Reliability Analysis of the Instruments

Table 4.8: Reliability Test Results of Study Variables

Variable	No. of Items	Cronbach's Alpha	Interpretation
Price Fairness	2	0.942	Excellent
Service Quality	9	0.960	Excellent
Consumer Perceived Value	2	0.989	Excellent
Informal–Formal Market Imbalance	3	0.901	Excellent

The internal consistency and reliability of the measurement scales were tested extensively using the Cronbach's alpha before doing inferential path modeling analysis. Generally, Cronbach's Alpha coefficient values higher than or equal to zero are recommended for determining acceptable reliability in social science research. According to the statistical level, the coefficient of Cronbach's alpha score of ≥ 0.70 is universally accepted as being satisfactory, in social science research. The reliability coefficients for all four of the operating constructs were well exceeded this threshold, highlighting very high reliability and coherence of the operational tools used (Table 4.8).

In particular, the values for the α-coefficients for overall perceived informal formal market imbalance or for consumer perceived value were very high (respectively 0.901, and 0.989). Such strong values allow for the confirmation that these indicators under each latent variable have a substantial linear correlation with each other and are not affected by random errors. This makes the scales extremely valid for measurement and form very suitable for later correlation diagnostic, regression assumption testing and mediation path analysis.

4.5 Validity of The Instrument

In order to achieve the instrument's validity of measuring the theoretical constructs which were developed, the instrument was examined for content and construct validity systematically and established to get accurate result.

To ensure content validity, items of the measurement were selected and modified from validated tools from the literature on which the study was based. To ensure content validity, the items of measurement were selected and modified from validated instruments found in the scientific literature of scholars mentioned in the literature, which underwent the peer review process. Items were scrutinized and adjusted to the local market dynamics in order to ensure that these borrowed scales are relevant to the particular context. This was another step to verify whether the wording, comprehension and its orientation were completely relevant to the urban injera market and comprehensible by the respondents of the woreda, respectively.

The results of the preliminary models in this study, conducted through the inferential tests of the empirical model, provide strong support for Construct Validity

Directional Alignment of The Relationships among the Study Variables: In the correlation analysis, the emergent relationships between the study variables agreed neatly with the relationship assumed in the hypothesis, theoretically;

frameworks. Although the scales measure distinct phenomena that are, as theorized and established, statistically significant, this was further confirmed by the stable path relationships seen in the regression diagnostic testing and also in the Hayes' PROCESS mediation analysis.

To sum up, the results above indicate that the level of validation, reliability and appropriateness of the survey instrument is high in the region of their respective constructs and reflects the dynamics that are likely on the market in this study, so that the survey instrument is broadly suitable for the structural analysis performed in this study.

4.6 Correlation Analysis

The linear relationship among the study variables was judged in terms of preliminary strength of the correlation by using Pearson correlation. Table 4.9 below shows the correlation matrix obtained.

Table 4.9: Pearson Correlation Matrix

Variables	**PF**	**SQ**	**CPV**	**IMB**
Price Fairness (PF)	1	0.887**	0.924**	0.871**
Service Quality (SQ)	0.887**	1	0.877**	0.796**
Consumer Perceived Value (CPV)	0.924**	0.877**	1	0.926**
Informal-Formal Market Imbalance (IMB)	0.871**	0.796**	0.926**	1

Correlation is statistically significant at the 0.01 level (2-tailed). N = 120 respondents. The significant findings of the empirical results obtained show that all four constructs of operations are highly positively and positively related and the level of significance for all the combinations is equal to $p<0.01$. Specifically, price fairness has an extremely high and positive correlation with all of the constructs measured, with correlation coefficients of $r = 0.887$ for service quality, $r = 0.924$ for perceived informal–formal market imbalance, and $r = 0.871$ for consumer perceived value. These numbers illustrate that positive perceptions of price fairness are highly correlated with likes of service, value, structurally unfair market perceptions, and awareness of structural market imbalances. Likewise, the quality of electricity service has strong positive correlations with the perceived value of the informal–formal market ($r = 0.877$) and consumer perceived informal–formal imbalance ($r = 0.796$). This suggests that the structural stability of electricity supply is connected deeply with increased value experiences and consumer consciousness of

marketplace inequity. Importantly, the data highlights the pivotal middle role of consumer perceived value in influencing customers' interpretations of market competition. Consumer perceived value boasts an incredibly strong positive correlation with the perceived informal–formal market imbalance ($r = 0.926$). To conclude, the correlation matrix of the product that is the data gathered and presented supports the theoretical framework being tested as well as Barbar highlights inconsistent supply and informal system together affect consumers perceptions (Barbar et al 2022).

4.7 Regression Assumption and Mediation Testing

A strict path analysis based on regression was carried out during a transition from a preliminary to a formal correlation screening to hypothesis testing. This statistical method, which enables the estimation of the direction, magnitude and significance of the relationships among the study variables simultaneously, is most frequently employed in this type of research.

In the study, consumer perceived value is hypothesized to be an important intervening variable, and so Andrew Hayes' PROCESS Macro (Model 4) was used. These ordinary least squares (OLS) regression model is specially designed for filtering and calculating the unique points of:

Direct impact of price fairness and service quality on the informal – formal market imbalance perceived by the consumers.

The indirect effects that run through the consumer perceived value (CPV), assessed with sound bootstrapping protocols.

Conducting regression and mediation analyses to test conceptual hypotheses and in order to investigate relationships among variables was essential. The relationships direction, magnitude, and significance estimation analyzed using regression-based techniques.

Moreover, as consumer perceived value is the mediator variable while assessing the indirect effect of price fairness and service quality on informal-formal market imbalance, the mediation analyses took place under the technique called Hayes’ PROCESS Macro (Model 4).

Regression assumption tests were researched to verify the results' validity and reliability, including normality, linearity, multicollinearity, and homoscedasticity for the confirmation of the data if it met the requirements to the regression before the hypothesis testing.

4.7.1 Regression Assumption Testing

Assumptions of regression are tested with the help of diagnostic testing.

The field data was first passed through an extensive battery of classical statistical diagnostic tests to make sure that the regression coefficients were mathematically valid, reliable and generalizable. Prior to the testing of the final hypotheses, these tests showed that the data met with all of the assumptions of linear regression:

4.7.1.1 Multicollinearity Test

In multiple regression models, multicollinearity refers to a situation where two or more independent variables are highly inter-correlated. If left unaddressed, severe multicollinearity can bias the regression estimates, artificially inflate standard errors, and make the regression coefficients unstable. To evaluate the degree of inter-correlation among the predictors in this model, diagnostic screening was carried out using Variance Inflation Factor (VIF) and Tolerance values. In quantitative research, the universally accepted criteria for ruling out severe multicollinearity require that all VIF values remain strictly below the critical threshold of 10, and all Tolerance values remain above the threshold of 0.10.The empirical diagnostic results for the study's independent and mediating variables are structured in Table 4.10.

Table 4.10: Multicollinearity Test (Tolerance and VIF Values)

Variable	Tolerance	VIF
Price Fairness	0.121	8.295
Consumer Perceived Value	0.131	7.656
Service Quality	0.191	5.243

4.7.1.2 Normality Test

In multiple regression models, multicollinearity refers to a situation where two or more independent variables are highly inter-correlated. If left unaddressed, severe multicollinearity can bias the regression estimates, artificially inflate standard errors, and make the regression coefficients unstable. To evaluate the degree of inter-correlation among the predictors in this model, diagnostic screening was carried out using Variance Inflation Factor (VIF) and Tolerance values. In quantitative research, the universally accepted criteria for ruling out severe multicollinearity require that all VIF values remain strictly below the critical threshold of 10, and all Tolerance values remain above the threshold of 0.10. The empirical diagnostic results for the study's independent and mediating variables are structured in Table 4.10.

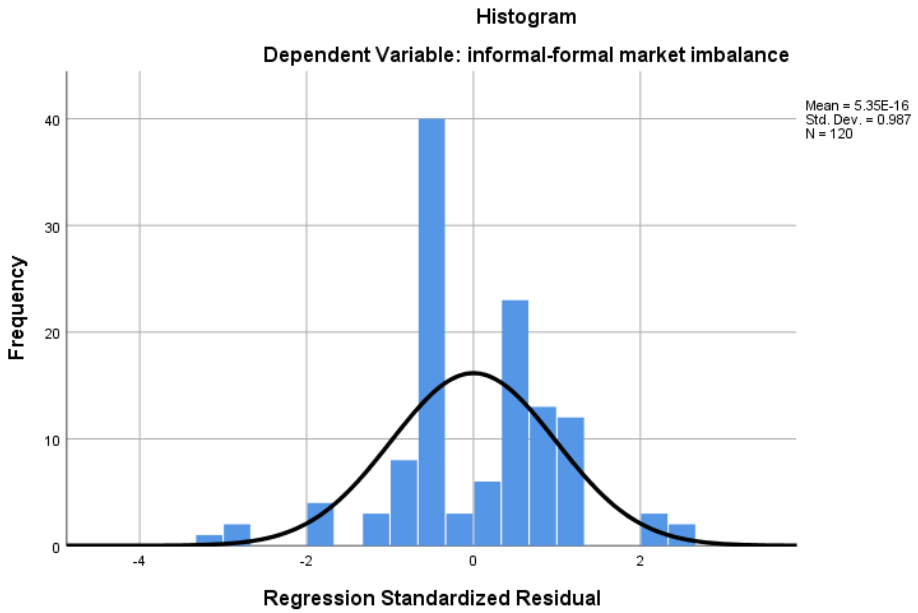


Figure 4.8: Normality Test

4.7.1.3 Linearity Test

To verify that the relationships between the independent predictors and the dependent variable followed a linear pattern, scatterplots pairing the standardized predicted values against the standardized residuals were systematically examined. The data points across the plots were distributed in a straight-line trend without showing curved or non-linear patterns. This visual evidence confirms that linear geometric structures accurately model the interactions among price

fairness, service quality, perceived value, and market imbalances, validating the linearity assumption.

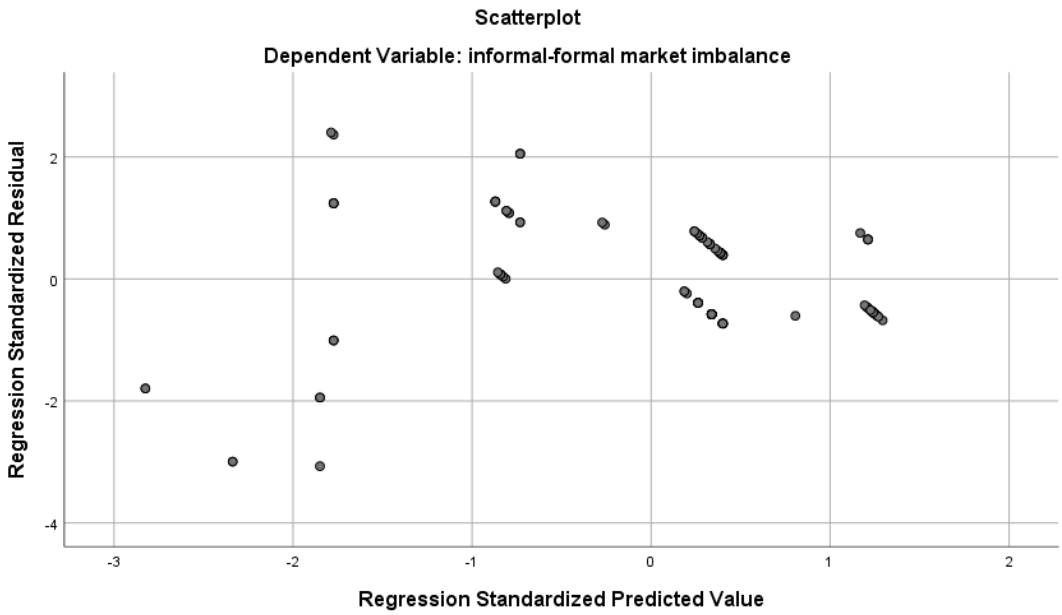


Figure 4.9: Linearity Test

4.7.1.4 Heteroscedasticity Test

To test the assumption of homoscedasticity and ensure that the variance of the residuals remains constant across all levels of the independent variables, a scatterplot of the standardized residuals against the predicted values was generated. The resulting diagnostic plot revealed a completely random dispersion of data points scattered evenly across the graph. Crucially, the points showed no signs of a funnel-shaped or systematic pattern, which would otherwise indicate heteroscedasticity. This even, random distribution confirms homoscedasticity, proving that the model's standard errors are stable and unbiased.

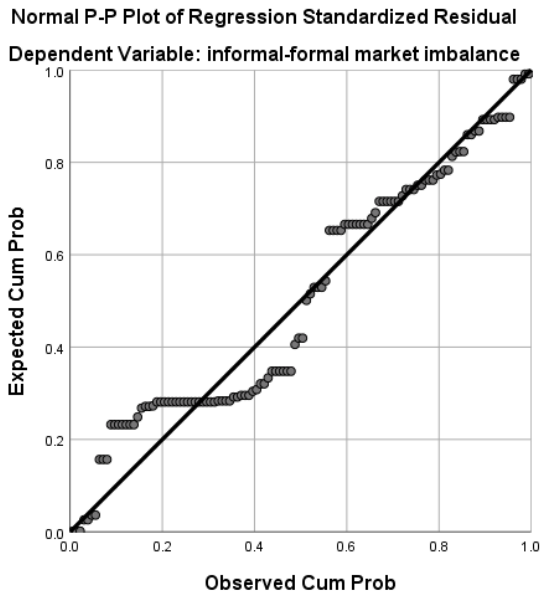


Figure 4.10: Heteroscedasticity Test

4.8 Hypothesis Testing Using Hayes PROCESS Macro (Model 4)

The hypothesis testing was done with Andrew Hayes' PROCESS Macro (Model 4), using a well-established bootstrapping procedure with 5000 bootstrap samples at the 95% lower and upper bias-corrected confidence limits. This type of path analysis is the typical model applied to assess a simple mediation model involving an independent variable, an intervening mediator between the independent variable and the dependent variable, and finally the dependent variable. Since the architecture of Hayes' PROCESS Model 4 is mathematically specified to estimate path modeling when only one predictor is regressed at a time, it may be useful to use more than one predictor in a single path entry with caution, as this approach may result in inaccurate variance calculations.

The conceptual framework was broken into two separate and specific mediation runs, to ensure complete statistical precision and clear causal interpretation.

4.8.1 Mediation Analysis: Price Fairness Model

The first mediation model examined the indirect chain such that price fairness mediated between the perceived informal–formal market imbalance and the measurement of consumer perceived value.

The results of the analysis and the bootstrapped path coefficients obtained using Hayes' PROCESS Macro (Model 4) can be summarized in the table below (Table 4.11).

Table 4.11: Mediation Results (Price Fairness Model)

Path	β	Sig.	Result
Price Fairness → CPV	0.9386	0.000	Significant
CPV → Market Imbalance	0.7344	0.000	Significant
Price Fairness → Market Imbalance (Direct)	0.4219	0.000	Significant
Income→ Market Imbalance	0.5093	0.000	Significant
Purchasing Frquency → Market Imbalance	-0.0810	0.041	Significant

Indirect Effect (Bootstrap Results)

Effect	BootSE	BootLLC	BootULCI	Result
0.6893	0.1035	0.4721	0.8828	significant

To account for the factors of income level and purchase frequency, mediation analysis was performed with the PROCESS Macro (Model 4) by Hayes. The results revealed a significant positive correlation between the perceived value of customers of formal injera producers and price fairness (0.9386, p< .001). This means that consumers that buy formal injera and think that they have a fair price get perceive their value to be higher than those of informal injera producers.

Additionally, consumer perceived value was found to significantly positively influence perceived informal–formal market imbalance (β = 0.7344, p < .001), indicating that consumers' value perceptions have a significant influence on what they perceive as the informal–formal market imbalance. An important direct effect of price fairness on perceived informal–formal market imbalance was found (β = -0.4219, p < .001). It suggests that coefficient of imbalance between

formal and informal producers is decreasing with the increase in the feelings of the people regarding the price fair.

An implication of this finding is that consumers are less likely to view a lack of competitiveness on the informal side of the market as unfair if they feel formal producers are getting fair and reasonable prices. Concerning the control variables, income level was found to be significant yielding positive results (β = 0.5093, significant at .001 level) indicating that increase in income level led to the increase in the level of perceived market imbalance, that is, the higher the level of income the higher the level of perceived market imbalance by the consumers.

Consumers' buying frequency of injera was significantly negative with market imbalance (β = -0.0810, p = .041), indicating that the higher the frequency of the purchasing injera the lower market imbalance. The result of the bootstrapping also revealed that consumer perceived value mediated the relationship between price fairness and perceived informal–formal market imbalance with an effect of 0.6893 (BootLLCI = 0.4721, BootULCI = 0.8828).

The indirect effect was statistically significant as the lower limit of the confidence interval was not zero. Mediation wasn't full however, as price fairness continued to have a strong impact upon the imbalance in the market despite including the mediator. Therefore, the impact of price fairness on the customer's perception of the imbalance between informal and formal sectors is mediated by the perception of value of the products and is partially controlled by income and customer buying frequency. Based on this, Hypothesis 6 was partially supported.

4.8.2 Mediation Analysis: Service Quality Model

Table 4.11: Mediation Results (Service Quality Model)

Path	β	Sig.	Result
Service Quality → CPV	0.9337	0.000	Significant
CPV → Market Imbalance	0.7350	0.000	Significant
Service Quality → Market Imbalance (Direct)	-0.4241	0.000	Significant
Income → Market Imbalance	0.3181	0.000	Significant
Purchasing frequency→ Market Imbalance	0.2180	0.005	Significant

Indirect Effect (Bootstrap Results)

Effect	BootSE	BootLLCI	BootULCI	result
0.6863	0.0985	0.4858	0.8735	Significant

Hayes' PROCESS macro (Model 4) was used to conduct mediation analysis with Income level and Purchase frequency as covariates. Results showed that service quality had significant positive influence in consumer perceived value ($\beta = 0.9337$, $p < .001$) which suggests that service quality had positive impact in consumers perceived value so that the greater the service quality, the higher the consumers perceived value. The model explained 91.15% of the variation of Consumer perceived value ($R^2 = .9115$). Moreover, the income level ($\beta = 0.3597$, $p < .001$) and the purchase frequency ($\beta = -0.6913$, $p < .001$) significantly affected consumer perceived value.

It also showed that the consumer perceived value has significant positive influence on consumer perceived imbalance in informal market/formal market ($\beta = 0.7350$, $p < .001$). Perceived informal–formal market imbalance also had a significant negative direct effect on service quality ($\beta = -0.4241$, $p < .001$), which suggests that consumers' perceptions of the market imbalance between informal and formal producers decrease with service quality. An R^2 of .9204, a model accounting for 92.04% of the variance in perceived informal–formal market imbalance, has been obtained.

Regarding control variables, the level of individual income had a significant positive effect ($\beta = 0.3181$, $p < .001$), while purchase frequency had significant positive effect ($\beta = 0.2180$, $p = .0048$). The above results show that there are links between income and purchasing activities

with the perception of the difference between formal and informal market participants by consumers.

Based on the results of the Bootstrap analysis, there was a significant indirect effect of service quality on the consumer perceived informal–formal market imbalance via consumer perceived value (Effect = 0.6863, BootLLCI = 0.4858, BootULCI = 0.8735). The indirect effect was statistically significant as the 95% confidence interval did not contain zero. But since the direct effect of service quality on market imbalance was still statistically significant when the consumer perceived value was added to the model, it was a partial mediation. In this way, the relationship between the quality of the services and the perceived informal–formal market imbalance is partially mediated by the consumer perceived value when controlling for income level and purchase frequency. Therefore, Hypothesis 7 was partially supported.

All togther the followings are hypothesised results:
H1: Price fairness makes a significant and positive contribution towards consumer perceived value. Supported ($\beta = 0.9386$, $p < .001$). The service quality has a significant positive effect on consumer perceived value. Supported ($\beta = 0.9337$, $p < .001$).

H2: Consumer's perceived value is positively and significantly related to service quality. Supported ($\beta = 0.9337$, $p < .001$).

H3: The impact of consumer perceived value on consumer's perceived informal–formal market imbalance is significant and positive. Supported (Price Fairness Model: $\beta = 0.7344$, $p < .001$; Service Quality Model: $\beta = 0.7350$, $p < .001$).

H4: Perceived price fairness has a significant negative effect on perceived informal–formal market imbalance. Supported ($\beta = -0.4219$, $p < .001$).

H5: H0: There is no significant negative relation between service quality and perceived imbalance of informal and formal market. Supported ($\beta = -0.4241$, $p < .001$).

H6: Consumer perceived value mediates the relationship between perceived price fairness and informal–formal market imbalance. Supported (Partial Mediation). The indirect effect was significant (Effect = 0.6893, 95% BootCI [0.4721, 0.8828]), while the direct effect remained significant ($\beta = -0.4219$, $p < .001$).

H7: Customer perceived value is a mediator between service quality and informal–formal market imbalance. Supported (Partial Mediation). The indirect effect was significant (Effect = 0.6863, 95% BootCI [0.4858, 0.8735]), while the direct effect remained significant ($\beta = -0.4241$, $p < .001$).

4.9 Conclusion of Mediation Analysis

In order to evaluate the indirect effect of price fairness and service quality on perceived informal–formal market imbalance, mediation analysis was performed using the PROCESS Macro (Model 4) by Hayes with 5,000 bootstrap samples and 95% confidence interval. Income level and the frequency of buying were controlled for as potential alternative explanations.

The findings showed that price fairness and service quality were significant and positive in influencing consumers perceived value. In particular, those who felt the price was fair and the service was reliable were more likely to report feeling that much value. They indicate that positive appraisals of pricing and service quality strengthens the overall assessment of the benefits felt from formalized injera producers.

In addition, the perceived value that consumers have, in both mediation models, had a significant positive effect on the perceived imbalance of the informal sector–formal sector. It implies that the consumers' value perception is important in determining consumers' evaluations of the difference between formal and informal market participants.

Consumer perceived value significantly mediated the relationship between price fairness and perceived informal–formal market imbalance, and the relationship between service quality and perceived informal–formal market imbalance were revealed by the mediation results. The confidence interval for both indirect effects were not zero, further supporting the statistical

significance of the mediation effect. The findings, however, indicate that a lack of perceived value for the informal sector had no substantive effect on the imbalance of the informal market as perceived, while the effect of price fairness and service quality were statistically significant even in the models across all three groups. Hence, the perceived value in the eyes of the consumer partially (but not completely) mediated these relationships.

In general, the results show that consumer perceived value is an important component in understanding the relationship between price fairness, service quality and consumer perceived market imbalance. The findings indicate that consumers do not consider fairness of price and quality of services separately.

Instead, the value they get in the light of the costs they have to bear, is first estimated and then this value perception is used to determine the nature of the competitive relationship between the formal and informal injera producers. Price fairness and service quality at the same time continue to have both direct effects on consumer perceptions of market imbalance, meaning that a portion of these relationships is mediated by consumer perceived value.

4.10 Summary of Key Findings

It is a significant study in the Kolfe Keranio injera market in terms of revealing factors affecting the perception of consumers and market behaviors. The results indicate that consumers' perceptions of formal producers' service quality, value and price fairness influence their evaluations. The descriptive text basically argued for four possible dimensions of consumers' evaluations of informal–formal market alternatives which are price fairness, service quality, consumer perceived value, and perceived informal–formal market imbalance.

The results of the reliability and validity excerise indicated that the measuring tools were applicable to the study: the constructs showed good internal consistency. Correlation results showed that all the variables included in the study were statistically significant. Consumers indicated increased perceived value based on the reliability of their electricity services, and their perceptions of the price being fair. In addition, consumer perceived value was strongly correlated

with perceptions of informal–formal market imbalance, reflecting its significance in determining market perceptions.

All the regression diagnostic tests suggested that the data used in regression-based analysis satisfied the regression assumptions. Results indicated that there were no serious violations of normality, linearity, homoscedasticity and multicollinearity, suggesting the data could be used for hypothesis testing and mediation analysis. The results of the hypothesis testing and mediation analysis were of several important findings. First, Consumer perceived value was significantly and positively influenced by service quality. This implies that better reliability, responsiveness, and assurance leads to better ratings from consumer perceptions of assessment of formal injera producers.

The provision of reliable electric power is crucial because the production of injera is electricity intensive and prone to lack of supply and reliability. Second, there was a significant positive difference between price fairness and consumer perceived value. It is true that uptake of products from the formal producers was stronger in cases where consumers thought prices were reasonable and justified. This fact gives an idea of the critical role fair practices play in the strengthening of consumers' value perceptions.

Third, the perception of value by consumers substantially affected the downsides of the informal–formal market imbalance effects. That is, the results confirm that the consumer's conclusion about the relative advantages/disadvantages of the relative positions of formal and informal producers is significantly shaped by his or her evaluation of the value that he or she derives from formal market actors. Additionally, the mediation analysis showed a significant mediation effect for Consumer Perceived Value in the relationship between Price Fairness and Market Imbalance and also that between Service Quality and Market Imbalance. Both direct and indirect effects of the bootstrap confidence intervals were significant and did not include the value of 0.

The confidence intervals for the indirect effects were significant and didn't contain 0. One difference between the two analyses, however, is that the addition of income level and purchase frequency as control variables resulted in the direct impact of price fairness on market imbalance

still being important and statistically significant. Thus, the consumer perceived value was identified as partly acting as a mediating factor between both relationships.

This research indicates that people do not access market competition through only the perception of the value. On the contrary, price justice and service quality affect consumers' perceptions of market imbalance directly and indirectly via consumers' perceived value. In other words, in addition to consumer perceived value, price fairness and service quality has a direct impact on consumers' perception of whether the informal sector can beat the formal sector. The overall results show that the enhancement of service quality, fair pricing practices and consumer perspectives of value is all important to make the formal injera producers more competitive.

The findings also point to the need to pay attention to the concept of consumer value as an influencing factor in the formation of perceptions of both the market's and the consumer's perception of the market and their consumer value. In addition, it is important to note that service quality and price fairness play an independent role as value-forming factors for the consumer market perception.

5. CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of this chapter is to sum up and synthesize the major specific finding of this research laying them in the theoretical and empirical context developed in previous chapters. This section summarizes the statistical diagnostics produced in chapter 4 to make formal conclusions and recommendations for improved electricity service performance and competitiveness as well as fairness of the marketplace based on formal evidence of injera production. Further, this chapter draws out its general theory, management and policy implications and while recognizing its limitations in the research realm, points to positive research futures directions.

The main objective of this study was analyzing the relationship between the following factors namely, price fairness, quality of service, consumer perceived value and consumer perceived informal –formal market imbalance. This investigation put the commercial production of injera in a particular economic context of Kolfe Keranio Woreda. In the context of this framework, ease of access to electricity has profound effects on the work man undergoes and in the longer run adoption of production technology.

One of the central mediating mechanisms that transforms the electricity service quality and the electricity pricing structure in the systemic market perceptions was studied: that is, the consumer perceived value. Notable is that the judgements about formal sector competitiveness and informal sector competitiveness depend on the amount of available features of decent utilities at the baseline.

For the purposes of investigation of the above relationships, the study followed the quantitative explanatory approach, a type of study design. The above relationship is studied using the quantitative approach, the explanatory study design was used. The analytical procedure is

sequential and then tested the classical linear regression assumptions ensuring data integrity, that is, by descriptive data statistics, model Pearson correlation analysis and formalization of the hypothesis test. Lastly, the indirect pathway (direct and bootstrapped) was specified to be deconvoluted and computed with the PROCESS macro (Model 4) of Andrew Hayes.

Psychometrics employed were carefully chosen to make sure that the instruments used in this research were reliable and valid. The Cronbach's alpha indication gave a very high internal scale consistency, ensuring the survey had a good cohesion and consistency within itself. Given this lack of conceptual overlap at the item level between the two scales, a targeted item refinement process was adopted to address this issue, where the two scales are dubbed the price fairness scale and the consumers' perceived value scale, respectively. The results were excellent reliability in the movement of the new constructs, and a significantly enhanced discriminant validity. On top of that, our study's findings were adherent to the construct validity as the relationships which have emerged with the study variables are exact matches with the proposed relationships by our theoretical framework.

Inferential models obtained the correlation for the four main factors (Price Fairness, Service quality, Consumer perceived Value, Perceived Imbalance of informal–formal market) which were significant and high. The findings from mediation analysis indicated that the relationship between price fairness and service quality, as well as the relationship between perceived informal–formal market imbalance were fully mediated by consumer perceived value. The bootstrap results indicated that the indirect effects were statistically significant since the 95% BCIs did not overlap with the Zero.

The constructs of price fairness and service quality, however, were not excluded from the analysis from the first analysis when the consumers' perceived value was added to the mix. All effects were statistically significant when the mediator was added to the model. This means that the relationships were partly but not totally mediated by perceived customer value. These results indicate that the assessment of market imbalance is not only conducted with the consideration of market fairness, market services, but also conducted in accordance with market values. Rather, consumers make their evaluation of the market imbalance directly, with regard to price fairness and to the quality of service, and indirectly, via consumer perceived value.

For this reason, an important component of the relationship is related to consumer perceived value and not the other part. One of the important results of the study is that other factors besides the market observable conditions influence the attitudes of the consumers and market perceptions in the injera sector. Price fairness, service quality, and the overall value that consumers attach to the formal and informal producers impact their perceptions of competition between the two and drive the decision to participate in formal markets. For electricity-powered production systems, service reliability is of special importance since production, product availability, and consumers' judgements of the formal producers' products can be impacted by interruptions and fluctuations in electric service.

The results also indicate that structural problems of formal producers have the potential to impact the consumer perception in multiple ways. On the other hand, these challenges could have an effect on service quality and pricing strategies, directly impacting perceptions of market imbalance. They also influence an individual consumer's sense of value that he or she is receiving from the formal producers, which can also affect market perceptions. Consumer perceived value is therefore a crucial explanatory variable between the consumers' assessment of the price fairness and service quality of the formal and informal producers and the consumers' general assessment of the competition between the formal and informal producers.

In its infrastructure-based service conditions, value formation and market perceptions in the informal–formal market dynamics of the injera sector, the study contributes to understanding the dynamics. The results of the study demonstrate that the impact of consumer psychology and market environment is significant on the perceptions of informal–formal market imbalance in an empirical context. Thus, raising the quality of services, ensuring equitable pricing and boosting consumer value perception all play a key role in improving the competitiveness of formal producers and reduce the perceived market imbalance of the commercial sector of injera.

5.2 Summary of Key Findings

In this section of the data analyzed and main conclusions, an overview is provided. This is a summary of primary aims of the research and specific hypotheses that are to be tested along the way to the research.

5.2.1 Influence of Price Fairness on Consumer Perceived Value

Based on the results, it is found that price fairness is the most important in determining the consumers' value of consumer in Kolfe Keranio Woreda 08 injera market. When consumers are deciding whether to purchase a product or not, their purchase considerations involve analyzing the retail price's value and fee to the actual price of production. These are options which, upon reflection, consumers agree that they have “intrinsic” productivity to offer in formal enterprises, but if they consider that prices in formal enterprise would be "too high", compared to other alternatives, then they strongly tend to shift to informal producers.

The same consumer behavior was observed in reality as reported nontechnical power loss and occurrence of unreliability in the operation of the Ethiopian Electric Utility (EEU) during such period dramatically impacts the manufacturing activities considering the impact of prices that follows this behavior (Ethiopian Electric Utility, 2025). The concept of 'price fairness base' must be attended by, and consumer worth perceptions must be created and developed by vibrant overall. A consumer's value perceptions generally are based on the concept of price equity. In essence, in the case of fair market pricing, relative to the real production needs, and a fair degree of transparency, consumer perceived value of course will increase.

5.2.2 Influence of Service Quality in Consumer Perceived Value

This effect of service on consumer perceived value or its primary components according to the three dimensions of service reliability, service assurance and service responsiveness is weak, and less apparent than the effect of price fairness but is still positive and meaningful. Consistency of the electricity supply, directly relates to the value the consumers place on electricity being produced into these certified products. Formal bakeries must have a source of electricity as well as warm areas where they can bake and cool their products. If they are no more effective, and they are problematic for the bakeries, regular consumers become aware that there are different baking processes and they switch to it because it becomes problematic. In other words, the consumers know that it is not better if one of the deficiencies of the electric company decreases the normal service capacity, which means the amount of electricity and/or heat used for baking and cooling at the bakery.

The lack of predicting the impact suggests that the behavior of the residents with regards to consuming electricity has become more persistent as time passed, such as baking injera, for example. The Ministry of water and energy (2020) also noted that the lack of reliability of electricity affects the productivity of SME's, and that consumers' perception of their product is based on the price of their product more than on the reliability of the electricity. Given the information provided it is possible to conclude that service quality is important “secondary” factor if the pricing fairness is to be a factor and so is also the measure of the optimism towards improving the targeted grid stability is to be important in influencing consumers' calculation of the value of this market.

5.2.3 Consumer Perceived Value and Market Imbalance

This study shows that there is a high and statistically significant relationship between consumer perceived value and perceived imbalance of the informal–formal markets. This means that the degree of imbalance felt by consumers is not just based on the discernible imbalance between formal and informal producers, but upon their assessment of the benefits they derive from consumption compared to the costs they experience.

Market imbalance is thus not only an economic phenomenon but rather also reflects consumers value judgements and perceptions. The findings indicate that the overall perceived value of the markets in question is how the consumers' consider the alternatives of both formal and informal market. World Bank revealed that, if the consumer recognizes that formal producers provide benefits in return for the cost, they will be more likely to have a positive attitude towards business services (World Bank, 2024).

On the other hand, if consumers have a stronger perception of the imbalance in both formal and informal market participants when informal producers seem to be more advantageous when compared to their prices, they may strengthen their perception of imbalance. The results are especially relevant in markets that are subject to more onerous regulatory and operating costs for formal producers, as is the case in most markets. These distinctions can impact the consumers' view of value and therefore their assessment of competition in the market. Thus, consumers' value evaluations are given significance as one way to interpret the general conditions of the market.

The mediation analysis also revealed that the consumers' perception of the value of the product has a pivotal place in the mediation between price fairness and service quality aspects and mental representation of the imbalance in the informal–formal market. Nevertheless, mediation effects indicated that the relationships are mediated in part so consumer perceived value does not fully account for these relationships. Rather, consumer perceptions of market imbalance are determined by both what consumers think about value and the direct impacts of price fairness and service quality.

In conclusion, the results suggest that consumer perceived value is an important determinant in influencing market perceptions. Consumers compare the formal and informal producers by looking at price/service alone, but also the value they feel they are getting.

Therefore, enhancing value perceptions and factors underlying value, including fair pricing and good service quality, is crucial if formal injera producers are to increase the competitiveness of the formal sector and to diminish the perception of market imbalance.

5.2.4 Mediation Role of Consumer Perceived Value

Consumer perceived value (CPV) was assessed as a mediating factor in the connection between price fairness and the formal–informal market imbalance.The perceived value of the product by the consumers (CPV) was also investigated as a mediating factor between price fairness and the perception of imbalance between the formal and informal sector. The results indicated that the two relationships in this study were mediated by consumer perceived value. It was found that consumer perceived value was an important link between the two, indicating the influence of perceived value of consumers between price fairness and the perception of market imbalance.

Both price fairness and service quality were found to have significant positive impact on consumer perceived value, as revealed by the results obtained. Price fairness had a slightly larger effect on perceived value than the service quality, among the two predictors. This discovery implies that price perception of fair and just, apart from other factors, is a key component in the consumers' judgment of value added by formalized producers of injera.

The results support Zeithaml's value theory which suggests that consumers' perceived value results from a general evaluation of the value perceived benefits received as compared to the value perceived costs (Zeithaml, 1988). Consumers' judgments about value are based on the price and services during the correspondents to the injera market.

Price fairness→consumer perceived value→market imbalance

Service quality→consumer perceived value→market imbalance

The indirect effects were statistically significant in both mediation models, because the 95% confidence intervals in both models were not equal to zero. Compared with the first analysis, however, the direct effects of both price fairness and service quality on people's perception of informal–formal market imbalance still held up, despite the inclusion of consumer perceived value in the model. Thus consumer perceived value was measured and was found to partly rather than fully mediate these relationships.

These results suggest that value assessment is not the only way to experience an imbalance of the market. But price fairness and service quality directly and indirectly affect perceptions of market imbalance via consumer perceived value. In effect, they judge the competitiveness of the exchange between formal and informal producers on the basis of the fairness of prices, the quality of the services provided, and the benefits the consumers get from the formal producers.

Findings overall reveal that consumer perceived value is central in their perceptions of the informal–formal market imbalance and that price fairness and service quality have independent effect on their perceptions of the informal–formal market imbalance. It also implies that formal producers need to go beyond enhancing their value perceptions for consumers to ensure that they are able to improve their competitive position in the market place through other means such as fair pricing and high service quality.

5.3 Discussion of Key Findings

The results of this research are similar to other studies conducted about price fairness, service quality, consumer perceived value and consumer behavior. At the same time, it aims at

complementing existing studies by uncovering the performance of these factors in a market with both formal and informal electricity producers in differing conditions. The findings throw more light on consumer perception of imbalance between formal and informal producers and consumer perception of market conditions.

The study's main consumer perceived value conclusion is that price fairness is the most important consumer perceived value. This is consistent with Xias' and also Boltons' the literature which suggests that when faced with a price comparison, consumers will compare prices against expectations of a product from the market, and/or the available alternatives (Xia et al., 2024; Bolton et al., 2003). Consumers feel they are obtaining a good deal when they feel that the price level and terms are reasonable, fair and simple. This finding implies that in the case of the injera market, consumers value the pricing practices as a key criterion to assess formal producers. This research shows that value perceptions of consumers are based not solely on the price they paid but also on the different value being received by them based on price paid.

The study also validated the positive role of service quality on the perceived value from the consumers' point of view. It is in line with the SERVQUAL framework developed by A. Parasuraman and his team that emphasizes the service reliability, responsiveness, and assurance (Parasuraman et al., 1988). The service quality was not as important as the price fairness, but the service quality is was a strong statistical significance factor of consumers's perceived value. This implies that they evaluate the gain which they get from the formal producers based on their experience of service. For an electricity dependent production system (like injera production), stable production conditions are important in determining the consumers thinking since it helps ensuring the availability of products and helps stabilise production.

The results also revealed that consumer-acceptance of the product value is an important factor influencing the perceived imbalance in the informal market and formal market. This result corroborates with the value theory of Valarie Zeithaml which suggests that consumers compare the benefits and costs of products. The results suggest that consumers make a price comparison between the formal and informal sectors, and look at the value (Zeithaml, 1988). A formal producer feels he would be better off if he bought the product from the formal sector and would

therefore shape the consumers' perception of the market conditions and the competitiveness of the sector.

One of the major contributions of the study is the mediation analysis. The results showed that consumers' perception of value was significantly located between the price fairness and the market imbalance, and between the service quality and the market imbalance variables. But the mediation effects were only partial. This finding would suggest that this relationship is mediated - at least partially through a consumer perceived value. However, price fairness and service quality also had direct and strong impacts on the perceived informal–formal market imbalance, despite the fact that the consumer perceived value was a strong determinant of the market imbalance. Consequently, consumers seem to make judgements on market imbalance based on both direct assessments of the fairness of prices and service quality and indirect assessments, which take place via perceived value.

This is above and beyond the current theory as it does indicate that it is possible to generate a market perception without any perceived value in the eyes of the consumer. Consumers, on the other hand, make a balanced judgement between the formal and informal market players when assessing the same – price of the formal producers, the service offered, value obtained – in a fair manner. These analysis, therefore, lent credence to a more holistic view of market behaviour where both an economic and a psychological appraisal of the market value plays a part in the perception of market imbalance.

Overall results suggest that there is a relationship between consumer psychology, market environment and service related problems in the commercial injera industry. Based on the student's answers, consumer's perception of the market balance, service received and value received are factors that can influence the market imbalance experienced by the consumer. These topics are thus part of the agenda to enhance the competitiveness of the formal producers: Improving the quality of services; setting up equal prices; adding perceived value for consumer's.

5.4 Conclusions

The findings of the study and detailed analysis of the study leads to the following conclusions.

The most influential determinants of the consumer perceived value in Kolfe Keranio Woreda 08 injera market were price fairness. People do not understand a product's price solely on the basis of the price but rather on the basis of the reasonableness, justifiability and consistency of the price, as compared to the benefits the customer obtains. The findings suggest that the fairness aspect plays an important role in the consumers' assessment of the value of formal producers. Therefore, fair and transparent pricing mechanism is one of the key measures for enhancing the consumer perceived value and competitiveness of the formal producers.

Second, service quality was determined to be strongly positively correlated with the consumer perceived value but not as strong as price fairness. The three factor of reliability, responsiveness and assurance positively influence consumers' perception of formal producers. The production of injera is quite electricity consuming which only a stable supply of electricity and consumer confidence can ensure the continuity of production. The results show that better service quality will be able to increase the value perception of the consumers as well as boost the competitive strength of formal producers.

Thirdly, the perceived value of the consumers was found to be one of the important predictors of perceived informal–formal market imbalance. This means consumers make their comparison judgements between the formal and informal producers based on the value they receive. Consumer perceived value is then a very important cognitive mechanism via which consumers react to market conditions and evaluate market alternatives.

The results of the study show that the perceived value of the products partially mediates the relationship between price fairness and perceived informal–formal market imbalance, and the relationship between service quality and perceived informal–formal market imbalance. Indirect effects were found both in mediation analysis, significant for the 2 indirect effects. Overall, direct effects of price fairness and service quality were still significant even though consumer perceived value was controlled for. It refers to the direct impact that the consumer's perception of the imbalance in the market has on his perception of the fairness of the price/ service quality and also through his perception of value.

Fifth, the structural imbalance could be only a part of the reasons behind perceived formal-informal market imbalance because the consumers' psychology assessment is also a factor. As revealed in the results, perceptions of fairness, service quality and value are factors affecting the perception of the imbalance in the market. So it is not enough to consider the market imbalance phenomenon only from an economic point of view; a behavioral approach needs to be applied as well.

Lastly, the study finds that the interaction of pricing practices, service quality, consumer value perceptions and market conditions have an influence on the market for commercial injera. The results show that service quality improvement, fair pricing, and consumer perceived value are all important variables to strengthen the competitiveness of the formal producers and reduce the informal producers' perceptions of imbalance between formal and informal producers.

5.5 Recommendations

This study aims to recommend targeted measures for policy makers, regulatory agencies, the utility companies, formal producers and consumers based on the empirical conclusion and findings of this study to resolve the systemic imbalances in the market.

5.5.1 Ethiopian Electric Utility and Energy Authorities

It is absolutely for the Ethiopian Electric Utility to stabilize the commercial ecosystem that emerged in this study. The most urgent priority is to increase the consistency and reliability in the provision of electricity from the Utility, including an active effort to support small and medium enterprises whose main activities are entirely electricity dependent that produce formal injera, for example.

These illegal practices of the informal operators are particularly shaping the perception of price fairness of the consumers and the utility needs to incur heavy efforts to address widespread electricity theft. To this end, certain illegal methods must all be detected and eradicated such as direct grid interconnections or illegal devices that bypass or cheat through the legitimate distribution networks, all of which support illegitimate market competition.

Chronic unreliability and out-of-date network infrastructure are both challenges that the utility will need to address from a fundamental perspective—which will require financial investment on a sustainably long-term basis. Improper functioning in the distribution networks and distribution of transformer losses must be understood, and modern transformers have to be placed and infrastructure strengthened to stabilize the flow of energy and meet the needs of secure energy supply that will create immediate savings on operational inefficiencies and prevent raw material waste for formal producers.

Moreover, the utility will have to become an inadvertent market regulator; inevitably, any electricity cost difference translates into a vast, disproportionate effect on commercial competition, so the utility will have to closely monitor and manage electricity distribution to firms that depend on electricity. Lastly, the most important internal change the utility needs to make will probably be to its own staff. Potential internal governance weaknesses enable informal production, or simply fail to prevent meter tampering on their own, should be tackled with security rigor from within.

The utility should have a well-designed accountability and transparency policy, with comprehensive anti-corruption measures, that help to keep its field staff honest. To assure the legal metering, fair and balanced distribution of power for all commercial consumers in the market, the only way is to cleanse the rotten fruits of corruption from the tree of public governance.

5.5.2 Formal Injera Producers

The development and implementation of an aggressive competitive strategy based on value is needed for formal injera producers to be able to withstand the competitive pressure in the market and offer a higher price for their products. Legal operators, rather than trying to equal the unregulated crowd, they should promote and advertise the highest levels of food hygiene, food safety practices that are provable, and the highest level of certificates of official food safety. Ensuring consumer awareness of this explicit legalism and compliance helps to dissociate consumer awareness from more informal solutions which are anonymous, and direct them towards the Formal branded ones/established ones, which are given the trust they are entitled to.

In addition, formal producers are expected to cease from being simply detached business operators, and take initiative to engage in productive cooperation with related municipal regulators and public water utilities. Establishing good institutional relations can help formal operators collectively voice their demands for market supervision against illegal operators; it can also provide a more direct link for operators to report local failures of infrastructure facilities and illegal connections of corresponding energy equipment in the immediate production areas.

In order to attain true economies of scale, internally, “formal” injera baking businesses need to optimize the production workflow – that is, each bakery needs to bake more quality products in a single-user round of the baking machine in order to systematically erode the premium of commercial electricity tariffs and business compliance fees. Producers need to make sure that a measure to provide standby, reliable power is in place to avoid significant financial loss resulting from loss of electricity because it is readily available (automated commercial power generators, or high capacity solar-inverter storage batteries), to keep production going and to minimize raw batter wastage.

Last, formal operators have to define and implement clear communications policies in the marketplace, which are specifically tailored to change consumer attitude towards price fairness. Explicitly explaining the processes by which their compliance and stable wages and the fair costs of producing the utilities of energy and food contribute to their overall retail price can levitate the perceived value of their price, and place it on a firmer footing than the public's trust as a mark of product integrity, consumer safety, and civic legitimacy.

5.5.3 Policymakers and Regulatory Bodies

The general level of malfunctioning of the market must be corrected by the government actors and macroeconomic planners in a detailed institutional reform. The public energy governance framework should connect to the Trade Authority Bureau as well as the municipal energy markets regulators and be established soon for the development of energy governance. If electricity is viewed as a separate sector, provision and regulation do not make sense because on a micro level electricity has a direct influence on the manufacturing costs.

Coordinated policy framework is required to ensure the availability of a coordinated policy framework that will explicitly be supportive and promotion of local trade equity. To deal with the problem of electricity theft that is spiraling out of control, the state needs a tough strategic enforcement program to tackle it and also respond to the underlying problem; theft of electricity on the grid. This should be done vigorously to make the people working for the utility more accountable – close supervision of the utility from within, with public awareness campaigns aimed at consumers about the impact of electricity theft on retail prices and the impact on community markets.

Moreover, the development of a special support mechanism for SMEs is needed, particularly a well-structured support mechanism for the electricity tariff. Introducing differential energy prices (either by introducing multiple tiers or by providing specific commercial manufacturing rates) to micro-enterprises will help defuse heavy costs, enabling the formal energy providers' price system to better level off energy prices, expand operations, and gradually phase out the financial subsidy of the informal, unmetered energy provider.

Last, it is important to ensure the continuity of a formal and informal market balance over the long term, which will necessitate a very coordinated and multi-agency response by the energy sector, trade administration bureaus and law enforcement agencies. Inter-ministerial cooperation, namely MoWE, EEU, Ministry of Trade, and Ethiopian Energy Authority; to do this is most effectively achieved by progressively phasing out all energy-related distortions and by stopping illegal "grid bypasses", and, crucially, by achieving the elimination of informal manufacturing practice in urban food markets.

5.5.4 Consumers

A fundamental consumer awareness and buying-change is needed for a balanced and equitable marketplace. Consumers should now be aware of the problem of electricity theft in a systematic manner and the direct and distorting impact of electricity theft on price variations in the retail market, which they are part of. Consumers should recognize that these lower prices may be the direct result of the stealing of utility resources, so they are only artificial and not a true competitive advantage. This knowledge of the structure is crucial as it enables the consumer to make an analytical and insightful purchase decision and not just one based on monetary costs.

But this key awareness cannot be gained in isolation. There is a need to carry out targeted, large-scale public awareness campaigns by the Government agencies, consumer protection organizations and civil groups. These educational programs should make the community aware that the informal vendors offer electricity at cheaper rates and that they are benefitting from illegal electricity connections and electricity consumption without paying meter rates. The emphasis of these campaigns should be the maintenance of correct legal operating expenses of the products along with the elimination of product differentiation and quality standards. Consumers will be educated through these clear channels of what may seem like a good deal on the surface is in fact a legal violation that violates market integrity.

So, the consumers should widen their considerations in the process of day-to-day purchasing decisions, price-wise. A balanced market structure is based on the objective judgment of the consumers on the quality of food products like injera, wholesomeness and cleanliness. Consumers can contribute to a more equitable market system by selecting to buy from licensed, inspected producers who undertake good sanitary practices and they also benefit their communities.

Furthermore, these common “shady” activities should be known by the general public as having the larger economic consequences. The informal operators' activities not only are an injustice to the formal tax paying injera bakeries but a direct punishment to the consumers as well, because the local economy is negatively affected. Public utilities such as the Ethiopian Electric Utility are the ones who have to pay the price for such huge losses and pilferage of power grids by increasing their regular tariffs and distributing charges on the legally metered citizens. The fact that consumers know that they are paying a hidden tax to compensate for the informal energy sector's stolen energy will eliminate the incentive to buy energy from unverifiable sources. Such practices are illegal and knowledge, awareness and active refusal to have them is a civic duty necessary for the alleviation of unfair burden on the public and paving a clean path to sustainable national infrastructures.

5.6 Implications of the Study

The empirical results of this research project provide three significant extensions to the field of consumer behavior, the field of transactional equity, the field of informal market behavior in developing economies and extend classic theoretical models in three major ways.

5.6.1 Theoretical Implications

Firstly, this study goes beyond the limits of the existing theory of Perceived Price Fairness Theory as conceptualized by research such as Xia and Bolton. However, the classical consumer behaviour models are based on the assumption of the market transparency and uniformity of costs (structural void), that is, assuming that the cost assessment takes place in a vacuum. As this work shows, however, the appraisals of price-fairness are not without impact by the context of the infrastructure environment in a market of goods, such as is the case with injera. Artificial losses of electricity, losses of electricity due to failure and hidden electricity theft are eliminated thanks to the cost structure of the informal producers. The findings from this study, however, indicate that such cost differences may occur at retail level as price difference and impact the price norms and notions of 'justifiable' or 'acceptable' price of the consumer.

Secondly, in this study the classic Parasuraman model is re-contextualised (SERVQUAL model). Further, service dimensions of reliability, responsiveness and assurance became service dimensions of consumer perceived value (CV) having a lower absolute effect compared to those of the service dimensions of pricing (Parasuraman et al., 1988). The public don't seem to have noticed anything is amiss along power lines and there is no sign they noticed and any efficiency loss by the system itself, since the grid system is hopelessly out of sync. If the public utility is not performing optimally in delivering services, the delivery of the cognitive load changes (in theory). Quality of service is not seen as a luxury but competitive based on the customer's perception and the operating restrictions will be directly added to the value valuation equation: one value.

Finally, this study also contributes to the use of the Means-End Perceived Value Theory as an active psychological intermediary in the context of macroeconomic structural imbalances by establishing evidence of the theory (Zeithaml, 1988). Results of the path modelling with the Hayes' PROCESS Macro (Model 4) showed that perceived value is a statistically significant variable and that there are important relationships between the variables price fairness and service quality which may play a role in determining the perceived formal – informal market imbalance. This is a pictorial representation that from the perspective of the regulation and/or the

billing from the utility, the market imbalance is NOT a ‘fact of the market'. Unlike it it is a construction process in the marketplace, which is carried out by the consumer in a cognitive assessment of value differential between compliant manufacturing and non-compliant manufacturing (World Bank, 2024). This is to introduce a cognitive-behavioral dimension to the classical theory of competition in developing countries which lacks this dimension. This gives the "old" concept on 'competition' in the developing countries an extra cognitive-behavioral twist.

5.6.2 Practical implications

The viability and success of all elements of the formal food production system – in terms of operations and commercial viability – depends exclusively on technical performance of the public utility infrastructure. The improvements in meaningful reliability, assurance and responsiveness in the grid will directly impact the consumer's buying habits of compliant businesses and provide a fair playing field for businesses to promote their improved manufacturing practices. However, the necessary service improvements would be difficult to achieve, unless there is a systematic and aggressive effort to curb electricity theft. The current low operating costs that informal operators enjoy enables them to keep the prices low, which consumer deems it as a transactional fairness. The only fair way to put an end to this vicious circle in the market and to create the level playing field is to "clean up the distribution system. In addition, this study found some practical implications, which indicate that the consumers can be motivated to think about other characteristics of the products besides the product price, by lowering the service quality difference and transparency of the price in formal businesses. The ability to affect this infrastructure and pricing decisions can have significant real-world impact, not just in the market-place, but over time, through raising awareness and improving the state of the world in terms of public health.

5.6.3 Policy implications

Obviously, the policy implications of the empirical results have been unambiguous and well established with a strong linkage between national and local energy and trade governance. Systemic problems with electricity distribution, for example unmetered direct connections, and meter tampering are no longer the problem of the internal technical loss of the electricity

company. On the contrary, electricity fraud is a huge distortionary activity in the market which affects the business overhead, influences the retail electricity prices and consequently affects electricity consumption patterns that should be taken into consideration by macroeconomic planners.

The fact calls for establishing an extremely interdependent governmental system, in which the energy policy is intentionally connected to the municipal trade policy and the development plans of small businesses. The data indicate that structured utility support is an economic need today to formal SMEs.

As it is now, businesses that follow the system are disadvantaged in the event of frequent power outages, arising from unmetered consumption of power by the informal sectors, and the high commercial tariffs. Rates for energy use by industry, special manufacturing zones for licensed bakers can be effective tools for formalizing the economy if the energy policy is targeted at the sectors in need (Ministry of Water and Energy, 2020). Finally, the coordination of policy between ministries is the most effective solution to issues of a long history of infrastructure problems, misaligned perceptions of value and a level playing field.

5.7 Limitation of the study

The followings are obtained limitations:

- First and foremost, the study is restricted to one woreda and the conclusions to consumer behavior within this specific area of the city/region are not easily transferable to the broader picture of consumer behavior in the city/region.
- Gathering empirical evidence amongst the informal producers was very difficult, due to lack of regulations, resulting in problems of safety, transparency and legal issues.
- It used exclusively a quantitative research design approach which has the drawback of neglecting the subtleties and complexes motivating factors of complex consumer activity.
- Last, although there are several types of food production that are electricity-intensive, this study was limited to the injera sector, which could potentially narrow the scope of food

sector activities that could contribute additional insight from other electricity intensive sectors.

5.8 Suggestion for Future Researchers

Based on the results of the study, some suggested recommendations for future study are given as follows:

At first, Future investigators should think about using a Longitudinal research design, as this is the first consideration to make. Because of the coming and going of good or bad economic seasons (or even cycles) a much firmer opinion could be reached as to the changing character of the consumer's response to different attitudes to prices and service over a much greater span of time, and in turn a stronger feeling of causal relationships could be formed.

Secondly, future research may expand the geographic scope of these results to provide further findings in relation to the performance of infrastructure, consumer economic status and the local market, which can increase the generalizability of results. An additional opportunity from the study could be detection of the influence that different peri-urban and urban conditions on the utility grid have to the value that consumers perceive from the services and the competition (formal/informal) if the model can be replicated in other parts of Ethiopia.

Thirdly, there may be further research studies conducted using mixed methods or a purely qualitative method. The qualitative findings of this study could be incorporated with the results obtained from the quantitative analysis along with some other qualitative method such as depth interviews, focus group discussions or ethnographic observation to shed light on deeper and very subtle psychological motivations and structural issues encountered in the interactions of actors in the market situation.

Fourthly, this study used the brand switching intention as a mediating measurement item, while future studies should consider it as a mediating and/or main measurement item. For the researchers, the structural shift would offer a more behavioral perspective of the explicit shift in consumer choice over time in response to a sense of price unfairness and utility disruptions.

Fifthly, ongoing research should directly quantify the perceptions, practical experiences and coping strategies of the actual producers of injera. To comprehensively understand the supply side constraints would add a systemic clarity in analyzing the supply chain and would extend the analysis from the consumer to the legal and illegal actors also dealing with the constraints of the grid.

Finally, future study should emphasize on technology for utility management, and utility's adoption of smart meter, automated grid monitoring and tamper-proof distribution technologies. If those interventions are studied, it will yield real-world evidence to help determine the technical steps necessary to reduce electricity theft, allow for the creation of more transparent revenue log, and help promote fair competition in the energy market.

Last but not least, research is needed on the impact of transforming informal producers' adaptation to transition in light of energy policy reform at a macro level. There is a need for more research in the effectiveness of targeted restructuring of the tariff regime, modernized tariff regimes and institutional incentives to evaluate their effect on the reduction of informal practices at the level, their actual impact on the policy impact, and the creation of an equitable and competitive regime.

5.9 Final Remarks

The findings of this study indicate that the imbalance of formal and informal market in Kolfe Keranio Woreda 08 is not an institutional and/or regulatory issue, but a consumer behaviour issue as the infrastructure contributes less to the market. There are several disadvantages for the formal producers, primarily due to the lack of reliability in the electricity supply, the economic impact of non-technical losses and electricity theft.

According to the empirical results of this study, it is noted that the public does not measure the service's quality and the price of the service separately as they evaluate the fairness of the price and the quality of the service. On the contrary, they package these environmental factors to form an integrated outlook on the value of the consumer and take a decision to either become part of the formal and tax-compliant economy or stay in the informal economy. As a major link between the formal producers and consumers, perceived value cannot be taken for granted since it is what

matters to the latter. They have to work to develop their perceived value, by streamlining their services, making them more appealing by promoting cleanliness and openly and honestly discussing their pricing with the informal providers.

Finally, it requires a coordinated response – in order to close this market gap, the public utility governance has to be more directly linked with the municipal trade policy. Theft prevention and upgrading of electricity line are crucial measures to protect law-abiding businesses, while a transitional rate on electricity and/or a manufacturing zone for those who comply with regulation is necessary. Penalising formal producers for being compliant and not doing enough to keep the grid to their own standards and level the cost curve of production is also a problem as to how they can supply the market. Structural equity of the marketplace, at the national and local level for the wider urban community, will be needed to re-establish financial viability of local entrepreneurs and a sustainable, transparent and resilient national infrastructure.

REFERENCES

Adams, J. S. (1965). Inequity in social exchange. *Advances in Experimental Social Psychology*, 2, 267–299. https://doi.org/10.1016/S0065-2601(08)60108-2

Addis Standard. (2025, March 3). Ethiopian Electric Utility reports over 50 million Birr loss due to theft and damages. https://addisstandard.com

Arkorful, V. E. (2022). Unravelling electricity theft whistleblowing antecedents using the theory of planned behavior and norm activation model. *Energy Policy*, 160, 112680. https://doi.org/10.1016/j.enpol.2021.112680

Babar, M., Khan, A., & Ali, S. (2022). Electricity theft and market distortion in developing economies. *Energy Policy Journal*.

Babar, Z., Jamil, F., & Haq, W. (2022). Consumer's perception towards electricity theft: A case study of Islamabad and Rawalpindi using a path analysis. *Energy Policy*, 169, 113189. https://doi.org/10.1016/j.enpol.2022.113189

Bansal, H. S., Taylor, S. F., & James, Y. S. (2005). Migrating to new service providers: Toward a unifying framework of consumers' switching behaviors. *Journal of the Academy of Marketing Science*, 33(1), 96–115. https://doi.org/10.1177/0092070304267928

Bolton, L. E., Warlop, L., & Alba, J. W. (2003). Consumer perceptions of price fairness. *Journal of Marketing Research*, 40(4), 474–491. https://doi.org/10.1509/jmkr.40.4.474.19383

Carr, D., & Thomson, M. (2022). Non-technical electricity losses. *Energies*, 15(6), 2218. https://doi.org/10.3390/en15062218

De Soto, H. (1989). *The other path: The invisible revolution in the Third World.* Harper & Row.

Ethiopian Electric Utility. (2025). Distribution system report and loss assessment. Addis Ababa, Ethiopia.

Ethiopian Electric Utility. (2025). Operational performance and system loss report. Addis Ababa, Ethiopia.

Ethiopian Electric Utility. (2025). Tariff structure and distribution report. Addis Ababa, Ethiopia.

Ethiopian Electric Utility. (2025). Six-month performance report 2025/26. Addis Ababa, Ethiopia.

Ethiopian Electric Utility. (2026). Operational reliability report. Addis Ababa, Ethiopia.

Ethiopian Energy Authority. (2024). Energy loss and regulatory compliance report. Addis Ababa, Ethiopia.

Ethiopian Ministry of Trade and Regional Integration. (2023). Urban informal sector market assessment report. Addis Ababa, Ethiopia.

Feige, E. L. (1990). Defining and estimating underground and informal economies: The institutional approach. *World Development*, 18(7), 989–1002. https://doi.org/10.1016/0305-750X(90)90081-8

Glauner, P., Meira, J. A., Valtchev, P., & State, R. (2016). Non-technical losses in electricity systems. *arXiv*. https://arxiv.org

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Pearson.

Harris, J. R., & Todaro, M. P. (1970). Migration, unemployment and development: A two-sector analysis. *The American Economic Review*, 60(1), 126–142.

Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). Guilford Press.

Kahneman, D., Knetsch, J. L., & Thaler, R. (1986). Fairness as a constraint on profit seeking: Entitlements in the market. *The American Economic Review*, 76(4), 728–741.

Lewis, W. A. (1954). Economic development with unlimited supplies of labour. *The Manchester School*, 22(2), 139–191.

Liu, Z., Ding, W., Chen, T., Sun, M., Cai, H., & Liu, C. (2023). An electricity theft detection method through contrastive learning in smart grid. *EURASIP Journal on Wireless Communications and Networking*, 2023(1), 54. https://doi.org/10.1186/s13638-023-02258-z

Ministry of Water and Energy. (2020). National energy sector development strategy. Addis Ababa, Ethiopia.

Nadeem, A., & Arshad, N. (2021). A data-driven approach to reduce electricity theft in developing countries. *Utilities Policy*, 73, 101304. https://doi.org/10.1016/j.jup.2021.101304

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12–40.

Smith, T. B. (2004). Electricity theft: A comparative analysis. *Energy Policy*, 32(18), 2067–2077. https://doi.org/10.1016/S0301-4215(03)00182-4

World Bank. (2016). Ethiopia electricity expansion project. https://www.worldbank.org

World Bank. (2023). Ethiopia energy sector diagnostic report: Power system losses and efficiency challenges. Washington, DC.

World Bank. (2023). Electric power losses (% of output) – Ethiopia. https://data.worldbank.org

World Bank. (2024). Energizing Ethiopia: Electricity access and sector challenges. https://www.worldbank.org

World Bank. (2024). Energy access and consumer behavior report. Washington, DC.

World Bank. (2024). Ethiopia electricity sector diagnostic report. Washington, DC.

World Bank. (2024). Ethiopia urban productivity and energy access report. Washington, DC.

World Bank. (2024). Informal economy and electricity access report. Washington, DC.

World Bank. (2024). Power sector financial sustainability assessment: Ethiopia. Washington, DC.

World Energy Council. (2025). Loss reduction and revenue protection in Ethiopia. https://www.worldenergy.org

Xia, L., Monroe, K. B., & Cox, J. L. (2004). The price is unfair! A conceptual framework of price fairness perceptions. *Journal of Marketing*, 68(4), 1–15. https://doi.org/10.1509/jmkg.68.4.1.42733

Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means–end model and synthesis of evidence. *Journal of Marketing*, 52(3), 2–22. https://doi.org/10.1177/002224298805200302

Zhang, L., Mueller, D., & Tanaka, K. (2025). Capital starvation and distribution constraints: The structural cycle of non-technical losses. *IEEE Transactions on Power Systems*, 40(2), 891–904.

APPENDIX A

Research Questionnaire

Questionnaire for Injera Consumers

Research Topic: Price Fairness and Service Quality as Drivers of Informal–Formal Market Imbalance in the Injera Sector: The Mediating Role of Consumer Perceived Value

Study Area: Kolfe Keranio Woreda 08, Addis Ababa.

Instructions

Please indicate your level of agreement with each statement by ticking (☐) the appropriate box.

Scale:

1 = Strongly Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Strongly Agree

Section A: Demographic Information

1. Age: _____

2. Gender:

☐ Male ☐ Female

3. Occupation:

☐ Student ☐ Government Employee ☐ Private Employee ☐ Trader

☐ Housewife ☐ Unemployed

4. Monthly Income:

☐ < 3000 ☐ 3000–6000 ☐ 6000–10000 ☐ 10000–15000 ☐ > 15000

5. Family Size:

☐ 1–2 ☐ 3–4 ☐ 5–6 ☐ More than 6

6. Frequency of Purchasing Injera:

☐ Daily ☐ Several times a week ☐ Once a week ☐ Occasionally

Section B: Price Fairness

7. I think to be injera products price reasonable, there exist the influence of electricity price.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

8. formal injera products, in comparison to the price of alternative, is fair.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Section C: Service Quality – Reliability

9. The provision of electricity is consistent, particularly for injera production.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

10. During buying from formal producers, I seldom undergo through electricity interruptions.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

11. For a smooth production process, the electricity supply is reliable.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Section D: Service Quality – Assurance

12. I believe the provider of electricity is qualified.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

13. I trust that formal producers obey electricity regulations.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

14. Formal producers cooperate transparently regarding electricity related issues.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Section E: Service Quality – Responsiveness

15. problems related to electricity are resolved immediately.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

16. formal producers deal with electricity service issues practically and effectively.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

17. Electricity interruptions are solved promptly if complaints arise.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Section F: Consumer Perceived Value

18. I gain good value from formal injera producers for the price I pay.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

19. The price worth the benefit regarding formal products who complaints electricity.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Section G: Perceived Informal–Formal Market Imbalance

23. I my perspective, unfair competition is created by informal producers that affect the formals.

☐1 ☐2 ☐3 ☐4 ☐5

22. in my opinion, a result of illegal electricity uses, the informal injera is cheaper.

☐1 ☐2 ☐3 ☐4 ☐5

25. I believe that because of lower electricity costs, informal producers benefit.

☐1 ☐2 ☐3 ☐4 ☐5

Ethical statement

This study used a data collection process strictly in accordance with academic and ethical research standards. All information collected with this questionnaire was used only for academic purposes to meet this research project's requirement. The respondents had an option to participate or not in the research and were able to withdraw from the survey without any obligations or penalties.

Absolute confidentiality and anonymity is used in the handling of data and reporting of results to ensure anonymity and confidentiality of all participants. This did not include any personal identifying information, but only information that was voluntarily provided by a respondent. All information gathered is kept securely, processed in an aggregated form and only the primary researcher has access to the data, ensuring complete data security.