

https://dspace.org/

A commuters' perspective on the adoption of e-payment solutions in the minibus-taxi industry

Ramabale, Frank

2024

University of the Witwatersrand, Johannesburg

https://hdl.handle.net/10539/44001

Ramabale, Frank. (2024). A commuters' perspective on the adoption of e-payment solutions in the minibus-taxi industry [Master's dissertation, University of the Witwatersrand, Johannesburg].WireDSpace.

Downloaded from a DSpace repository. https://dspace.org/

A commuters' perspective on the adoption of e-payment solutions in the minibus-taxi industry

Frank Ramabale

Supervisor: Dr Ayanda Magida

A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in the field of Digital Business

Johannesburg, 2024

ABSTRACT

Adopting electronic payment systems (e-payment) has become more widespread in many South African industries. Due to their convenience, security, accessibility, and efficiency, e-payment methods are widely perceived as the primary and preferred mode of transaction. Commuters' perceptions, experiences, and attitudes towards using e-payment solutions for travel are examined. A quantitative methodology was employed to gather various commuter perspectives and viewpoints and identify potential barriers to adoption. Data collection focused on Gauteng public transport commuters to ensure the study's relevance to the target population.

This research offers valuable guidance for decision-makers in developing practical solutions that promote the broader adoption of e-payment systems within the public transportation sector. It provides valuable insights into the discourse on modernising and enhancing payment systems in public transportation while shaping the future of urban mobility. By comparing the results of this study with recent research, a further contribution is made to a more comprehensive understanding of user perceptions of adoption in this domain.

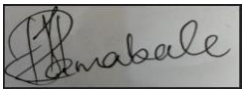
Additionally, the study suggests government intervention and regulation to ensure the successful implementation and adoption of e-payment systems. Ultimately, the study's findings underscore the potential benefits of e-payments to enhance the overall experience, efficiency, convenience, and customer satisfaction for commuters using minibus taxis, fostering optimism about adopting e-payment adoption by both commuters and businesses. The digital revolution of urban transportation makes it imperative to understand commuters' behaviours and engagement with e-payment systems in the context of minibus.

KEYWORDS

Digital payment, Minibus Taxis (MBT), Mobile payments, Cash handling, Taxi industry, Tap and go, Fourth South Western Township (Minibus), Small and Medium Enterprise

DECLARATION

I, ____Frank Ramabale_____, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in the field of Digital Business at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Name: Frank Ramabale Signature: 

Signed at ……Johannesburg……

On the ……06…….. day of ……June…… 2024…..

DEDICATION

The report is in memory of my late grandmother, Vho-Matamela (Vho-Makhadzi) Ramabulana Tshikondela; I wish you could be here to share in my joy with each accomplishment. I will never forget your unwavering devotion and words of wisdom: “dzhenani tshikolo nwana wa nwananga ni ri bvise vhusiwanani”, and I hope you continue to rest in peace. To my late mom, Vho-Mukumela Ndavha Sarah Ramabale, you are dearly missed and forever in my heart.

ACKNOWLEDGEMENTS

My gratitude goes to:

▪ The King of my life, Jesus Christ, my saviour, the tenacity, joy, strength, and guidance of the Holy Spirit through the testing period of this study. Ebenezer Khotsi vha tadulu, thendo na vhugala kha vhone Murena.

▪ My research supervisor, Dr. Ayanda Magida, Thank you for your tough love, patience, encouragement, positive words, wisdom, guidance, motivation, and continued support. I owe this report to you, Ngiyabonga kakhulu…!

▪ My kids, Mukundi and Zwothe, for their continued support and prayers.

▪ MoRiski (Lesego, Makgabo, Nakedi): I love you guys to heaven and back. It wasn't easy, but it was worth it.

▪ The MMDB Research WhatsApp Support 2023 group – You all were amazing

▪ Shaka Zwane, thank you, friend, as you soldier on with your master's, too.

▪ My extended family, friends, and colleagues for listening and always helping.

TABLE OF CONTENTS

LIST OF TABLES 11

LIST OF FIGURES 12

LIST OF ACRONYMS 13

CHAPTER 1. INTRODUCTION 14

1.1 Statement of purpose 14
1.2 Background of the study 14
1.3 Research Problem 15
1.4 Research Questions 16
1.5 Rationale 17
1.6 Delimitations of the study 19
1.7 Definition of terms 20
1.8 Assumptions 21
1.9 Report Outline 22

CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK 24

2.1 Introduction 24
2.2 Background Discussion 26
2.3 What are the factors that could influence commuters' adoption of e-payments as a method for taxi rides? 31
2.3.1 Benefits of E-Payment Methods 31
2.3.2 The Evolving Landscape of E-Payments 32
I. Ease of use for commuters 32
II. Overall Impact 33
III. Definition of E-Payment 33
2.4 What are the Perceived Barriers and Opportunities for e-payments in the taxi industry? 34
2.4.1 Safety for drivers and commuters 34
2.4.2 Formal Employment Relations for Drivers 34
2.4.3 Government Partnership 35
2.4.4 Partnerships with Technology Companies 35
2.5 What is the taxi industry benefits or disadvantages of introducing the e-payment method to commuters of the taxi industry? 36
2.6 What is the role of trust and the perceived privacy risk factors for commuters, in e-payments adoption? 38
2.7 Theoretical Framework 39

2.7.1 Research Model 41
2.7.2 Performance expectancy 42
2.7.3 Social Influence: 42
2.7.4 Facilitating conditions 43
2.7.5 Hedonic motivation 43
2.7.6 Behavioural Intention 44
2.8 Conclusion of Literature Review 45

CHAPTER 3. RESEARCH METHODOLOGY 46

3.1 Research Paradigm 46
3.1.1 Research Approach 47
3.1.2 UTAUT2 Model and Technology Acceptance 47
3.1.3 The Influence of Demographics and Experience 48
3.2 Research Design 48
3.3 Data collection methods 49
3.4 Population and sample 50
3.4.1 Population 50
3.4.2 Sample and Sampling Method 50
3.4.3 Random Sampling Method 51
3.4.4 Sampling Approach and Rationale 52
3.4.5 Justification for Online Survey Distribution 52
3.5 The research instrument. 52
3.5.1 Commuters Adoption and e-Payment Acceptance Constructs 53
3.6 Procedure for data collection 55
3.7 Data analysis strategies and interpretation 56
3.7.1 Quantitative Data Analysis Methods 56
3.7.2 Statistical Software and Descriptive Statistics 56
3.7.3 Correlation and Regression Analysis 56
3.7.4 Pattern Recognition and Outlier Analysis 57
3.7.5 Data Reporting and Ethical Considerations ..... **Error! Bookmark not defined.**
3.7.6 Dissemination of Research Findings and Data Analysis Methods .... **Error! Bookmark not defined.**
3.7.7 Statistical Modelling for Data Analysis 57
3.8 Quality Assurance 57
3.8.1 External validity 58
3.8.2 Internal validity 58
3.8.3 Randomization and Group Equivalence 58
3.8.4 Measurement Instrument Selection 58
3.8.5 Construct Validity 59
3.8.6 Discriminant validity 60
3.8.7 Reliability 60
3.9 Ethical considerations 61

CHAPTER 4. PRESENTATION OF RESULTS 63

4.1 Introduction 63
4.2 Participants profile 63
4.3 Participants Demographics Summary 65
4.4 Descriptive Analysis 67

4.4.1 Travelling using Minibus Taxi 67
4.4.2 H1. Performance expectancy has a positive influence on commuters' readiness to use e-payments..... 69
4.4.3 H2. Social Influence has a positive influence on commuters' readiness to use e-payments. 69
4.4.4 H3. Facilitating Conditions has a positive influence on commuters' readiness to adopt and use e-payments. 70
4.4.5 H4. Hedonic motivation has a positive influence on commuters' readiness to adopt and use e-payments. 70
4.4.6 H5. Behavioural Intention has positive correlation with commuters perceived use of e-payment, and their prior experience with similar technology. Source: (IBM Corp., 2023) 71
4.5 PCA- Principal Components Analysis 71
4.5.1 Convergent and Discriminant Validity 71
4.5.2 Derived Understanding of the Communalities Measurement 73
4.5.3 The Scree Plot 77
4.5.4 Scale Reliability 79
4.6 Correlation Analysis..... 80
4.6.1 Correlation matrix results of each construct question of the instrument 80
4.6.2 Correlations Matrix results of the six variables and their relationships 81
4.6.3 The Pearson's Correlations results testing hypotheses. 83
4.6.4 Scatterplot for Performance Expectation and Behavioural Intentions 84
4.6.5 Scatterplot for Hedonic Motivation and Behavioural Intentions..... 85
4.6.6 Scatterplot for Social Influence and Behavioural Intentions..... 86
4.6.7 Scatterplot for Price Value and Behavioural Intentions 87
4.6.8 Scatterplot for Habit and Behavioural Intentions 88
4.6.9 Scatterplot for Facilitation Condition and Behavioural Intentions 89
4.6.10 Multiple Regression Analysis 89
4.7 Summary of the results/findings 93

CHAPTER 5. DISCUSSION OF THE RESULTS 95

5.1 Introduction..... 95
5.2 Discussion about PE positively influence on commuters' readiness to use e-payments.....95
5.3 SI positively influence on commuters' readiness to use e-payments. 96
5.4 FC positively influences commuters' readiness to adopt and use e-payments. 96
5.5 HM positively influences commuters' readiness to adopt and use e-payments. 97
5.6 H positively influence commuters' readiness to use e-payments. 97
5.7 BI positively correlates with commuters' perceived use of e-payment, and their prior experience with similar technology…98
5.8 Conclusion 99

CHAPTER 6. CONCLUSIONS AND RECOMMENDATIONS ……100

6.1 INTRODUCTION 100
6.2 CONCLUSIONS REGARDING THE FACTORS THAT COULD INFLUENCE COMMUTERS' ADOPTION OF E-PAYMENTS IN THE TAXI INDUSTRY. 100
6.3 CONCLUSIONS REGARDING THE PERCEIVED BARRIERS AND OPPORTUNITIES FOR E-PAYMENTS IN THE TAXI INDUSTRY. 102
6.4 CONCLUSION REGARDING THE BENEFITS OR DISADVANTAGES OF INTRODUCING THE E-PAYMENT METHOD IN THE TAXI INDUSTRY. 103
6.5 CONCLUSIONS REGARDING THE ROLE OF TRUST AND THE PERCEIVED PRIVACY RISK FACTORS OF E-PAYMENT ADOPTION. 103
6.6 RECOMMENDATIONS 104
6.7 LIMITATIONS OF THE RESEARCH 105
6.8 SUGGESTIONS FOR FURTHER RESEARCH 106

REFERENCES ……109

APPENDIX A: PARTICIPANT INFORMATION SHEET 121

APPENDIX B: PARTICIPANT AGREEMENT FORM 122

APPENDIX C: RESEARCH INSTRUMENT.....124

APPENDIX D: PARTICIPANT AGREEMENT FORM 129

APPENDIX E: VARIOUS ANALYSIS TABLES AND CHARTS...130

LIST OF TABLES

Table 3.1: Population Stats Table…….…….52

Table 3.2: Commuters Adoption and e-Payment Acceptance Constructs…….54

Table 4.1: Survey Concerted and Not Concerted ……..64

Table 4.2: Survey response and completion…….……64

Table 4.3: Progress Descriptive Statistics…….……....64

Table 4.4: Gender, Age, Employment & Education Status……..…66

Table 4.5: Awareness of e-payment availability for Minibus Taxi rides…….68

Table 4.6: Proportion Test (2 Outcomes)…….……....68

Table 4.7: KMO and Bartlett's Test……..…….…….……..72

Table 4.8: Communalities ……..…..…74-75

Table 4.9: Total Variance table……..…….……76

Table 4.10: Rotated Component Matrix……..……...…78

Table 4.11: Summary of Cronbach Alpha results…….……..…..79

Table 4.12: Reliability Statistics…….……80

Table 4-13: Correlations Matrix results of each construct question of the instrument.80-81

Table 4-14: The Pearson's Correlations of the six variables……..…83

Table 4-15: The Pearson's Correlations of FC and BI…….89

Table 4-16: Multiple Regression Analysis…….……90

Table 4-17: The ANOVA Analysis…….……..91

Table 4-18: Coefficients Analysis……..…….92

Table 4.19: Summary of hypothesis results …….……..……...94

Table 6.1: Consistency table: research questions, propositions, data collection and data analysis……..……107-108

LIST OF FIGURES

Figure 2.5.1 Uber business model, along with comments on Uber's offerings and their uniqueness at each stage ……..……..……..38

Figure 2.7.1 UTAUT2 Conceptual Model……...41

Figure 3.5.1 Commuters Adoption and e-Payment Acceptance Constructs……...54

Figure 4.4.1: Travelling using Minibus Taxi ……..……...67

Figure 4.4.2: H1. Performance expectancy has a positive influence on commuters' readiness to use e-payments…….…….……..…..69

Figure 4.4.3 H2. Social Influence has a positive influence on commuters' readiness to use e-payments…….....69

Figure 4.4.4 H3. Facilitating Conditions has a positive influence on commuters' readiness to adopt and use e-payments…….....……..…...70

Figure 4.4.5 H4. Hedonic motivation has a positive influence on commuters' readiness to adopt and use e-payments…….……70

Figure 4.4.6 H5. Behavioural Intention has a positive correlation with commuters' perceived use of e-payment and their prior experience with similar technology……..…….……..……..71

Figure 4.5.3 The Scree Plot…….……..77

Figure 4.6.4 Scatterplot for Performance Expectation and Behavioural Intentions……..84

Figure 4.6.5 Scatterplot for Hedonic Motivation and Behavioural Intentions…....85

Figure 4.6.6 Scatterplot for Social Influence and Behavioural Intentions……..86

Figure 4.6.7 Scatterplot for Price Value and Behavioural Intentions…….……87

Figure 4.6.8 Scatterplot for Habit and Behavioural Intentions…….……...88

Figure 4.6.9 Scatterplot for Facilitation Condition and Behavioural Intentions…..89

LIST OF ACRONYMS

Behavioural Intention (BI)

Chi-square minimum (CMIN)
Confirmatory Factor Analysis (CFA)

Corona Virus (COVID)

Corporate Social Investment (CSI)

Facilitations Conditions (FC),

Fourth Industrial Revolution (4IR)

Habit (H)

Hedonic Motivation (HM)

Information and Communication Technology (ICT)

Kaiser-Meyer-Olkin (KMO)

Minibus Taxi (MBT)

National Taxi Task Team (NTTT)

Perceived Usefulness

Performance Expectancy (PE)

Price Value (PV)

Principal Components Analysis (PCA)

Unified Theory of Acceptance and utilise of Technology (UTAUT)

Small and Medium Enterprise (SME)

Social Influence (SI),

South African National Taxi Council SANTACO

CHAPTER 1. INTRODUCTION

1.1 Statement of purpose

This quantitative study assessed and investigated the readiness of the Minibus Taxi industry to adopt e-payment. It also examined the perceived impact of introducing e-payments to commuters as a transactional model for taxi rides in the Minibus Taxi industry.

1.2 Background of the study

In South Africa, public transport is still the enabler of many economic, political, and societal activities. Hence, this makes access to public transport one of the significant issues for those communities who are low-income earners, and their location is also part of the marginalised group (Mthimkhulu, 2017). As a result, in most of those communities, their access to public transport is limited, and even if it is available, it becomes overcrowded since it might be the only mode of transport in those communities. This has, in its way, influenced their contribution to the economy, access to employment activities, education or other services that contribute to living a quality life (World Bank, 2022).

This study acknowledges the history of the Minibus taxi industry, which has faced multiple challenges from within the industry, including internal politics due to government actions, economic situations, lack of regulations, and violence (Schalekamp & Behrens, 2010). Their research also acknowledges that great strides have been made to elevate the state of the transport industry, and entrepreneurial spirit is the driving force behind the progress made so far. They also state that the minibus taxi industry lacks innovativeness and is still far behind in commuter service and competitiveness. The lack of quick, efficient, and effective payment methods that save commuters time drags it behind.

Data from Statistics South Africa (Stats SA, 2020) underscores the critical role of the minibus taxi industry in South Africa's transportation landscape. The report, profiling non-motorized users, reveals that the industry transported an estimated

61.8% of commuters daily in 2020. This figure solely reflects household travel and excludes individuals employed within the industry, such as taxi drivers, owners, and marshals.

Despite its classification within the informal economy, the taxi industry makes a significant contribution to the South African economy. However, a key challenge lies in the limited formalisation of the sector. As Tsele (2017) highlights, labour laws often do not register workers within the industry, resulting in a lack of tax contributions. Furthermore, while estimates suggest the industry employs over 185,000 individuals directly, with an additional 150,000 indirect workers (e.g., vendors at taxi ranks), the true extent of regulation and taxation within the sector remains unclear.

Through an exploration of existing literature and case studies, this research intends to identify specific examples of how access to digital tools and skills can improve the lives of marginalised individuals. By understanding these benefits, policymakers and practitioners can develop strategies to ensure that all members of society have equal access to digital resources and can fully participate in the digital economy. This will open the rigid cash market whilst introducing the solutions (Saruchera & Mpunzi, 2023).

This study seeks to contribute to a growing body of research recognising digital capital's transformative power for promoting social inclusion and reducing inequality. By highlighting how digital technologies can empower marginalised communities, this research aims to inform policies and practices prioritising equity and ensuring all individuals can thrive in a digitally connected world (Shaheen & Chan, 2015).

1.3 Research Problem

With the current progression and advancement of the Fourth Industrial Revolution (4IR) in South Africa, the Minibus Taxi industry is not spared from this disruption, as we see the introduction of Uber, which introduced e-payments for taxi rid (2015). It is at an advanced stage in most industries; the effect of e-payment as a service has also been examined, including its benefits of ease of payment,

convenience, and low out-of-pocket form of e-payment. E-payment as a service has also been examined with its benefits of ease of payment, convenience, and low out-of-pocket cost in terms of handling cash and the risks it brings (to help them that will help them, and there will be a huge reduction in cash handling and using cash as a token of payment within most industries. These will highly impact the Minibus Taxi industry, and they must devise strategies to help them prepare for this eventuality.

This study explored the potential impact of e-payment systems on the Minibus Taxi industry, particularly focusing on commuters. Drawing on the research of Ivanova (2022), the study investigated how e-payment could be implemented to address a key commuter pain point: the risk associated with cash handling. The goal was to introduce e-payment without disrupting the current taxi industry operations but rather to deliver value to commuters, ultimately benefiting both taxi drivers and owners. Visa et al. (2017) provided further support by highlighting the cost and time inefficiencies associated with cash collection compared to digital payment solutions. This research also examined existing technologies that could facilitate a smooth digital payment rollout within the taxi industry. By investigating these aspects, the present study aimed to contribute to the body of knowledge surrounding e-payment adoption and acceptance within the Minibus Taxi industry.

1.4 Research Questions

In this study, the following questions will be examined:

- What factors influence commuters' adoption of e-payments as a method for taxi rides?
- What are the Perceived Barriers and Opportunities for e-payments in the taxi industry?
- What are the benefits or disadvantages of introducing the e-payment method to taxi commuters?
- What are the role of trust and the perceived privacy risk factors for commuters in e-payment adoption?

1.5 Rationale

This study investigated the potential impact of implementing e-payment systems on commuters, both taxi drivers and owners, within the Minibus Taxi industry. Employing a quantitative approach, the research aimed to thoroughly explore the perceived barriers and opportunities associated with e-payment adoption from the perspective of these stakeholders. Furthermore, it examined potential risk factors that might deter commuters from embracing digital payment methods.

By delving deeper into the taxi industry's complexities, the study sought to identify existing barriers and propose viable solutions to facilitate e-payment adoption. Ultimately, the goal was to enhance commuters' quality of service. However, the research scope did not encompass issues beyond e-payment implementation, such as lawlessness, speeding, or reckless driving.

The empirical rationale of the study

This study aimed to highlight and expand upon the impact of Fourth Industrial Revolution (4IR) technologies across various industries, specifically focusing on the transportation sector. The research investigated the potential for government agencies within this sector to leverage e-payment adoption. Smith and Lee (2023) suggested that e-payments could automate a significant portion of accounting, banking, and reconciliation processes. Furthermore, the study emphasised the transformative potential of 4IR technologies in bolstering internal controls and enabling automated transaction monitoring (Jones et al., 2022). This automation could potentially mitigate vulnerabilities to fraud or misuse within the transportation sector. Preceding research on e-payment system acceptance has focused on user behaviour under normal circumstances (Daştan & Gürler, 2016; Putri, 2018). However, the COVID-19 pandemic has introduced a crisis era with distinct characteristics, including a surge in information technology (IT) usage, sometimes even mandated. This shift raised questions about the applicability of existing findings to such extraordinary circumstances. Consequently, further research was necessary to explore e-payment acceptance and adoption in the public transport industry. This critical knowledge gap serves as the primary motivation for the current study.

According to Neumann and Nagel (2011), research has been done to scientifically incorporate models in transport planning that challenge the minibus taxi industry status quo. Compared to traditional cash and check payments, e-payments demonstrably reduce transaction processing time and associated costs (Chiu, 2017) and (Dwyer, 2023). From a social perspective, a critical need exists for financial institutions to facilitate the utilisation of readily available and cost-effective technologies (Au & Kauffman, 2008). Financial institutions' widespread adoption of tap-and-go technology presents a significant opportunity to drive financial inclusion within the minibus taxi industry. This initiative could be framed as part of their Corporate Social Investment (CSI) efforts, empowering a vital segment of the transportation sector (Mhlanga, 2022).

Commuters and taxi owners could benefit from satellite-based dispatch systems that demonstrably influenced e-hailing productivity. These systems facilitate the effective management of taxi fleets by eliminating the need for drivers to search for passengers aimlessly. The technology streamlined customer demand allocation, allowing Taxi owners to optimise resource utilisation and minimise operational costs. Liao (2001) suggested that this improvement fostered a more positive working environment for Taxi owners and drivers. Order processing, dispatching, and service time benefited from this enhanced efficiency, significantly improving taxi service quality.

Furthermore, collaboration with telecommunication companies can further enhance the viability of e-payment systems. By ensuring consistent network connectivity, even during periods of load-shedding, these partnerships would strengthen the overall e-payment infrastructure (World Bank, 2022). The value of the study is to highlight the benefits which the e-payment methods bring to the fore, which are:

- To provide commuters with speed, simplicity, and convenience when they travel.
- The e-payment systems can be configured to provide data and alerts regarding speeding, accidents, thefts, and violations of routes Cokayne (2010).

- Commuters' safety would be monitored and guaranteed as commuters may be able to review drivers in real-time.
- Multipurpose use: Retail retailer outlets use This tap-and-go payment method to pay for purchases conveniently (Mhlanga, 2022).
- Data collected may benefit the government during road accidents to inform in terms of payout claims on road accident funds.
- To establish a compliance culture with road safety, traffic laws, and speed limits.
- Increase commuter experience: Commuters should start enjoying affordability and convenience, bringing eco-friendly commuting!
- These controls would encourage good behaviour from drivers and commuters, and rewards for safe driving behaviour are instituted within the taxi industry Cokayne (2010).

1.6 Delimitations of the study

There were several delimitations, which are deliberate decisions the researchers took to condense the study's scope and emphasis. It is important to be aware of these limitations when interpreting its findings as that would help that the findings are not over-generalised or misinterpreted. Examples of potential delimitations include:

- This research solely examines the context of the minibus taxi industry**.** This indicates the study's conclusions might not apply to other minibus cab businesses in South Africa or other nations.
- The research approach is quantitative. This indicates that the study's data collection and analysis methods include surveys and statistical analyses**.** However, this method might not fully account for all the variables affecting the Minibus cab industry's adoption of e-payment technology.
- The study's main goal is to understand the elements that will facilitate the adoption of e-payment technology. This implies that the research does not cover other crucial topics, such as the difficulties of deploying e-payment technologies in the Minibus cab business.

- The investigation is restricted to a particular time frame: The minibus taxi sector is continually changing; thus, the study's results might not apply to other eras.
- The factors the researchers found are the only ones included in this study: The researchers may have missed some more elements that affect the Minibus taxi industry's adoption of e-payment technology.
- No stakeholder interviews or surveys were undertaken due to time and financial restrictions. However, the remedy suggested by this idea is based on earlier research.
- Another phase arising from this suggestion must be business transformation or change management.

1.7 Definition of terms

Cash Handling involves receiving and giving money in many business roles, including bank tellers and retail associates (Cash Management—Cash Handling, n.d.).

Commuter Adoption refers to commuters integrating and embracing a new system, often addressing a specific societal need**.** (Liébana-Cabanillas et al, 2014)

e-Payment: The process by which a payer transmits a monetary value electronically to a payee, utilising an e-payment channel that facilitates remote transactions for commuters (Teoh et al., 2013).

Minibus Taxis (MBT) is described as a compact bus utilised for both short and long-distance travel, accommodating a predetermined number of passengers and typically operating at a fixed fare (Baloyi, 2012).

Minibus Taxi Driver: someone who normally works for an individual who owns a minibus taxi, which is operated to carry commuters (Mmadi, 2013).

Minibus Taxi Owners: The state grants the owner of a minibus vehicle access and authorisation in the form of a license to a route that has permission to conduct economic activities (Seftel, 2021).

Mobile Payments: refers to a payment method wherein consumers use their mobile phones to pay for various services and transactions. Typically, the charges are added to the phone bill (Liébana-Cabanillas et al., 2014a).

Public Transport: a mode of transport that provides mobility of people, goods, and access to areas of interest to people, including areas of employment, retail, education, health, and recreational facilities, as well as community facilities on a day-to-day basis (Republic of Kenya, 2009).

The informal economy is a diversified set of economic activities, enterprises, jobs, and workers that the state does not regulate or protect. The concept originally applied to self-employment in small, unregistered enterprises.

1.8 Assumptions

- The assumption that e-payments can benefit the minibus taxi industry, such as improving the commuter experience and curbing the reckless behaviour of taxi drivers, could shape the research findings. If these assumed benefits are not realised or there are unintended consequences of implementing e-payment systems, it could impact the overall conclusions of the research.
- The assumption that Fourth Industrial Revolution (4IR) technologies, such as e-payments and other technological solutions, are readily available in the transport industry at a low cost or no cost could influence the research outcomes. If these technologies are not as easily accessible or affordable as assumed, the feasibility and viability of implementing such solutions in the industry could be impacted.
- The assumption that the research findings in Minibus, South Africa, can be generalised to the minibus taxi industry at large in South Africa could influence the research outcomes. However, if there are contextual factors specific to Minibus that may not apply to other regions or regional

differences within the minibus taxi industry in South Africa, it could impact the generalizability of the findings.

- Participants are willing to participate in the study: A basic assumption that everyone who participated in the study is out of their free
- Participants are assumed to be honest in their answers to questions. However, it is important to know that participants may sometimes provide inaccurate or misleading information.
- This assumption is made when conducting surveys, with the remembrance that not all participants will be representative of the population.
- Participants are assumed to understand the questions that they are asked.

In mitigating the effects of these assumptions, multi-data sources data (surveys and interviews) will be implored to increase the chances that assumptions about participants are accurate.

1.9 Report Outline

An outline of the report is as follows: This research report has six chapters: Introduction, Literature Review, Research Methodology, Presentation of Results, Discussion of Results, and Conclusion.

Chapter 1: Introduction

This chapter sets the stage by outlining the research background and context. Emphasis is on the specific issue the research aims to address. It clarifies its potential contribution to the field, frames the research questions, boundaries, and potential constraints of the study, and provides precise definitions for the keywords.

Chapter 2: Literature Review

In the second chapter, the study critically analyses existing literature within the scope of the research. This section summarises relevant research, theories, and

concepts related to the research topic. It also engages in argumentative debates surrounding the topic, elucidating how these debates inform the current research and discussing different perspectives and debates surrounding the topic and how they inform your study.

Chapter 3: Research Methodology

This chapter delineates the study's population, sample, and sampling methods. It also provides a detailed account of the data collection process, methods and instruments, and data analysis techniques.

Chapter 4: Presentation of Results

This chapter presents the study's actual findings. It incorporates reports, tables, and narratives that succinctly describe the most pertinent outcomes and key insights from the research.

Chapter 5: Discussion of Results

The fifth chapter explains the findings' meaning in the context of existing research and theoretical frameworks. Discuss whether and how the identified variables (Performance Expectancy, Social Influence, Facilitation Conditions, Hedonic Motivation, Habit, and Behavioural Intention) impact commuters' readiness to use e-payments.

Chapter 6: Conclusion

The concluding chapter draws upon the research findings, presents a framework for interpreting the results, and formulates recommendations. This section also summarises the study's central points and suggests potential avenues for further research in the field.

CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This paper explored the ease of adoption of e-payment innovations among taxi owners, drivers, and commuters within the Minibus Taxi industry, specifically focusing on payment options for taxi rides. The research investigated the digitalisation of taxi fares, which refers to the convergence of new technologies and business models (Slowik & Kamakaté, 2017). These advancements have the potential to yield several benefits, including:

Increased efficiency: Reduced time spent collecting fares through digital transactions.

Enhanced security: Mitigated risk of cash theft through e-payment solutions.

Improved convenience: Streamlined payment process for commuters, potentially encouraging increased ridership.

Further fuelling the shift towards cashless payments was the heightened awareness triggered by the COVID-19 pandemic. Research by Davison (2020) conducted for Yoco, a financial technology company, polled 4,386 small business owners and revealed a significant increase in cashless payment adoption. Before March 2020, only 8% of participants reported not accepting cash. However, by June of that year, this number had surged to 32%, representing a 300% increase in businesses going cashless. This dramatic shift highlights the critical role of the pandemic in accelerating the adoption of cashless payment methods.

This trend suggests that businesses increasingly recognise the importance of catering to their customer's evolving needs and preferences by offering diverse payment options. Safety and convenience emerge as key priorities, prompting businesses to adapt. Complementing this notion, Ahmed et al. (2019) identified essential characteristics for e-payment systems to achieve global acceptance,

providing a valuable foundation for considering potential technologies within the Minibus Taxi industry, e.g.:

- Cost: Reasonable cost of implementing and maintaining an e-payment system.
- Security: Ensure that it is secure and minimal if there is no possibility of fraud
- Confidentiality: Commuters' records of transactions should be as safe and kept secure as can be at the highest confidential level.

Furthermore, it looked at the convenience, speed, and security that commuters gain by paying for services without carrying cash (Pham & Ho, 2015). The benefit of increased security, reduced time spent handling cash, and commuter loyalty that e-payment brings would be enjoyed by all stakeholders (drivers and owners). In contrast, commuters enjoy the convenience and reduced fraud risk (Duane et al., 2011). This helps influence the commuters' journey or any other aspect affecting their travel experience and the understanding of how the life of minibus taxi drivers gets enhanced when they do not have to face the risk of dealing with cash instead of focusing on driving.

The literature review investigated the argument that commuters face a challenge in adopting e-payment technology for taxi rides in the informal sector. It suggested that one potential issue could be the lack of technological solutions tailored specifically for this sector. To further explore this argument, the study examined the changes that could enhance commuters' travel experience, improvements in payment options, safety measures, infrastructure, or any other relevant aspect of the taxi industry, as well as highlighted key differences between the informal and formal sectors. Analysis of how e-payment can be a potential and valuable tool for improving the efficiency and security of township minibus taxis.

Overall, the research sought to shed light on what other researchers said about accepting e-payment in the taxi industry and identify areas where improvements can be made to enhance the travel experience for commuters in Minibus. By addressing the challenges and proposing suitable changes, the study aims to

contribute to the advancement of the taxi industry and improve the overall satisfaction of commuters. With careful planning and implementation, e-payment can help make minibus taxis a more attractive and convenient for commuters, offering benefits that could enhance their lives.

2.2 Background Discussion

The fourth industrial revolution has impacted societal patterns, industries, and rapid changes in wireless communication and contactless payments. These are done either through mobile phones or Apple/Samsung or tapping of a card revolutionised communication (Maritz & Maponya, 2010). However, All these technologies have introduced innovative business models that made inroads to previously inaccessible or protected industries and eased commuters' lives (McGrath, 2020).

According to Derrick (2011), the transport industry has been affected by this; the Minibus Taxi business model has been and is still being challenged regarding how it can introduce e-payment in its industry. The concept of replacing cash in the Minibus Taxi industry has been tried or tested, and several studies relating to replacing cash by introducing technologies have been done (Lubanga et al., 2017). Financial institutions with technology companies embark on partnerships to digitise fare collections. This also introduced GPS, route planning and vehicle tracking technologies as benefits while commuters are charged correct fares for their journeys (Davis, 2016).

Luthuli (2020) investigated the potential for e-payment adoption in South Africa. By analysing nearly 50 articles primarily identified through Google Scholar, the review explored various aspects of e-payment methods. A key finding was the growing smartphone user base in South Africa, which suggests a strong potential for e-payment adoption (Luthuli, 2020). The review further highlights the convenience, security, and user-friendliness of e-payment solutions, making them an attractive option for South Africans seeking efficient and hassle-free payment methods (Luthuli, 2020). This aligns with the findings of Dahlberg et al. (2015), who conducted a study on mobile payments. Their research echoed

convenience and the advantages of mobile payment applications. These applications allow users to conduct transactions without needing physical cash or cards, making them particularly advantageous for online shopping and small purchases where traditional payment methods are less convenient (Dahlberg et al., 2015). Conference papers and research initiatives have focused on public transport reform in South Africa, where the Minibus taxi industry plays a significant role in public transportation. These papers often critique existing policies and approaches to engagement in the industry. They aim to identify challenges, propose solutions, and explore ways to improve and digitise the transportation system (Schalekamp & Behrens, 2010).

The use of digital technologies in public transport can be viewed as a disruption to the current system; for example, Uber and Bolt brought disruption against the privately owned taxi services while improving the overall commuter experience, which eventually also reduced costs and improved efficiency (Christensen et al., 2015). Early literature on the minibus taxi industry by Dugard (1996, 2001) showed how complex and multifaceted the industry is and its importance to the economy of the country and its social advancement. Pirie (1992b) also shared valuable insights into the Taxi industry's historical development and its relationship with other modes of transport.

Recent research by Schalekamp & Behrens (2010) and Venter (2011) has shed light on the complexities surrounding the South African minibus-taxi industry. Their work highlighted the challenges faced by government attempts to formalise the industry. The critique centres on policymakers' perceived lack of understanding regarding the industry's unique culture and operational practices (Schalekamp & Behrens, 2010; Venter, 2011). This knowledge gap has arguably hampered government efforts to regulate and integrate the minibus-taxi industry effectively.

Despite the lack of formalisation, the minibus-taxi industry remained the dominant mode of public transport in South Africa, accounting for the largest share of passenger trips (Walters, 2008; Walters, 2014). Notably, it transported a significantly higher proportion of commuters (70%) compared to rail (10%) and bus services (20%) (Walters, 2008; Walters, 2014).

Financial compensation for the minibus-taxi industry has historically been contentious, leading to an ongoing debate with the Department of Transport (DoT). Further research is needed to understand the complexities of this issue and explore potential solutions that address the needs of both the industry and commuters. However, the taxi industry has encountered challenges over the years, and these need to be addressed for its longevity and sustainability.

Here are some of the challenges facing the South African taxi industry:

i. Violence and Crime

Terblanche (2006a) identified a concerning trend of violence and crime within the South African minibus-taxi industry. The report highlighted a culture of lawlessness among some taxi owners, characterised by rude behaviour and poor commuter relations, which contributed to the industry's perception as a dangerous and unpredictable mode of transport (Terblanche, 2006a). The lack of regulations within the industry further exacerbated these issues, leading to problems such as overcrowding, unsafe driving practices, and fare wars (Terblanche, 2006a). Recognising these challenges, the South African government established the National Taxi Task Team (NTTT) in 1995 to investigate the root causes of violence and explore potential solutions (Sekhonyane & Dugard, 2016). The NTTT's initial report, published in 1996, called for urgent reregulation of the taxi industry, highlighting the need for a more formalised approach to ensure safety and improved service quality (Sekhonyane & Dugard, 2016)

ii. Regulatory Landscape: A Complex Duality

The regulatory environment surrounding the minibus-taxi industry in South Africa presents a complex picture. While the government maintains a robust regulatory framework with oversight mechanisms for legitimate industry governance structures, operating licenses, and route allocation processes (Molefe, 2016), an additional layer of control exists within the industry. Taxi owner associations, often organised geographically, exert significant influence by controlling and

fiercely guarding their designated routes (Molefe, 2016). This created a situation where formal government regulations coexist with informal industry-led control mechanisms.

iii. Road Policing: Balancing Priorities with Limited Resources

Road policing is critical in ensuring safety on South Africa's roads, aiming to save lives and reduce injuries (Amos et al., 2015). However, its effectiveness has been hampered by the challenge of allocating limited police resources amongst various competing priorities, including combating a range of violent crimes, each of which holds significant importance (Amos et al., 2015). Optimising the effectiveness of road policing requires the government and the police service to prioritise this area and allocate sufficient resources to maximise its impact.

iv. The Rise of Competition from other modes of transport

The South African minibus taxi industry faces a growing competitive landscape. Bick (2019) highlights the increasing competition from alternative modes of transport, such as buses and trains. More recently, the e-hailing industry (e.g., Uber, Bolt, In Driver) has emerged as a significant competitor, experiencing rapid growth (Bick, 2019). Yusoff et al. (2015) attributed this growth to the advantages of e-hailing services, including improved accessibility, on-time arrival of rides, and shorter waiting times, particularly during unfavourable weather conditions. These services provide a more flexible and convenient alternative to traditional minibus taxis, allowing commuters to access on-demand transportation regardless of weather. Despite this growing competition, the South African minibus-taxi industry retains several strengths.

v. Wide reach

The taxi industry can provide transportation in the outsits part of the country to people in the most remote areas. Its flexibility, ability to adapt to changing demand and affordability make it a popular option for low-income commuters. Fobosi (2013) suggests that to improve the situation, the Minibus taxi industry should be brought into the formal economy through registration, taxation, and

regulation. This would benefit the government in tax revenue and provide better protection for employees and passengers. According to the alleviation (Consultancy African Intelligence, 2013), its role in employment creation and poverty alleviation, the Minibus taxi industry provides livelihoods for many individuals who work as taxi drivers, conductors, and administrative staff.

Historically, the South African minibus taxi industry has played a vital role in providing transportation to remote areas and ensuring accessibility for those outside major urban centres (Veloso et al., 2011). Past research has highlighted the role of minibus taxis in filling a critical gap within South Africa's public transportation network (Rayle et al., 2014). Its inherent flexibility and adaptability to fluctuating demand patterns and affordability have made it a popular choice for low-income commuters. These minibus taxis provide transportation options where commuters cannot drive themselves or other forms of public transport are unavailable. In this way, minibus taxis function as complementary and substitute services, augmenting the existing public transit infrastructure (Rayle et al., 2014).

Fobosi (2013) emphasises the potential benefits of formalising the minibus taxi industry. This process, involving registration, taxation, and regulation implementation, could offer advantages for the government and industry stakeholders. For the government, formalisation would lead to increased tax revenue streams. Additionally, it could provide improved protection for employees, such as taxi drivers, conductors, and passengers (Fobosi, 2013).

Consultancy African Intelligence (2013) further highlights the industry's past contributions to employment creation and poverty alleviation. The minibus taxi industry has served as a source of livelihood for many individuals, offering employment opportunities as taxi drivers, conductors, and administrative staff (Consultancy African Intelligence, 2013). According to Tsele (2017), the absence of tax regulation in the minibus taxi industry created a lack of transparency, making verifying their income through an audit trail impossible. Even though not regulated, it provided employment opportunities that directly impacted the income and well-being of taxi industry workers and their families. The industry also supported various indirect jobs, such as vehicle maintenance and repair services,

fuel suppliers, and vehicle manufacturers, further contributing to employment generation.

Roebuck and Marcus (2001) research also supported the Minibus Taxi's contribution to the informal economy. Traders and crafters hire taxis to travel as they carry out their business activities, transporting raw materials (wood, fabric, or metal) to the point of production or delivering finished goods to sale points. In summary, (Van Zyl, 2009) does state that the affordability and convenience of mini-bus taxis make the industry economically sustainable and significant in the informal economy of South Africa. The industry supported social inclusion, economic mobility, and entrepreneurship by providing affordable transportation options and reaching underserved areas. This made it difficult for them to pay taxes and register their employees (Walters, 2013).

2.3 What factors could influence commuters' adoption of e-payments as a method for taxi rides?

The COVID-19 pandemic significantly impacted the South African minibus-taxi industry, as public caution and social distancing measures reduced ridership (Chakwizira, 2022). This period also witnessed a rise in the adoption of e-payment methods in the industry, as research by Pigneur (2006) suggests. These methods include card machines, online payments, QR codes, and Electronic Fund Transfers (EFTs).

2.3.1 *Benefits of E-Payment Methods*

Adopting e-payments offers several advantages for both commuters and minibus taxi operators. Studies by Blythe (2004) and Jakubauskas (2006) highlight that e-payments allow commuters to pay exact fares, eliminating the need for change and simplifying transactions. Additionally, as Malinga (2016) argues, e-payment systems give vehicle owners greater transparency regarding the number of trips completed by each minibus and the revenue collected. This streamlines fare

collection and enhances commuters' convenience by eliminating the need to carry cash.

Furthermore, e-payments can improve tax collection as revenue becomes more easily tracked (Malinga, 2016). Masinde (2016) suggests that e-payment systems could facilitate seat pre-booking, like systems implemented in Nairobi.

Beyond Cashless Transactions: Additional Benefits

Beyond offering a cashless solution, e-payments can provide further benefits for commuters. Shezi (2016) and Koigi (2016) propose that e-payment systems could be integrated with existing cards used for retail purchases, allowing commuters to use a single card for various transactions seamlessly. Additionally, these systems could offer features like Wi-Fi access within minibuses and even discounted fare structures (Shezi, 2016; Koigi, 2016). The possibility of offering commuter insurance coverage for accidental death or disability during minibus-taxi journeys presents an additional value proposition (Randall, 2019). Such benefits could significantly enhance the overall travel experience for commuters and provide peace of mind.

2.3.2 *The Evolving Landscape of E-Payments*

As Ahmed et al. (2019) point out, the development of e-payment systems and the integration of advanced technologies have fundamentally transformed payment systems and banking services. These advancements have led to the emergence of more flexible and user-friendly payment methods while improving financial transactions' security and efficiency (Ahmed et al., 2019). Slade et al. (2013) further emphasise the continuous evolution of technology within the payment landscape, suggesting future advancements that will bring even greater convenience and innovation to the financial sector.

i. Ease of use for commuters

A study by Liébana-Cabanillas and Lara-Rubio (2017) found that many South Africans see mobile payment applications as a potential payment system of

choice. The study found that the most crucial factors influencing the adoption of mobile payment applications are convenience, security, and ease of use. Mobile payment applications are still in the initial stages of development in South Africa but are growing in popularity. Several reasons exist, including the increasing use of smartphones, the growing popularity of online shopping, and the convenience and security of mobile payments (Oliveira et al., 2016).

ii. Overall Impact

Adopting e-payment methods in the minibus-taxi industry has demonstrably led to increased flexibility, user-friendliness, and security for commuters and operators. This shift towards e-payments aligns with the broader trend of online transactions observed by Kabir et al. (2015) and the overall impact of e-commerce on business practices, as highlighted by Nzaro and Magidi (2014). The increased security and fraud prevention measures associated with e-payments further contribute to their popularity, as confirmed by Sujith and Julie (2017). As e-payment systems become increasingly ingrained in the South African economy, their widespread adoption within the minibus-taxi industry will likely continue, offering significant advantages for all stakeholders.

iii. Definition of E-Payment

Kaur and Pathak (2015) define e-payment as payments made in an electronic commerce environment through money exchange through electronic means. Also, Teoh et al. (2013) viewed e-payment as any transfer of an electronic payment value from a payer to a payee through an e-payment channel allowing Commuters to work remotely. Multiple scholars have defined e-payment systems broadly. Peter and Babatunde (2012) consider it an online fund transfer. Adeoti and Osotimehin (2012) define it as an electronic means of paying for goods and services online or in physical stores. According to Tan (2004), e-payment is an exchange of monetary value for the receipt of goods or services. Expanding upon e-payments, Teoh et al. (2013) defined it as the electronic transfer of value between a payer, and a payee through a designated e-payment channel. This

channel facilitates remote access and management of bank accounts and transactions via an electronic network.

2.4 What are the Perceived Barriers and Opportunities for e-payments in the taxi industry?

A study by Wasserman (2019) found that several lives were lost on the roads, and the minibus taxi is involved in one way or the other. The available literature on Minibus taxis in South Africa indicates that several factors contribute to taxi crashes, such as driving recklessly, overspeeding, tailgating, or sudden lane changes without signalling, unworthy vehicles, and passing traffic lights Govender and Allopi (2007); Ribbens et al., (2000). This kind of bad behaviour has been associated with driver frustration, putting commuters and other road users at risk and leading to road rage. There are ways in which the digitalisation of payment methods can positively impact the lives of taxi drivers.

2.4.1 *Safety for drivers and commuters*

By digitising payment methods, Semuju et al. (2018) argue that the Kenyan government created an environment where they could track and monitor revenue collection, and it takes away the handling of cash from taxi drivers. Adopting cashless methods furthermore contributed to safety, as highlighted by Byatt et al. (2007); drivers can be relieved of the burden of handling cash, a decreased risk of disputes and conflicts arising from incorrect change, counterfeit currency, or disputes over fares even being robbed for the daily cash they collected. This helped create a safer environment for commuters and transport operators, fostering a sense of trust and confidence in the public transport system.

2.4.2 *Formal Employment Relations for Drivers*

E-payment methods can also help establish formal employment relations between drivers and vehicle owners. This elevated status for drivers means their financial remunerations would be electronically routed through banks. This

electronic income record could render them creditworthy Malinga (2016); Shezi, (2016), making them eligible for loans, medical aid, and insurance (Moore, 2016).

2.4.3 *Government Partnership*

For the government to regulate the industry without stifling its growth, it will require a delicate balance of enforcement and cooperation. According to Schalekamp et al. (2016), the government can extend subsidies to the Taxi industry through franchise establishment or even as a regulation measure and governance introduction. Below are specific suggested actions that the government could use to better the transport industry:

- **Enforce regulations:** The government must close a gap by enforcing existing regulations, such as labour and vehicle safety standards.
- **Provide financial assistance:** Consider other transport modes, such as government subsidies, as stated above in this paper. Taxi owners should receive financial assistance to help them upgrade their vehicles and improve their safety practices.
- **Promote dialogue:** As a government that cares about its people, a dialogue between the taxi industry and other stakeholders, such as the government, the private sector, and the public. This will enable solutions finding mechanisms to the problems currently experienced in the taxi industry. Even though the taxi industry has complexities and challenges, the government may enable efficiency and make it safer with the right approach.

2.4.4 *Partnerships with Technology Companies*

The 'Fair Pay' smart card: According to BusinessTechSA (2015), report Santaco is piloting a new cashless payment system for minibus taxis through the commercial division, TaxiChoice. The aim is to install a new card payment system in all local minibus taxis over the next few years. The 'Fair Pay' smart-card payment system aims to bring what is primarily an informal industry into the tax

net. The ‘Fair Pay’ smart-card payment system aims to bring what is primarily an informal industry into the tax net. The introduction of the Fair Pay system aimed to provide a cashless payment solution for taxi services in the Gauteng city region. The system aimed to streamline fare collection, enhance commuter convenience, and reduce the burden of cash handling for drivers and operators by using card-based payments and QR code tickets.

According to Mabogo's (2023) article on Engineering News, adopting cutting-edge technologies is essential, and taxis should now include AI cameras. This technological development provides numerous advantages to taxi operators, drivers, and commuters. Taxi owners may instantly raise earnings by more than 30% for each load using AI cameras. These highly developed cameras have evolved significantly and can now analyse the flow of commuters, giving owners regular information on taxi performance.

According to Hendricks (2022a), a new partnership has been formed between Loop and the minibus taxi industry in Cape Town that helps commuters avoid having to wait for a minibus taxi that is already full. It quickly connects commuters with authorised taxi drivers through the new digital platform that has been established. commuters can reserve a minibus cab through the Loop startup for one-time travel. The Loop platform aims to address problems in the taxi business, such as digital payments and accountability. They now access previously lacking clientele (Hendricks, 2022b).

2.5 What is the taxi industry benefits or disadvantages of introducing the e-payment method to commuters of the taxi industry?

As stated by Hensher (2017), the transportation landscape has evolved, and new opportunities have emerged for the Minibus Taxi industry to adapt their business models and explore new avenues for taxi ride payment. A study by the Daily Maverick has confirmed that ride-sharing and carpooling services, such as Uber, have become a popular choice for transportation in South Africa. It has attracted

over 36,000 driver partnerships, and over 1.3 million people use Uber annually in South Africa (The Daily Maverick, 2018).

According to Bashir et al. (2016), the hassle-free payment process is one of the main factors contributing to Uber's success in developed countries. Uber has also partnered with several banks in India to offer riders the ability to pay for their rides using their bank accounts. In addition, Uber also offers Uber Eats, which allows commuters to order food while travelling from restaurants and have it delivered to their home or office. These services have indeed helped commuters in terms of convenience and security, and they have impacted the economy by providing an alternative mode of transportation.

Other benefits to commuters, as stated by Cramer & Krueger (2016), are that the commuter uses the Uber app to request a ride and set a meeting point, the commuter can track car location and estimated time of arrival, driver's information, including ratings and feedback from previous commuters. Upon arrival, the driver greets the commuter by name, and the commuter enters the car. During the ride, the commuter can enjoy a hassle-free experience without paying the driver directly. Upon reaching the destination, the Uber app automatically charges the commuter's card for the fare, which includes the fare and the tip, eliminating the need for the commuter to pay separately for the service and the tip (Damodaran, 2014). Here is a breakdown of the steps in

Figure 2.5.1 Uber business model, along with comments on Uber's offerings and their uniqueness at each stage:

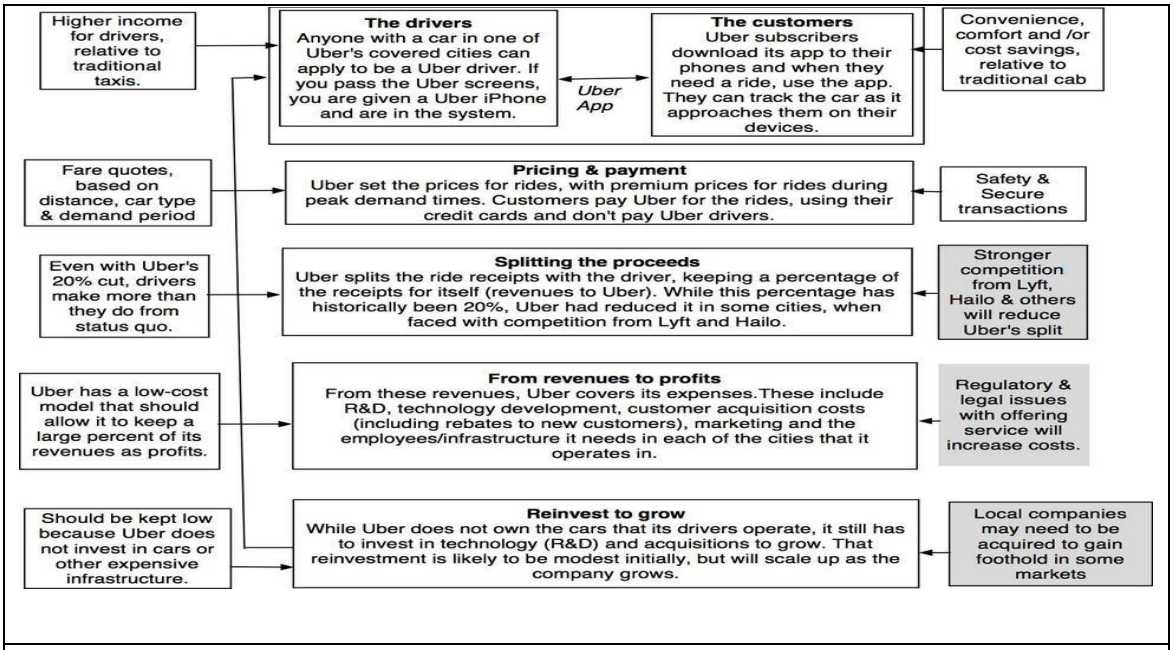


Figure 2.5.1: Source: Reproduced from Damodaran (2014)

2.6 What is the role of trust and the perceived privacy risk factors for commuters, in e-payments adoption?

Blythe (2004) highlighted the significant role of ease of fare collection in commuter satisfaction. Cashless payment methods can increase commuter satisfaction with paratransit services by offering a seamless and hassle-free experience. However, commuters may hesitate to use cashless payment systems due to perceived security risks exceeding those associated with conventional methods. Ozturk (2016) suggested that a commuter's technological knowledge and skills can influence their willingness to adopt cashless payments. Concerns about security breaches such as fraud or identity theft and a perceived lack of control over their finances may deter commuters from embracing cashless transactions.

From a financial management perspective, adopting cashless transactions presents potential benefits for taxi owners and the government. It could reduce the opportunities for taxi drivers to steal from owners and for owners to evade taxes. While quantifying the impact of tax evasion and the shadow economy can

be challenging (Din & Rafee, 2019), a cashless system could mitigate these issues. However, it is important to acknowledge the potential rise of cybercrime, electronic fraud, and digital hacking associated with cashless societies. Conversely, reducing cash circulation could also lead to decreased crimes like burglary.

Finally, cashless transactions can promote financial inclusion, particularly for the unbanked population (Din & Rafee, 2019). Additionally, by streamlining the fare payment process, digitalisation can improve safety in the minibus taxi industry by reducing driver frustration, enhancing compliance with traffic laws, and fostering greater safety awareness among drivers.

2.7 Theoretical Framework

For our study, several alternative models can be used, but we believe that the Unified Theory of Acceptance and Use of Technology (UTAUT2) Venkatesh et al. (2003a, 2003b); Venkatesh and Zhang (2010) were the most appropriate model. According to Lu (2014), the adoption model suggests a connection between changes in consumer views. Using the UTAUT2, we hope to explain user readiness or intentions to use an e-payment and subsequent usage behaviours.

Venkatesh et al. (2012) established a ground-breaking paradigm for the enhanced version of UTAUT2 that integrated three criteria to consider: Hedonic Motivation, Price/value, and Habit, with UTAUT's underlying theoretical background. This makes it relevant to use UTAUT2 as a theoretical lens for comprehending problems linked to technology adoption in various contexts. This enables the model to have a built-in prediction feature that significantly raises its potential for projecting user acceptance up to 74% (Venkatesh et al., 2016). Within the technology sector, the practical aspect has already gained widespread acceptance as a generic theoretical framework. A well-established theoretical framework proving valuable for analysing new technology adoption processes within creative methods and as part of various cultural and social settings is demonstrated by the vast number of studies conducted (Umak & Orgo, 2016).

This model provides us with an improved framework for adoption. For example, e-commerce Biduski et al. (2020), banking and finances (Khan & Rabbani, 2021), and virtual classroom and learning Dizon (2021) are some domains where user, behavioural, and standard approaches are frequently employed in practice. Researchers have used UTAUT2 to look at several user groups, including "Citizens" who have adopted m-health Dwivedi et al. (2016) and "Nurses" who are willing to utilise home telehealth (Van Houwelingen et al., 2014, 47-56.). Mobile becoming the most widely used consumer technology worldwide, accounting for two-thirds of the world's population and reaching 5 billion unique mobile subscribers in 2017 (Baabdullah et al., 2019; Slade et al., 2013, 2014; Tamilmani et al.); this explosion of mobile subscribers is accelerating the growth in the use of information and communication technology (ICT) worldwide.

Notably, the UTAUT2 model, as outlined by Venkatesh et al. (2003a, 2003b) and Venkatesh and Zhang (2010), incorporates unique constructs such as Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions as direct determinants of usage intention and behaviour. In response to the rise of consumer technologies, the UTAUT2 model has been adapted to the context of consumers, with a particular focus on three new constructs: Hedonic motivation, Price value, and Habit, which are frequently associated with voluntary users' behaviour (Venkatesh et al., 2012).

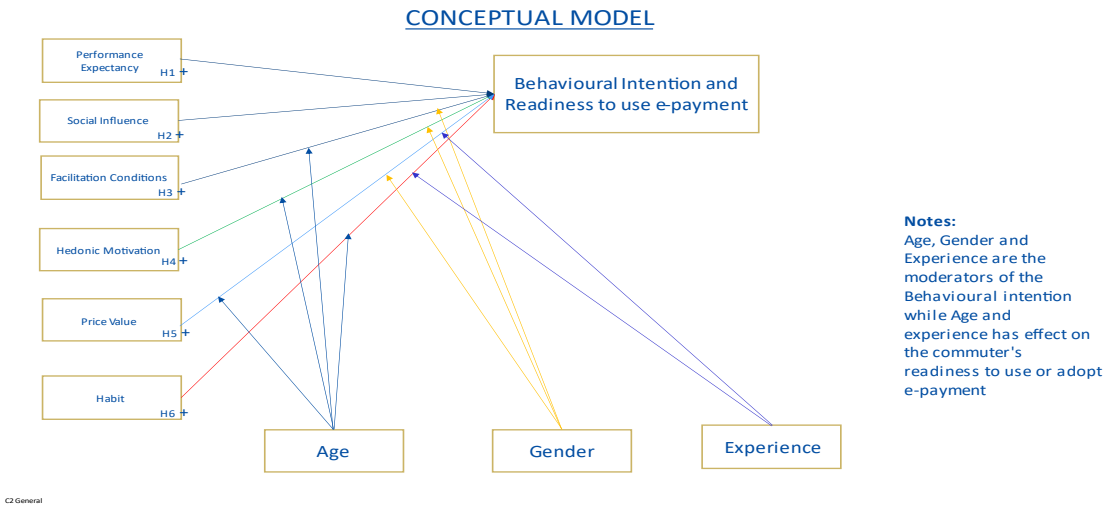
The uptake of e-payments for taxi rides by commuters in the Minibus township may thus be studied better using the UTAUT2 model. In line with the UTAUT2 model, the following hypothesis will be studied. To explore these hypotheses, Minibus Taxi commuters will be surveyed on adopting e-payment to pay for their taxi rides. The UTAUT2 model was used to guide this study's hypotheses, which identified performance expectation, enabling conditions, social influence, and hedonic motivation as the most important variables that may impact the adoption of e-payment. Price, value, and habit are the moderating factors in the readiness of commuters to use e-payments using Minibus taxis in this study.

2.7.1 *Research Model*

The UTAUT2 model offers a more in-depth perspective on how commuter behaviour influences the uptake of e-payments. The adoption of e-payments is primarily driven by users' behaviours, which are part of the information technology considerations. Such elements could either positively or negatively affect the acceptance of e-payments. This study presents a conceptual model with hypotheses aligned with constructs in the conceptual model. The model constructs are to make us understand their effects on commuters' behaviours and readiness to use or adopt e-payment for taxi rides. The age, gender, and experience of the commuters moderate all these. In contrast, the readiness of commuters to adopt e-payment is affected by age and experience based on the current theoretical assessment of the UTAUT2 model (Venkatesh et al., 2012a, 2012b).

The behavioural influence of these constructs contributes differently to the adoption of e-payments. In this study, we will concentrate on the six constructs of the model: Performance Expectancy (PE), Social Influence (SI), Facilitation Conditions (FC), Hedonic Motivation (HM), Price Value (PV), and Habit (H). Below is the UTAUT2 conceptual model reflecting how these constructs influence commuter behaviours.

Figure 2.7.1. UTAUT2 Conceptual Model



2.7.2 *Performance expectancy*

This variable positively impacts behavioural intention to adopt e-payment, and according to Venkatesh et al. (2003), writers worldwide have given performance expectations much attention. Additionally, commuters may accept e-payment technology if it benefits them and increases the efficiency of their life. According to a study by Alalwan et al. (2017), consumers are more willing to embrace new technology if they believe it will improve and benefit them. Additionally, perceived usability is a key determinant of a commuter's intention to keep using technology.

- H1. Performance expectancy has a positive influence on commuters' readiness to use e-payments.

2.7.3 *Social Influence:*

This variable positively impacts behavioural intention to adopt e-payment; according to Rahadi et al. (2022), "social influence" refers to how significant others' perceptions of a circumstance influence a person's behaviour. The influence of behaviour could include those people one regards highly, like family, friends, co-workers, and other groups that one could be affiliated or associated with, like a church or a social club. The introduction of e-payment among commuters can be resolved by asking for technology advice and not understanding if it brings any consequences. The uncertainty among commuters can be resolved by asking for advice from people they trust and respect.

So, the impact of e-payment can be measured by how commuter's social communities understand them (Aydin, 2016). Societal influence is recognised as one of the important variables influencing how any new technology is received (Tenk, 2020). Communities were forced to run without cash because of Covid-19 and most individuals began purchasing online. Additionally, a prior study by Tusyana (2021) supports the idea that social effect influences how users respond when embracing new technology like e-payments.

H2. Social Influence has a positive influence on commuters' readiness to use e-payments.

2.7.4 *Facilitating conditions*

This variable positively impacts the behavioural intention of e-payment. The availability of technical resources that can aid in using information systems is the individual's perception of the facilitating conditions (Venkatesh et al., 2003a, 2003b). Some of these resources include the availability of information systems, consumer understanding of information systems, skills, and internal and external assistance for using information systems.

The availability of enabling conditions in the context of e-payments influences people to accept and employ e-payments if they believe that these resources are readily available. This concept strongly predicts technology adoption according to studies on enabling circumstances and adopting new technologies. This discovery significantly affects how technology is designed, promoted, and adopted. For instance, marketers should stress the availability of resources to use technology in their marketing efforts, while technology designers can concentrate on making technology more usable and accessible.

Koksal (2016) looked at how enabling factors affected the uptake of mobile banking in Turkey. According to the study, enabling circumstances significantly boosted the use of mobile banking. Yang et al. (2019) researched how China's adoption of e-government services was impacted by enabling conditions. According to the study, enabling circumstances significantly boosted the uptake of e-government services. Mensah (2019) studied how enabling factors affected the uptake of e-learning in Ghana. The study discovered that the adoption of e-learning was significantly positively impacted by enabling conditions.

- H3. Facilitating conditions positively influence commuters' readiness to adopt and use e-payments.

2.7.5 *Hedonic motivation*

This variable positively impacts behavioural intention to adopt e-payment; it describes individuals' pleasure or delight in utilising technology (Kim & Hall, 2019). Asking individuals how much they love using a certain technology or how

much pleasure they have using it is a common way to gauge it. It has been demonstrated that hedonic motivation, particularly in the context of consumer technology, is a key predictor of technology adoption (Poong et al. (2017; Tamilmani et al., 2019).

To explain why individuals embrace and utilise technology, a paradigm called the Unified Theory of Acceptance and Utilisation of Technology (UTAUT) was established. The hedonic motivation was presented as an addition to the UTAUT model (Venkatesh et al. 2012a, 2012b). Hedonic motivation may be a key predictor of technology adoption, according to results from Venkatesh et al. (2012). This indicates that individuals are more inclined to acquire and use technology if they are driven by the fun or satisfaction of doing so. For instance, marketers might stress the enjoyment and pleasure of using technology in their marketing efforts, while technology designers can concentrate on making technology more entertaining. According to the study, hedonic motivation appeared to predict the adoption of technology strongly. This discovery significantly affects how technology is designed, promoted, and adopted.

- H4. Hedonic motivation positively influences commuters' readiness to adopt and use e-payments.

2.7.6 *Behavioural Intention*

According to Chen and Chen (2021), a person's attitude, subjective norm, and perceived behavioural intention are affected by age. Venkatesh et al. (2012) pointed out that older users are more aware of its influence on perceived behaviour control than younger users are of its effect on attitude. This variable could be tested via surveys, user studies, or experiments that measure users' attitudes, perceptions, and actual use patterns toward e-payment. The study's results would clarify the factors affecting users' intentions and guide the development of e-payment systems and marketing strategies.

- H5. Behavioural Intention positively influences commuters' Perceived Use of e-payment and their prior experience with similar technology.

2.8 Conclusion of Literature Review

Electronic payments may significantly impact the readiness of commuters to use e-payment. However, several issues must be resolved before e-payments are extensively used in this market. These difficulties include:

Lack of trust: Some consumers may not trust e-payments because they are unfamiliar with or concerned about protecting their personal information.

Cost: For some consumers, the expense of using e-payments may be a barrier. For instance, those without credit cards can be required to pay a charge to utilise a mobile payment app. Despite these difficulties, there may be some advantages to implementing electronic payments in the minibus cab sector. These advantages consist of:

Efficiency gain: Electronic payments might increase the efficiency of the minibus cab industry by speeding up the payment process.

Enhanced security: Electronic payments might enhance the security of the minibus taxi sector by lowering the possibility of cash theft. They might also aid the minibus taxi sector in better data collection about its commuters, which could be utilized to enhance services. Overall gain can be extended to the transport sector, which may benefit from electronic payments. However, several issues must be resolved before e-payments are extensively used in this market.

CHAPTER 3. RESEARCH METHODOLOGY

Following the review of relevant literature in Chapter 2, Chapter 3 delves into the research design employed in this study. This chapter outlines the research methodologies and techniques used to address the research objectives and questions established previously in Chapter 1. Section 3.1 specifically focused on the research paradigm, which serves as the foundational framework for the study. This section will discuss the perspectives guiding the research approach.

The study further examined the Minibus taxi industry's preparation for e-payment introduction from the perspective of commuters, utilising a quantitative research methodology. According to Elliott (2005), Quantitative research employs numbers or statistics to answer questions backed by narratives to comprehend the phenomenon under study.

This type of research is often used in a structured research process, and it will be used to collect data on various topics, including demographics, attitudes, and behaviours. Overall, the study will use random sampling to collect data. Employing the Venkatesh et al. (2003) model, the variables that impact and affect the adoption of e-payment in the taxi industry will be examined. Furthermore, the variables influencing Taxi commuters' use of e-payment systems will be examined.

3.1 Research Paradigm

Research paradigms served as frameworks that helped the researcher determine the appropriate methods, approaches, and interpretations for the study, as stated by (Wynn & Williams, 2012). In this case, the positivist paradigm guided the research in collecting and analysing quantitative data to investigate the relationship between variables, interpreting the findings and evaluating the methodology used. Furthermore, the study's design allowed the quantitative investigation of commuters' usage of electronic payments to pay for taxi rides by applying certain deductive methodologies. Since it examined the variables that impacted commuters' acceptance of the technology, one may argue that this study methodology is acceptable. The positivist paradigm was also applicable

since it ensured that the established model could be evaluated and the observed links between the adoption factors and the expected associations could be compared. This study adopted a deductive research approach, aligning with the work of Mills et al. (2010). This approach emphasised developing and testing research phenomena based on established theories and pre-determined hypotheses. By employing a positivist research paradigm, the researcher was able to test these hypotheses (Bhattacherjee, 2012) systematically and rigorously. This rigorous approach generated more reliable and generalisable research findings (Bhattacherjee, 2012).

3.1.1 *Research Approach*

The research approach for this study is quantitative. This approach is based on quantitative research techniques used to examine the uptake and acceptability of e-payments, especially when comprehending natural occurrences. This approach helped answer the research question, “The concept of introducing e-payment, that is, card, mobile, tap-and-go payments in the Minibus taxi industry.”

This study employed quantitative data analysis techniques to explore e-payment adoption and user acceptance within the minibus taxi industry. The quantitative data, consisting of numerical or statistical information, was analysed alongside qualitative narratives to provide a more nuanced understanding of the phenomenon.

3.1.2 *UTAUT2 Model and Technology Acceptance*

The Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) model served as the theoretical framework for this research (Venkatesh et al., 2003). UTAUT2 integrated established technology acceptance theories to offer a comprehensive approach to analysing factors influencing user technology adoption. This model incorporated constructs such as performance expectancy, effort expectancy, social influence, and facilitating conditions (Chong & Chan, 2012; Cheng & Huang, 2014; Hoque & Sorwar, 2017; Liébana-Cabanillas et al., 2014; Zarei & Hassanzadeh, 2015). These constructs address factors such as

perceived ease of use, potential performance improvements, social pressures to adopt, and the availability of supporting infrastructure – all of which can influence commuter decisions regarding e-payment adoption.

3.1.3 *The Influence of Demographics and Experience*

The study acknowledges the potential impact of demographic characteristics and user experience on e-payment adoption, as Venkatesh et al. (2003) highlighted. Age, gender, and prior experience with technology could influence how individuals perceive and utilise e-payment technology. These factors could moderate the relationship between behavioural intention and actual technology usage, suggesting a need for further research into this area.

3.2 Research Design

As stated by Creswell & Clark (2017, p. 58), a research design constitutes a strategic framework for organising and implementing research processes to answer research questions and guarantee the validity of the results. Since this is a quantitative study, a survey design approach was used to collect data from several participants. The study investigated the factors that impacted the adoption of electronic payments among commuters. The study analysed commuters' attitudes, behaviours, and experiences when using electronic payments to pay for taxi rides instead of cash payments. The research exclusively looked at people living in Gauteng.

The survey questionnaire included Likert psychometric scale questions as recommended by Joshi et al. (2015). These included questions related to demographic information, usage of e-payments for taxi trips, awareness and knowledge of e-payment options, perceived benefits and drawbacks of using e-payments, and factors influencing the adoption of e-payments. The data collected from the survey were analysed using statistical techniques such as regression analysis to determine the relationship between variables that were not waiting for data from the lab (Merriam & Tisdell, 2015).

Although the cross-sectional field survey provided valuable insights into commuters' usage of e-payments in Gauteng, this research technique had limitations. For instance, the findings may not be generalisable to other populations or regions due to the specific sampling method. Additionally, self-reported data from surveys may be subject to bias or inaccuracies. Despite these limitations, the cross-sectional field survey was an effective research technique for examining commuters' usage of e-payments in Gauteng. It allowed data gathering on a large scale and analysis of relationships between variables to understand factors influencing adoption behaviour. Acknowledging these limitations and interpreting the findings cautiously, meaningful conclusions can still be drawn from this study.

3.3 Data collection methods

Data collection strategy is the systematic procedure of acquiring information for the target variables Botma et al. (2010). As part of the data collection method in this quantitative research, we employ surveys as they are popular tools for data collection methods. Online surveys using Qualtrics were distributed to age groups between 18 and 60 years to collect the numerical data. The survey will contain two areas; the first area addresses the profile of the participants (age, gender, education, and residential area). The second area includes 25 questions about the commuters' readiness to adopt and use e-payment as the payment method for their rides.

The aim was to gather precise, impartial, and trustworthy data from commuters using quantitative data-collecting techniques (Kabir, 2016, pp. 168–180). This method used to acquire quantitative data is impartial and ensures that there are no researcher prejudices or personal ideas that have no impact on the results. Methods to acquire quantitative data might seem rigid, but this is because a preset set of questions or scales for commuters are used to obtain the adoption of e-payment data (Kabir, 2016, pp. 168–180).

3.4 Population and sample

3.4.1 *Population*

This quantitative study focuses on individuals with first-hand knowledge and experience in the minibus taxi industry. The study's target audience was commuters who used taxis as a mode of transportation.

The sample size was taken from taxis operating in the Gauteng region. According to the following standards, the location was chosen:

- The commuters ought to be spread out around the Gauteng areas.
- The commuters should be people who currently use minibus taxis as a mode of transport or who last used them in the last three months.
- The many kinds of minibus taxis that run across the Gauteng area should be represented in the study.

An online survey was distributed to a population spanning various age groups, ranging from 18 to 60 years old. This approach aimed to collect various numerical data regarding commuter preferences. The survey focused on commuters' willingness to adopt e-payment solutions within the taxi industry. By analysing the collected data, the researcher developed descriptive profiles of the participants. These profiles provided valuable insights into commuters' characteristics, behaviours, and attitudes towards adopting e-payments within the taxi industry.

3.4.2 *Sample and Sampling Method*

According to Bhardwaj (2019), the sample and sampling strategy are key factors since they directly affect the generalizability and validity of the study results. To further deepen this study and enhance its validity, the results of adopting e-payment in the Minibus Taxi industry. The target population group for gathering and analysing data was selected based on the availability and accessibility of Minibus to residents of the targeted areas in Gauteng.

According to these researchers, Indrayadi and Helty (2021), probability and non-probability sampling are the two basic forms of sampling employed in quantitative research. In this study, the non-probability sampling technique was used to determine participants from a population. Sampling data was collected variedly to avoid biases and increase representativeness and participation in the study. Surveys were distributed at various times and dates to recruit more participants for the study.

Bartlett et al. (2001) emphasise the importance of carefully considering sample size and potential non-response bias when designing quantitative surveys. This study determined the minimum number of required responses by multiplying the number of utilised measurement scales by five. This approach reflected the common rule of thumb suggesting a minimum of five to ten respondents per item for factor analysis (Hair et al., 2019, p. 647)

Considering these factors, a sample size of 267 participants was targeted. This sample size was designed to achieve a 94% confidence level and a 6% margin of error, assuming a population proportion of 50%. It is important to acknowledge that regression analysis typically requires a minimum of 100 collected surveys (Hair et al., 2019, pp. 170-171).

3.4.3 *Random Sampling Method*

The sample for this research used non-probability sampling, a random sampling method. The survey was completed by those who were available. Since the study population is heterogeneous, the people in the population had different characteristics, qualities, or attributes. The sample for this research was from a population that used or has used a Minibus as their mode of transport.

Table 3-1 Population Stats table

Population Stats table (Sample Size Calculator by Raosoft, Inc., 2023)				
People who use Minibus Taxis in Gauteng	% Margin of Error	Confidence Level	Sample Size	
3 702 671	6%	94	267	

3.4.4 *Sampling Approach and Rationale*

The selection of an appropriate sampling method is critical to minimise bias and enhance the generalizability of research findings to the target population (Babbie, 2010). In this study, a random sampling approach was chosen. This method reduced bias by ensuring that a diverse range of minibus-taxi commuters had participated. The resulting data will be more generalisable to the broader population of minibus-taxi users.

3.4.5 *Justification for Online Survey Distribution*

The research employed online surveys to collect data from the targeted sample. This method has several advantages. Online surveys are known for their easy distribution and data collection (Couper, 2017). They offer flexibility for participants, allowing them to complete the survey at their convenience. Furthermore, online surveys facilitate rapid data collection and analysis (Couper, 2017).

3.5 The research instrument.

Taber's (2018) research recommended using Cronbach's alpha instrument, which is mainly used for its reliability while developing surveys and helps construct validity. In this quantitative research study, the survey will be used to gather data on the use of e-payment. Specifically, the following proof was required:

- e-payment adoption rates among various demographic groupings.
- the elements that affect whether people use e-payments include perceived ease, security, and trust.

- Adoption of e-payments is hampered by factors including lack of knowledge, technical proficiency, and accessibility to e-payment systems.

The survey was made to be thorough and gather information pertinent to the study's topics; it is attached as an Annexure. The questions were carefully crafted to ensure they were unambiguous. The survey was also put through a pilot test to ensure it would be simple to comprehend and complete. The adoption of e-payments was examined, and the variables influencing and impeding adoption were determined using the information gathered from the survey.

This study surveyed research participants in the Gauteng area online using an internet questionnaire. The components that had been selected as indicators were given values by the data gathered from these online questionnaires that were performed. The questionnaire was predetermined to prevent "cherry picking" of questions and bias in the process, and each participant asked the same questions. Since an online questionnaire survey might yield fresh perspectives on the study, it was chosen as the primary means of gathering data Westat (2002).

3.5.1 *Commuters Adoption and e-Payment Acceptance Constructs*

The concept of commuter adoption constructs refers to the factors influencing commuters' decisions to utilise e-payment methods for taxi fares. These constructs represent the commuter's perspective and willingness to embrace the technology. Understanding both commuter adoption constructs and e-payment acceptance constructs (those influencing the industry's willingness to accept these methods) is critical for promoting successful e-payment adoption within the minibus taxi industry.

By addressing commuters' concerns and actively creating a system that benefits both commuters and taxi operators, the industry can smooth the transition to a cashless fare system. Below are the constructs and their sources in Table3.2

Table 3.2: Commuters Adoption and e-Payment Acceptance Constructs

Commuter Adoption and e-Payment Acceptance Constructs	
Behavioural Intentions	(Chen & Chen, 2021) (Venkatesh et. al 2012)
Performance_Expectancy	(Venkatesh et. al 2003), (Alalwan et al.)
Facilitation_Conditions	(Venkatesh et al . 2003a, 2003b). Koksal, 2016) (Mensah, 2019)
Social Influence	(Rahadi et al., 2022, 2021) (Aydin, 2016). (Tusyana, 2021)
Hedonic Motivation	(Kim & Hall, 2019) (Poong, Yamaguchi, & Takada, 2017); (Tamilmani, Rana, Prakasam, & Dwivedi, 2019)
Habit	(Venkatech et al., 2012). (Akhlaq & Ahmed, 2013) (Malinga, 2017)
Price_Value	(Lockett et al., 2020) (Shaikh et al., 2020)

Table 3.2: Source: "researcher own compilation 2024"

According to Joshi et al.'s (2015) research, the Likert psychometric scale was best used to measure survey responses, and this study employed it, too. A five-point scale was ranked from least to most; there may or may not be an equal distance between them. The most typical Likert scale has five categories: Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, and Strongly Disagree.

The study used the questionnaire survey method to collect data, and expert opinions were sought regarding amending the questionnaire. The study questionnaire structure was divided into three parts. At the beginning of the questionnaire, the participants were asked if they had ever used minibus taxis. If so, they continued to fill out the questionnaire. If not, they stopped answering. Finally, the first and third parts of the questionnaire were measured on the nominal scale, while the second part adopted a 5-point Likert scale to measure the degree of consent of the respondent.

The questions were compiled into a scale containing 27 measurement questions, where 1 is “Strongly Disagree”, and 5 is “Strongly Agree”. The results of this study

questionnaire were statistically processed and analysed to perform basic data analysis using SPSS 29 IBM Statistics software.

3.6 Procedure for data collection

This study used an email method as a main or common method for distributing surveys, as most target populations have email addresses. Qualtrics software ensured that the email sent out to participants was not identified as spam or junk mail. In this study, the listed general procedures were followed:

- Intended audience was identified: Finding the target audience,
- The survey was established: Easy to read, brief, and clear survey,
- The survey was distributed: The intended audience received the survey,
- The survey responses were gathered Online by email, Qualtrics.
- The survey replies were analysed: Examining the responses.

As stated, Qualtrics was used to send out the surveys to the participants; this software also helped gather data from those who participated. According to Heycke and Spitzer (2019), using Qualtrics makes creating and distributing surveys and tracking responses easier. Below are the additional helpful hints that were followed in this study:

- Ensured that the survey is clear and well-designed,
- Kept the survey brief and direct,
- Made the wording precise and succinct,
- Avoided using technical language,
- Made sure the survey invitation is unique,
- Personalized the Invitation,
- Provided rewards for involvement,
- Tested and Piloted the Survey,
- Used social media to advertise the survey,
- Used word of mouth to promote the survey,
- Contacted those who did not respond to the survey.

The above helpful hints were implemented, creating an opportunity and possibility that improved the chances of collecting valuable data from all participants and increased the overall response rate.

3.7 Data analysis strategies and interpretation

Bhardwaj (2019) underscores the importance of rigorous data analysis and interpretation procedures to ensure the accuracy and relevance of research findings. This study adopted the methodologies and interpretation processes outlined previously. The resulting findings strive to be precise, clear, concise, and readily comprehensible, providing a clear understanding of the conclusions drawn from the data analysis.

3.7.1 *Quantitative Data Analysis Methods*

Following data collection, the research employed established quantitative data analysis methodologies and interpretation techniques, as outlined by Shorten and Moorley (2014). These methods involved organising, summarising, and interpreting the numerical data collected from participants.

3.7.2 *Statistical Software and Descriptive Statistics*

SPSS 29, an IBM statistical software package, was utilised for data analysis (reference for SPSS version). Descriptive statistics were employed to provide a comprehensive overview of the data set. Measures of central tendency, including mean, median, and mode, were used to describe the average value of each variable (reference for central tendency measures). Additionally, variance and standard deviation were calculated to assess the spread of data points (reference for variance and standard deviation).

3.7.3 *Correlation and Regression Analysis*

Correlation analysis explored the strength and direction of relationships between different variables within the data set. Regression analysis was used to

determine the potential impact of one or more independent variables on a dependent variable (reference for correlation and regression analysis). These analyses provided valuable insights into the relationships between variables within the study.

3.7.4 *Pattern Recognition and Outlier Analysis*

Beyond statistical analyses, the researcher carefully examined the data to identify emerging patterns or trends within participant responses. This process involved looking for similarities and differences in the feedback provided and identifying any outliers or unexpected findings that may require further investigation.

3.7.5 *Statistical Modelling for Data Analysis*

The study employed a specific statistical modelling approach to analyse and explore participant data. Principal Component Analysis (PCA) was chosen for its comprehensive capabilities (Kline, 2016). This method allowed the researcher to assess both structural models (relationships between latent factors and outcome variables) and measurement models (relationships between observable variables and latent factors) (Kline, 2016). PCA's versatility enabled the researcher to test complex theoretical models and concepts, providing valuable insights into the data (Kline, 2016).

3.8 Quality Assurance

As stated by Mohamad et al. (2023), the relevance of validity and reliability in research instruments shows the degree to which an instrument measures what it intends to measure, called validity. The constancy of an instrument’s results is referred to as reliability. The terms validity and reliability are crucial in quantitative research. A measure's reliability is its constancy.

3.8.1 *External validity*

Mohamad et al. (2023) suggest that the research findings can inform the exploration of e-payment adoption within the minibus taxi industry across various South African provinces. The potential generalizability of the findings extended beyond the specific context of this study. The applicability of e-payment systems in other contexts or user groups, such as industries outside of minibus taxis, warrants further investigation. To this end, replications of this study design could be conducted in different townships, such as Makhado or Langa, to assess the transferability of the findings to these new settings.

3.8.2 *Internal validity*

The use of e-payment is the independent variable in the context of your study. The adoption of e-payment is the dependent variable. The degree to which a study's findings may be ascribed to the independent variable is known as internal validity (Dube, 2019).

3.8.3 *Randomization and Group Equivalence*

The study employed random participant selection to ensure that each participant had an equal probability of being assigned to either the experimental or control group (Trochim, 2006). This randomization process helps to control for potential extraneous variables and strengthens the internal validity of the research. By creating comparable groups, the study aims to isolate the impact of the independent variable on the observed outcomes (Agarwal, 2011).

3.8.4 *Measurement Instrument Selection*

A reliable and valid measurement tool was chosen to assess the independent variable. The instrument's accuracy in measuring the intended construct is critical. Additionally, the instrument should exhibit test-retest reliability, ensuring consistent results upon repeated measurements (DeVellis, 2017).

3.8.5 *Construct Validity*

To strengthen the research's credibility and robustness of its findings and provide valuable insights into commuters' adoption of digital payment solutions, DeVellis (2016) emphasised the importance of construct validity. This type of validity ensures that a research study accurately measures the theoretical constructs it investigates. By employing construct validity principles, unbiased conclusions and intended constructs are reflected rather than something else entirely (Boateng et al., 2018).

Fife-Schaw (2006) further elaborated that construct validity assessed how well a measurement tool captures the desired construct, ensuring that data-driven conclusions accurately reflected its theoretical meaning. Construct validity evaluates whether a measuring instrument, like a survey or questionnaire, successfully measured the theoretical concept it was designed to assess. A critical aspect of study design involved ensuring that the chosen measures align with the underlying theoretical framework and appropriately represent the intended construct (DeVellis, 2016).

As Boateng et al. (2018) stated, construct validity evaluates if a measurement tool is measuring what it is supposed to measure. The researcher frequently utilised various techniques to create and assess construct validity, such as expert reviews, statistical analysis, pilot testing and established theoretical frameworks.

According to ARTEAGA (2023), establishing construct validity gave the researcher confidence that their measurement tool effectively captured the concept they were interested in studying, ultimately strengthening the quality and credibility of research findings.

To establish construct validity in this research, the approach followed is as follows:

1. Convergent validity –questionnaires are used to collect data; the following constructs will be measured as they are part of the research instrument: Behavioural Intention and performance Expectancy (ARTEAGA, 2023)

2. Content Validity – review the clarity of the questionnaire, relevance, and representative of the measured constructs (ARTEAGA, 2023)

3.8.6 *Discriminant validity*

Hair et al. (2014) addressed the discriminant validity concept, which assesses a measure's distinctiveness from other constructs. In the context of commuter e-payment adoption, discriminant validity evaluates how well a measurement tool differentiates between this concept and other theoretically distinct concepts. This type of validity ensures that the measures used in the study capture the intended construct (e-payment adoption) and avoid capturing overlapping or redundant constructs (Hair et al., 2014).

The authors further explained that discriminant validity can be assessed by examining correlations between constructs (e.g., Hedonic Motivation and Behavioural Intention) and conducting confirmatory factor analysis to compare model fit with correlated and uncorrelated factors. Ultimately, discriminant validity is supported when items designed to measure different constructs exhibit lower cross-loadings on unintended constructs than their primary loadings on the intended construct.

3.8.7 *Reliability*

Kothari and Garg (2014) explored various methods to assess the reliability of a research instrument. These methods focused on establishing the instrument's dependability in capturing data accurately, including examining the data's origin, collection methodology, and adherence to appropriate protocols. The researcher employed a multi-pronged approach to ensure reliability in this specific study. First, a peer evaluation of the data collection instruments was conducted. Second, supervisors facilitated expert judgment of the instruments' reliability. Finally, the researcher performed an additional peer review of the data collection tools (Kothari & Garg, 2014).

To assess the internal consistency and stability of the instrument used to measure e-payment adoption in the taxi sector, a reliability test was conducted using Cronbach's alpha (Rahman et al., 2020). This approach evaluated whether the instrument effectively measured the variable of interest (e-payment adoption). A Cronbach's alpha score exceeding 0.6 is generally considered acceptable, while scores below 0.6 indicate low internal consistency and potential issues with the instrument. A low score suggested that the items do not all measure the same underlying construct (Cohen, 2019). In simpler terms, a high Cronbach's alpha indicated that the instrument's items consistently measured the same concept, thus verifying its dependability in assessing the construct of e-payment adoption (Rahadi et al., 2021). Building on this concept, Mohamad et al. (2023) suggested that a Cronbach's alpha of 0.6 is sufficient to ensure an instrument can accurately assess the construct of interest within most research studies.

3.9 Ethical considerations

Overall, the ethical considerations for the study were upheld throughout the research to demonstrate commitment to ethically conducting the research.

The Witwatersrand University of Business Research Ethics Committee gave their official ethical authority to perform the study. This demonstrated that the researcher carefully considered the study's ethical issues and ensured that the volunteers were treated fairly and respectfully.

The following ethical standards were followed in this study:

- Consent was given voluntarily after being informed of the study's goals and their rights as participants.
- Participants were allowed to stop participating in the study whenever they wanted.
- The participants' identities were kept private. The study's findings were presented to prevent participants from being identified, and the data gathered were anonymised.
- Participants were treated with respect, and their opinions were considered.

- Measures were taken to lessen the power of disparity between participants and researchers by being aware of it.
- The researcher took precautions to reduce any risk to the subjects. This included ensuring the participants were not physically or mentally endangered.

CHAPTER 4. PRESENTATION OF RESULTS

4.1 Introduction

This chapter focused on analysing and presenting the key findings from the questionnaire-based data analysis clearly and concisely. The analysis commenced by exploring the participants' demographic profiles, including their usage habits regarding Minibus Taxis and mobile devices. This initial exploration provided valuable context for the subsequent analysis. the chapter delved into assessing the measuring tool used in the study. This section presented the validity and reliability results of Principal Component Analysis (PCA). PCA is a statistical technique employed to transform large datasets by reducing the number of variables while preserving the most significant information. This process facilitates complex data analysis by condensing it into a more manageable format.

Finally, the chapter addressed the research hypotheses by presenting the results of the multiple regression and bivariate correlation analyses. Multiple regression is a statistical method used to examine how multiple independent variables influence a dependent variable. Bivariate correlation analysis, in contrast, measures the degree to which two variables change linearly. The combined presentation of these results provided comprehensive insights into the relationships between the study variables.

4.2 Participants profile

Different communication methods were used to disseminate the survey link (Email, WhatsApp, X, LinkedIn, and Facebook), and 282 people responded. It is interesting to note that 15 people lacked information on these answers. Of the incomplete answers, fifteen did not start the survey at all; they opened it and closed it as they did not consent, as shown below:

Table 4.1: Survey Concerted and Not Concerted

Responses	Frequency	Percentage
Concerted	274	94.81%
Did not Concert	15	5.19
Total	289	100%

"Researcher own compilation 2024."

The remaining 94 participants started the survey but only finished the first portion, which included questions about demographics and their usage of Minibus taxis. Consequently, of the 289 replies received, only 195 were considered complete and included in the following study. This set of fully completed replies is the dataset for additional analysis and interpretation below.

Table 4.2: Survey response and completion

Responses	Frequency	Percentage
Complete Surveys	195	67.47%
Incomplete surveys	94	32.53%
Total	289	100%

Source: "Researcher own compilation 2024."

Out of the 289 surveyed participants, the data set revealed that the completion population descriptive mean of the survey was 76.460. The data indicated a standard deviation of 35.159 in terms of survey completion, confirming that 69.9% of participants were within one standard deviation. 202 participants completed between 100% and 50.5% of the survey. Also, 15 participants (5.32%) did not consent to the survey. Table 4.2.3 below indicates the progress descriptive information of the participants:

Table 4.3: Progress Descriptive Statistics

Responses	Frequency	Mean	Std. Deviation	Variance
Progress	289	76.460	35.159	1236.145
Did not consent = 15 participants (5.32%)				
Std. Deviation and Variance use N rather than N-1 in denominators.				

4.3 Participants Demographics Summary

In line with the research methodology outlined in Chapter 3, this section reflects background information on the 195 participants. As a result of the agreed confidentiality, only the respondent's information relevant to the study was captured. All participants were Minibus taxi users, and the tables shown below outline the diverse purposes for which they used Minibus taxis, the frequency of usage, and their self-reported knowledge of e-payment methods. This information was essential for understanding Minibus taxi users' perspectives and behaviours concerning electronic payment methods.

The analysis focuses on a total of 195 participants who completed the survey. The gender distribution among these participants is as follows: 90 (46.2%) identified as male, 98 (50.3%) as female, 5 (2.6%) as non-binary, and 2 (1.0%) preferred not to specify their gender. Regarding age distribution, most participants, accounting for 84.1% (195 individuals), were under 45. Among this age range, the 35-44-year-old group stands out with the most participants, totalling 61 (31.2%). Table 4.4 provides a comprehensive analysis.

The collected data showed that the participants' educational status and backgrounds varied. 106 (54.4%) of the participants said they were undergraduate degree holders, followed by 37 (19%) who hold matric or certificates. In terms of educational achievement, 34 (17.45) participants were Master's / Doctorate holders, 15 (7.7%) participants were Diploma holders, and only 3(1.5%) participants had a level of education less than high school.

In terms of employment status:

- 99 participants (50.8%) were employed full-time.
- 65 participants (33.3%) identified as students.
- 15 participants (7.7%) were categorised as employed part-time, temporary or on a contract basis, with 5 participants being self-employed and retired.
- 4 participants (2.1%) reported being unemployed and not actively looking for work.

It is worth noting that all participants were Minibus Taxi users, showcasing a diverse range of employment statuses. This information contributes to understanding the participants' demographic composition and minibus taxi usage patterns. Table 4.4 below reflects the respondents' feedback.

5. Employment Status * 2. Age * 1. Gender Crosstabulation

Count

1. Gender			2. Age					
			18 - 24	25 - 34	35 - 44	45 - 54	55 and above	Total
Male	5. Employment Status	Employed full time	2	14	24	9	0	49
		Employed part time / Temporary / Contract	0	4	2	1	1	8
		Self Employed	0	0	3	0	0	3
		Unemployed not looking for work	0	0	2	0	0	2
		Retired	0	2	0	0	2	4
		Student	19	4	1	0	0	24
	Total		21	24	32	10	3	90
Female	5. Employment Status	Employed full time	0	15	26	8	1	50
		Employed part time / Temporary / Contract	0	3	2	1	0	6
		Self Employed	1	0	0	0	1	2
		Unemployed not looking for work	1	1	0	0	0	2
		Student	31	5	0	0	0	36
		Apprenticeship / Learnership	1	1	0	0	0	2
	Total		34	25	28	9	2	98
Non-binary	5. Employment Status	Retired	0		1			1
		Student	4		0			4
	Total		4		1			5
Prefer not to say	5. Employment Status	Employed part time / Temporary / Contract	0	1				1
		Student	1	0				1
	Total		1	1				2
Total	5. Employment Status	Employed full time	2	29	50	17	1	99
		Employed part time / Temporary / Contract	0	8	4	2	1	15
		Self Employed	1	0	3	0	1	5
		Unemployed not looking for work	1	1	2	0	0	4
		Retired	0	2	1	0	2	5
		Student	55	9	1	0	0	65
		Apprenticeship / Learnership	1	1	0	0	0	2
	Total		60	50	61	19	5	195

4.4 Descriptive Analysis

A qualifying question that included a brief definition of e-payment to participants who travelled using a Minibus Taxi ride was used to collect data. These participants have travelled using Minibus taxis moving from one point to the other A to point B and used any form of e-payment to pay for their taxi rides. The frequency, if any, with which the participants travelled using Minibus taxis is shown in Figure 4.4.1 below. The replies from the data set are displayed in the table below.

4.4.1 *Travelling using Minibus Taxi*

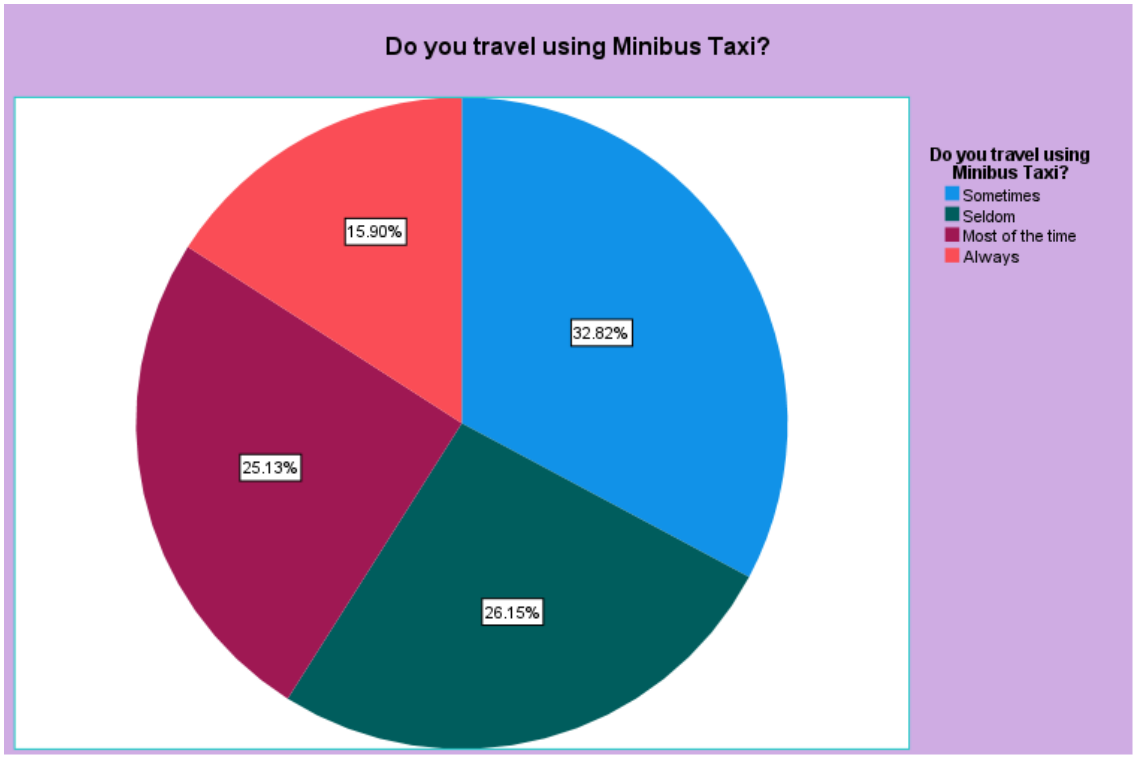


Figure 4.4.1: Source: "researcher own compilation 2024"

In addition, the participants were also asked if they were aware of any e-payment options for Minibuses in their area. 76.9% indicated that they were not aware, 11.3% indicated that they were unsure, and 11.8% indicated that they were fully aware of e-payment options for Minibus taxi rides in their areas.

Table 4.5: Awareness of e-payment availability for Minibus Taxi rides

Are you aware of the availability of e-payment options for Minibus Taxi rides in your area?	Frequency	Percent
No	150	76.9
Not Sure	22	11.3
Yes	23	11.8
Total	195	100.0

Source: (IBM Corp., 2023)

Lastly, in addition to participants were asked if they generally found that Minibus taxi drivers were ready to accept e-payment methods. 110 participants stated no, with 61 participants unsure if Minibus taxi drivers were ready. Only 24 participants believed that Minibus taxi drivers were ready. In terms of the proportion test, overall, participants express varying degrees of uncertainty or belief in Minibus Taxi drivers' readiness to accept e-payment methods, and these differences are statistically significant for the "Not Sure" and "Yes" responses. The Table 4.5.2 below shows the responses.

Table 4.6: Proportion Test (2 Outcomes)

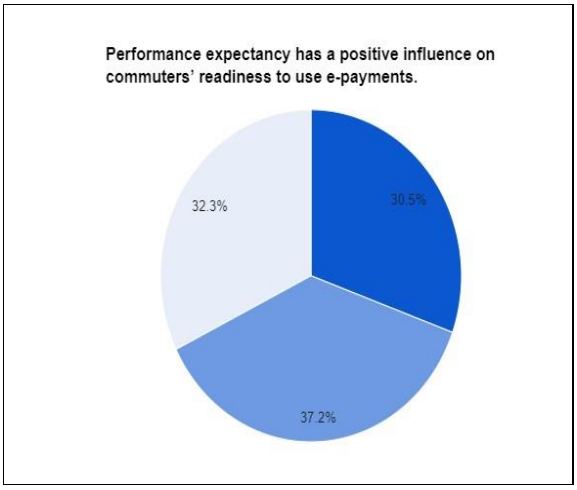
Binomial Test

						95% Confidence Interval	
	Level	Count	Total	Proportion	p	Lower	Upper
Q8	No	110	195	0.564	0.085	0.4914	0.635
	Not Sure	61	195	0.313	< .001	0.2485	0.383
	Yes	24	195	0.123	< .001	0.0805	0.178

Note. H_a is proportion ≠ 0.5

Source: "researcher own compilation 2024"

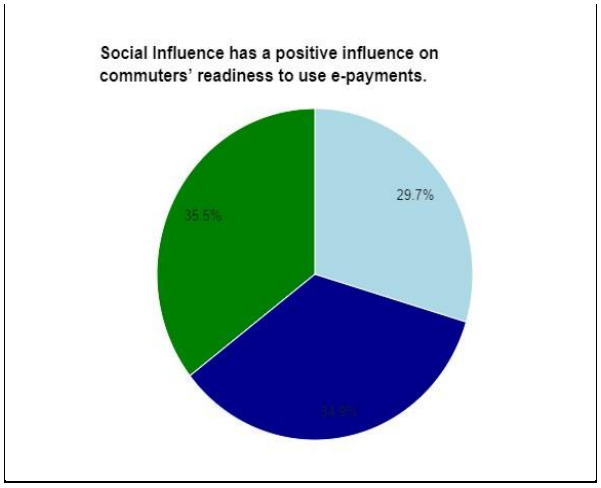
4.4.2 *H1. Performance expectancy has a positive influence on commuters' readiness to use e-payments.*



- Performance expectancy, as captured by this factor, is deemed to be a relevant aspect for minibus taxi riders using electronic payment methods.
- In assessment of respondent's data, the graph on the left indicates a positive influence pf performance expectancy. Accuracy (37.2%); with 32.3% of participants who believed that using e-payment to pay improve their taxi ride experience. And a total of 30.5 % respondent's that believed use of e-payment methods it's an efficient way to pay.

Figure 4.4.2: Source: "researcher own compilation 2024"

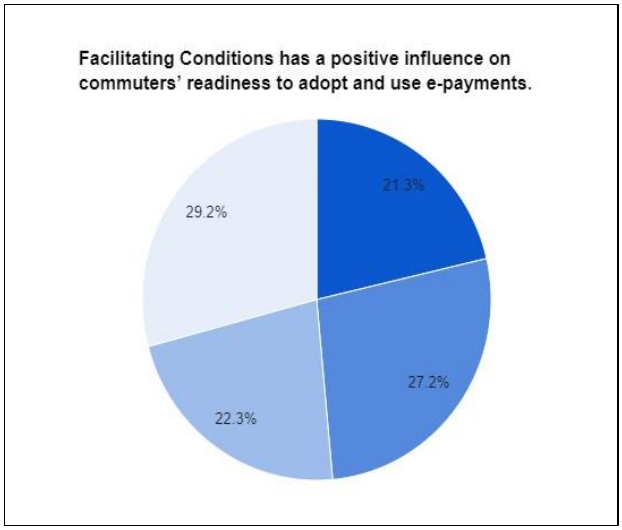
4.4.3 *H2. Social Influence has a positive influence on commuters' readiness to use e-payments.*



- Social influence as a factor was observed to have a moderate-to-strong connection influence, with peer behaviour (35.5%) being the most influential.
- Opinions from valued individuals (34.9%) are also considered significantly, followed by general influence from family and friends (29.7%).
- This suggests positive influence on participants that might be more inclined to adopt e-payment based on what others around them, particularly those they respect, are doing, compared to broader social circles.

Figure 4.4.3: Source: "researcher own compilation 2024"

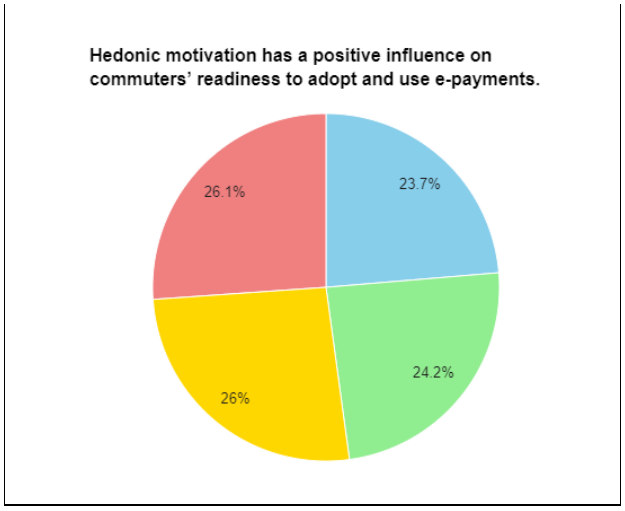
4.4.4 *H3. Facilitating Conditions has a positive influence on commuters' readiness to adopt and use e-payments.*



- Reliable internet connection, easy access to technology and device ownership are critical factors influencing relating to facilitation condition to influence participants positively.
- This descriptive analysis aims to explore respondent's perceptions regarding the cruciality and satisfaction in showcasing their importance in e-payment adoption.

Figure 4.4.4: Source: "researcher own compilation 2024"

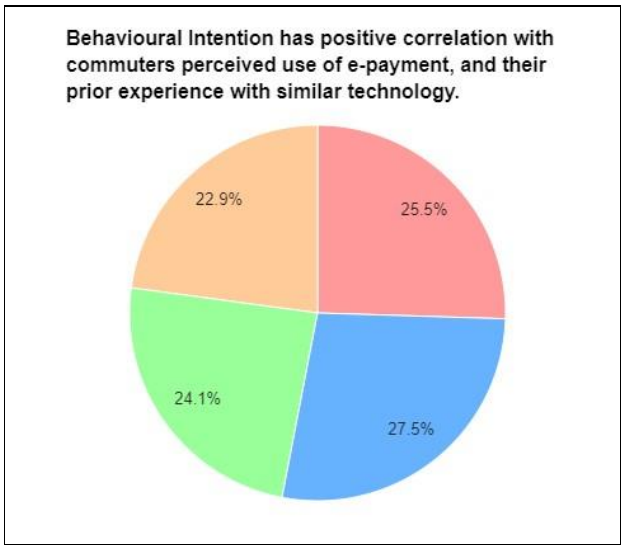
4.4.5 *H4. Hedonic motivation has a positive influence on commuters' readiness to adopt and use e-payments.*



- All data collected showed participants strong connection to hedonic motivation factors, with explained variance ranging from 23.7% to 26.1%.
- Specific features that enhance convenience, speed, and perceived quality seem to play a vital role in making e-payment enjoyable for minibus taxi rides.
- Each data points suggests e-payment features significantly contribute to convenience / practicality / enjoying the experience.

Figure4.4.5: Source: "researcher own compilation 2024"

4.4.6 *H5. Behavioural Intention has a positive correlation with commuters' perceived use of e-payment and their prior experience with similar technology.*



- These factors represent the participants' intentions to continue using, recommend, explore new methods, and increase usage of electronic payment methods for minibus Taxi rides in the future.
- The participants collected data in this descriptive analysis indicate of the participants' positive attitudes and perceptions regarding the use of electronic payment methods for minibus Taxi rides.

Figure 4.4.6: Source: "researcher own compilation 2024"

4.5 PCA- Principal Components Analysis

This section presents the results of two tests to assess the validity and reliability of the research instrument. Principal Component Analysis (PCA) was used to evaluate the measure's validity, while Cronbach's alpha was employed to assess its reliability. SPSS 29 was used for the analysis to attain internal consistency, and the validity of the measurement was assessed using exploratory factor analysis, confirmatory component analysis, correlation tests, reliability, and Chi-Square test.

4.5.1 *Convergent and Discriminant Validity*

An initial principal component analysis (PCA) was conducted on all 26 variables in the research model. However, the analysis resulted in only six items with high factor loadings, suggesting they were the most relevant for further analysis greater than 1, as indicated in our eigenvalue rule. Hedonic Motivation (HM)six items retained were intended to measure the same construct of how the independent variables like Performance Expectancy (PE), Effort Expectancy

(EE), Social Influence (SI), Facilitating Conditions (FC), Hedonic Motivation (HM), and Habit (H), these variables had any influence in terms of user behaviour. It has been recorded in the dependent variable (Behavioural Intentions) results. The dependent variable, Behavioural Intention, positively correlated with commuters' perceived use of e-payment and their prior experience with similar technology.

Table 4.6 below presents the KMO and Bartlett's test results, which indicate the appropriateness of using PCA. The KMO measure indicates appropriateness when the value is above 0.5 or 0.8 preferably and when Bartlett's test is significant. (Cohen, 2019; Field, 2017; Hair et al., 2013). The KMO measure for this study is 0.876, which is above the 0.6 threshold and the preferred threshold of 0.8. Bartlett's Test of Sphericity is significant because the p-value <0.000 is very small, less than .05 and approximates a chi-square distribution. It is considered a chi-square distribution. This test confirms that the variables are well correlated with each other, significantly different than zero, and this sample is appropriate for factor analysis.

Table 4-7: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.876
Bartlett's Test of Sphericity	Approx. Chi-Square	2538.081
	df	325
	Sig.	.000

Source: "researcher own compilation 2024"

The communalities factors below all exceed 0.4, ranging from 0.567 to 0.746.

- All the reported commonalities in Table 4.9 are generally favourable, as they exceed the recommended threshold of 0.4, which aligns with the ideal scenario according to Cohen (2019).
- The range of commonalities (from 0.567 to 0.746) suggests that the extracted factors account for a substantial proportion of the variance in each variable.

- Higher communalities indicate that the factor analysis successfully explains a significant portion of the variability in the observed variables.
- This suggests that the factors derived from the analysis are relevant and contribute meaningfully to understanding the observed variables.

4.5.2 *Derived Understanding of the Communalities Measurement*

Analysis of these Communalities represents the proportion of a variable's variance that the extracted factors can explain. In this case, these commonalities refer to the proportion of variance in each item.

Performance Expectancy

- Overall perception of electronic payment for minibus rides contributes in different ways. Accuracy of taxi ride transactions was the strongest contributor, followed by efficiency and convenience.

Social Influence

- A picture where specific connections and social pressures within respondent's networks play a bigger role than broader family/friend circles is suggested, as it scored 62.8% overall.

Hedonic Motivation

- Participants perceived enjoyment/fun with specific features that enhance convenience, speed, and perceived quality played a vital role in making e-payment enjoyable for minibus taxi rides.

Price Value

- All participants show some willingness to pay fees for convenience and safety, with security being a critical aspect of perceived value, even outweighing potential fees.

Habit

- The factor loadings support that measurement was effective for the Habit underlying construct concerning e-payment methods. The positive sign of the factor loadings depicts that participants are more likely to exhibit the habit of using e-payment methods.

Behavioural Intentions

- There was a moderate-to-strong connection to the behavioural intention factor from the respondent's data, with explained variance ranging from 64.3% to 74.6%. This suggests a pattern where participants might be more enthusiastic about promoting e-payment than their future usage and open to trying new options but slightly less inclined to increase overall use to increase overall use significantly.

Table4-8: Communalities

Communalities		
	Initial	Extraction
Performance Expectancy :2.1. Using electronic payment methods provides an efficient way paying for my minibus Taxi rides.	1,000	0,596
2.2. The electronic payment method would provide an accurate information pertaining my minibus Taxi ride transactions	1,000	0,682
2.3. Paying with an electronic payment method improves my overall experience paying for minibus Taxi ride.	1,000	0,618
Social Influence: 3.1 I am influenced by family members and friends to use electronic payment methods.	1,000	0,533
3.2. People whose opinions I value encourage me to use electronic payment methods for minibus Taxi rides.	1,000	0,670
3.3. I am more likely to use electronic payment methods for minibus Taxi rides if others around me are using them.	1,000	0,657
Facilitation Conditions:4.1. It is easy to access the necessary technology to use electronic payment methods for minibus Taxi fare.	1,000	0,564
4.2. My internet connection is reliable to do electronic payments when I pay for minibus Taxi rides.	1,000	0,647
4.3. I own a smartphone or device capable of making e-payments for minibus Taxi rides.	1,000	0,597
4.4. There are barriers related to technology access that might hinder my adoption of e-payments for minibus Taxi rides	1,000	0,661
Hedonic Motivation: 5.1. Paying for minibus Taxi rides using electronic payment methods is enjoyable and fun.	1,000	0,671
5.2. Using electronic payments for minibus Taxi rides is useful to my daily life as I don't have to carry cash.	1,000	0,687
5.3. Electronic payment methods enhance the overall quality of minibus Taxi rides through e-payment features	1,000	0,720
5.4. Using electronic payment methods is an enjoyable experience as it brings convenience and speed when paying for minibus Taxi rides?	1,000	0,633
Price Value: 6.1. Electronic payment methods offer cost savings compared to traditional payment methods when paying for minibus Taxi rides.	1,000	0,567
6.2. The security benefits of using electronic payment methods for minibus Taxi rides outweigh any associated fees or charges	1,000	0,678
6.3. Having loyalty programs or discounts offered for using by e-payment methods for minibus Taxi rides is more appealing to me	1,000	0,481
6.4. For the safety of my personal and financial information when using e-payments for minibus Taxi rides I am willing to pay transaction fees for the convenience it brings	1,000	0,518
Habit: 7.1. I am accustomed to using electronic payment methods regularly.	1,000	0,746
7.2. Electronic payment methods have become a daily experience as I use them for different purposes, such as retail purchases or bill payments?	1,000	0,729
7.3. I find it difficult to switch back to traditional payment methods (carrying cash) due to my habit of using electronic payments.	1,000	0,632

7.4. Using electronic payment methods and its features or attributes align with my personal preferences.	1,000	0,731
Behavioural Intentions: 8.1. I intend to continue using electronic payment methods in the future even for minibus Taxi rides.	1,000	0,716
8.2. I would recommend paying for minibus Taxi rides through electronic payment methods to others.	1,000	0,773
8.3. I am likely to explore and adopt new electronic payment methods when they become available.	1,000	0,677
8.4. I plan to increase my usage of electronic payment methods in the future even for my minibus Taxi rides.	1,000	0,642
Extraction Method: Principal Component Analysis.		

Source: "researcher own compilation 2024"

Below is the table explaining the total variance. In this table, we shall only retain the components that are >1, according to our Eigenvalues setting. So, we shall use the Latent Root Criterion (Kaiser Criterion), a common rule for determining the number of factors to retain in factor analysis. According to the latent root criterion, these 6 factors would be retained.

- This research adopts the convention of retaining factors with eigenvalues exceeding 1. These factors are deemed significant as they explain a greater proportion of the data's variance than a single original variable (Hair et al., 2013).
- Initial Eigenvalues column indicates the eigenvalues before rotation, and these Six factors have eigenvalues greater than 1:
    - Component 1 (8.948); Component 2 (1.928); Component 3 (1.782)
    - Component 4 (1.542); Component 5 (1.258); Component 6 (1.061)
- Considering the cumulative Percentage of Variance Explained by the retained factors, the total variance that the six components account for in the table below is 63.53 %, which is above the recommended threshold of 60%. The analysis considered 26 components, one for each variable. Retaining all components would have explained all the variance in the data (100%). However, such a solution is desirable and undesirable as it would lead to an overfitting model that lacks generalizability (Cohen, 2019).

Table 4-9: Total Variance table

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.807	33.875	33.875	8.807	33.875	33.875
2	2.186	8.408	42.283	2.186	8.408	42.283
3	1.893	7.281	49.564	1.893	7.281	49.564
4	1.642	6.316	55.880	1.642	6.316	55.880
5	1.204	4.630	60.509	1.204	4.630	60.509
6	1.092	4.200	64.710	1.092	4.200	64.710
7	.986	3.793	68.503			
8	.811	3.120	71.623			
9	.741	2.849	74.472			
10	.722	2.778	77.250			
11	.620	2.385	79.635			
12	.596	2.291	81.925			
13	.562	2.161	84.087			
14	.530	2.039	86.126			
15	.459	1.766	87.891			
16	.437	1.680	89.571			
17	.389	1.497	91.068			
18	.369	1.421	92.490			
19	.330	1.269	93.759			
20	.289	1.113	94.872			
21	.281	1.082	95.954			
22	.261	1.006	96.959			
23	.250	.961	97.921			
24	.219	.842	98.763			
25	.167	.644	99.407			
26	.154	.593	100.000			

Extraction Method: Principal Component Analysis.

Source: "researcher own compilation 2024"

Below, Figure 4.5.3. the Scree plot further supported the explanation of total variance as it showed the eigenvalues of each component in a principal component analysis (PCA) plotted against the component number. The scree plot (Figure 4.5.3) supports the conclusion that only six of the 26 components explain most of the variance in the data. This is evident as only six components have eigenvalues exceeding 1, indicating their significance for further analysis. Consequently, only these six factors will be retained. Each eigenvalue represented the variance explained by a particular component as retained in the analysis.

- The first component explains a large amount of variance, as indicated by its high eigenvalue, which suggests that the first component had captured a strong pattern in the data.
- The eigenvalues for the subsequent components were much smaller than the eigenvalue for the first component, which suggests that these components were explained less and less variance in the data.

4.5.3 *The Scree Plot*

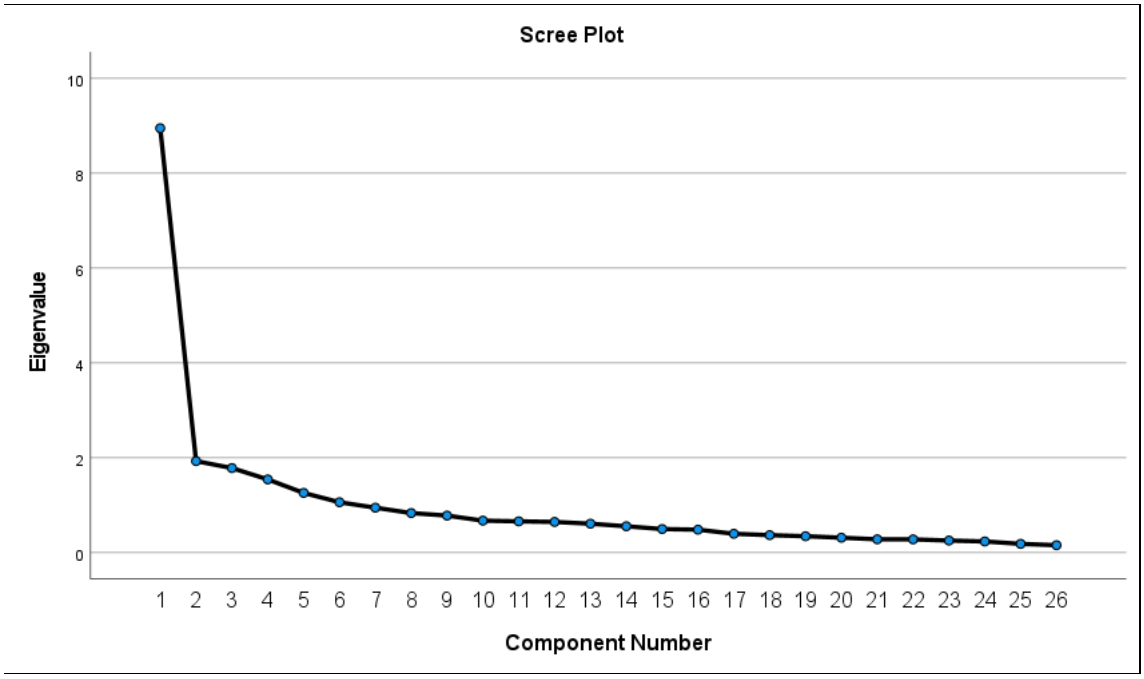


Figure 4.5.3: Source: "researcher own compilation 2024"

Table 4.10 This rotated component matrix shows the relationship between variables and components after applying varimax rotation to simplify the factor structure and enhance interpretability. The coefficients display how each variable contributes to each component, with values above the threshold of 0.4 considered significant in determining the relationship between variables and components.
The below table reaffirms the retention of six factors, namely:1 = Performance Expectancy (PE), 2 = Social Influence (SI), 3 = Hedonic Motivation (HM), t 4 = Price Value (PV), 5 = Habit (H) and 6 = Behavioural Intentions (BI)

It further strengthens the evidence for construct validity. All retained items are loaded onto a single component, representing a unified construct. This aligns with convergent validity, as the items intended to measure this single construct concentrated around it with high factor loadings exceeding 0.6. Additionally, discriminant validity is supported by the absence of cross-loadings above 0.4, meaning items within the construct are not highly correlated with those in other constructs. These findings and the retained components aligning with the research model (despite some item eliminations) demonstrate robust evidence of construct validity.

Table 4-10: Rotated Component Matrix

Rotated Component Matrix[a]						
	Component					
	1	2	3	4	5	6
PE1			.620			
PE2			.776			
PE3			.655			
SI2						.693
SI3			.683			
FC2					.758	
H3		.710				
H4		.665				
PV1				.683		
PV2				.802		
PV4				.604		
H1	.844					
H2	.824					
H4	.664					
BI2					.613	
BI3	.665					
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.[a]						
a. Rotation converged in 17 iterations.						

Source: "researcher own compilation 2024"

4.5.4 *Scale Reliability*

In addition to the general guidelines for interpreting collected data, to test our scale reliability in measuring the internal consistency of variables. Cronbach's alpha value, in this section, should be above 0.6, as Alpha below 0.60 is considered poor and indicates low internal consistency among the items. So, an Alpha above 0.60 was considered acceptable for the research, and this was confirmed by (Cohen, 2019)Table 4.12 below provides an overview of the Cronbach Alphas for each component. All the constructs—aside from the Facilitation Condition (FC), measured at 0.143—have Cronbach's alphas higher than the 0.6 requirements. In other words, the low Cronbach's Alpha suggests a lack of internal consistency.

Table 4-11: Summary of Cronbach Alpha results

Construct/Variable	Original number of measurement items	Items removed during PCA	Items removed after reliability test	Final number of items measured	Crobach Alpha	Reliability conclusion
Performance Expectancy (PE),	3	0	0	3	0,807	Very Good
Social Influence (SI),	3	0	0	3	0,629	Acceptable
Price Value (PV),	4	0	0	4	0,695	Acceptable
Hedonic Motivation (HM)	4	0	0	4	0,841	Very Good
Habit (H)	4	0	0	4	0,830	Very Good
Behavioural Intentions (BI)	4	0	0	4	0,830	Very Good

Source: (IBM Corp., 2023)

A Cronbach's Alpha value of 0.906 was obtained when measuring the 26 factors. This value indicates high internal consistency among the 26 items in the scale or questionnaire. It suggests that the items consistently measured the same underlying construct, and the scale was reliable for assessing that latent variable.

Table 4.12: Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.906	26

4.6 Correlation Analysis

Below is the correlation matrix with Pearson's correlation coefficients for various questions asked to participants related to each construct, i.e., PE, SI, HM, PV, H and BI. The correlation analysis showed the strength and direction of the relationships between different questions asked in each construct against each other. These findings provided insights into the factors influencing individuals' intentions and behaviours regarding adopting electronic payment methods for minibus Taxi rides.

4.6.1 *Correlation matrix results of each construct question of the instrument*

Table 4- 13: Correlations Matrix results of each construct question of the instrument

Section	Correlation Coefficients	Interpretation
Performance Expectancy	0.596, 0.682	Moderate positive correlations, indicating a positive relationship between perceived efficiency, accuracy, and overall experience when using electronic payment methods for minibus Taxi rides.
Social Influence	0.533, 0.670	Moderate positive correlations suggest a positive relationship between the influence of valued opinions and the likelihood of adopting electronic payment methods based on others around you.
Facilitation Conditions	0.564, 0.661	Moderate positive correlations indicate a positive relationship between factors like technology access, reliable internet connection, smartphone

		ownership, and the absence of barriers related to technology access in adopting e-payments for minibus Taxi rides.
Hedonic Motivation	0.633, 0.720	Moderate positive correlations suggest a positive relationship between hedonic aspects (enjoyment, usefulness, enhancement of overall quality) and the adoption of electronic payment methods for minibus Taxi rides.
Price Value	0.481, 0.678	Moderate positive correlations. Factors like cost savings, security benefits, and willingness to pay transaction fees have a moderate positive relationship. The correlation for loyalty programs or discounts is comparatively lower.
Habit	0.632, 0.746	Strong positive correlations indicate a strong positive relationship between the habit of regularly using electronic payment methods, daily experience, difficulty switching back to traditional methods, and alignment with personal preferences.
Behavioural Intentions	0.642, 0.773	Moderate to strong positive correlations, suggesting a positive relationship between behavioural intentions like continued usage, recommending to others, exploring new methods, and increasing future usage of electronic payment methods for minibus Taxi rides.

Source: (IBM Corp., 2023)

In conclusion, the table below displays the strength and direction of the correlations between various constructs. The correlation matrix helped discover the interactions and potential dependencies within the dataset by providing helpful information about the connections between the variables.

4.6.2 *Correlations Matrix results of the six variables and their relationships*

Furthermore, the table below indicates the correlation matrix amongst the six variables and shows the relationships between different variables. A correlation coefficient of 1 indicates a perfect positive correlation, while a correlation

coefficient of -1 indicates a perfect negative correlation. A correlation coefficient of 0 indicates no correlation. In the provided correlation matrix, all the correlations were positive, meaning a positive relationship existed between each pair of variables. The strength of the relationships varies, however. The strongest relationships are between:

- Hedonic Motivation and Behavioural Intentions (correlation coefficient of 0.646)
- Habit and Behavioural Intentions (correlation coefficient of 0.519)
- Performance Expectation and Social Influence (correlation coefficient of 0.577)

These correlations suggest that people who find electronic payment methods enjoyable and useful are more likely to intend to use them in the future and that people who are influenced by others are more likely to use them if they see others using them. The weakest relationships are between:

- Price Value and Behavioural Intentions (correlation coefficient of 0.415)
- Price Value and Social Influence (correlation coefficient of 0.380)

These correlations suggested that price was not a major factor in people's decisions to use electronic payment methods and that others' opinions on price did not influence people. Overall, the correlation matrix suggests several positive relationships between different factors and people's intentions to use electronic payment methods for taxi rides. The data in the above table shows the correlation coefficient between the corresponding latent variables. The ** symbols show the statistical significance.

Table 4-14: The Pearson's Correlations of the six variables

Correlations

		PerformanceExpectation	SocialInfluence	HedonicMotication	PriceValue	Habit	BehaviouralIntentions
PerformanceExpectation	Pearson Correlation	1	.577**	.554**	.320**	.404**	.430**
	Sig. (2-tailed)		<,001	<,001	<,001	<,001	<,001
	N	195	195	195	195	195	195
SocialInfluence	Pearson Correlation	.577**	1	.438**	.380**	.470**	.327**
	Sig. (2-tailed)	<,001		<,001	<,001	<,001	<,001
	N	195	195	195	195	195	195
HedonicMotication	Pearson Correlation	.554**	.438**	1	.467**	.466**	.646**
	Sig. (2-tailed)	<,001	<,001		<,001	<,001	<,001
	N	195	195	195	195	195	195
PriceValue	Pearson Correlation	.320**	.380**	.467**	1	.362**	.415**
	Sig. (2-tailed)	<,001	<,001	<,001		<,001	<,001
	N	195	195	195	195	195	195
Habit	Pearson Correlation	.404**	.470**	.466**	.362**	1	.519**
	Sig. (2-tailed)	<,001	<,001	<,001	<,001		<,001
	N	195	195	195	195	195	195
BehaviouralIntentions	Pearson Correlation	.430**	.327**	.646**	.415**	.519**	1
	Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	
	N	195	195	195	195	195	195

**. Correlation is significant at the 0.01 level (2-tailed).

Source: "researcher own compilation 2024"

4.6.3 *The Pearson's Correlations results testing hypotheses.*

The degree of correlation between the two constructions of these variables was evaluated using Pearson's correlation coefficient (Field, 2017). This makes it easier to determine how strongly these notions are related. This section displays the findings for each hypothesis tested using Pearson's correlation coefficient to perform an initial test for the hypotheses. The hypothesis is then explicitly accepted or rejected using multiple regression.

Performance Expectations and Behavioural Intentions

- The Pearson Correlation of .430** Sig. (2-tailed) <,001 provides strong statistical evidence supporting the relationship between PE and BI. Given the positive correlation coefficient and the low p-value, the results strongly support the idea that performance expectation positively influences commuters' readiness to use e-payments.

- In practical terms, this suggests that as commuters' expectations regarding the performance of e-payments increase, their intentions to use

e-payments also increase. This is consistent with the hypothesis that higher performance expectations contribute to a more positive attitude or willingness to adopt e-payment methods. These support that "Performance expectancy positively influences commuters' readiness to use e-payments hypothesis".

4.6.4 *Scatterplot for Performance Expectation and Behavioural Intentions*

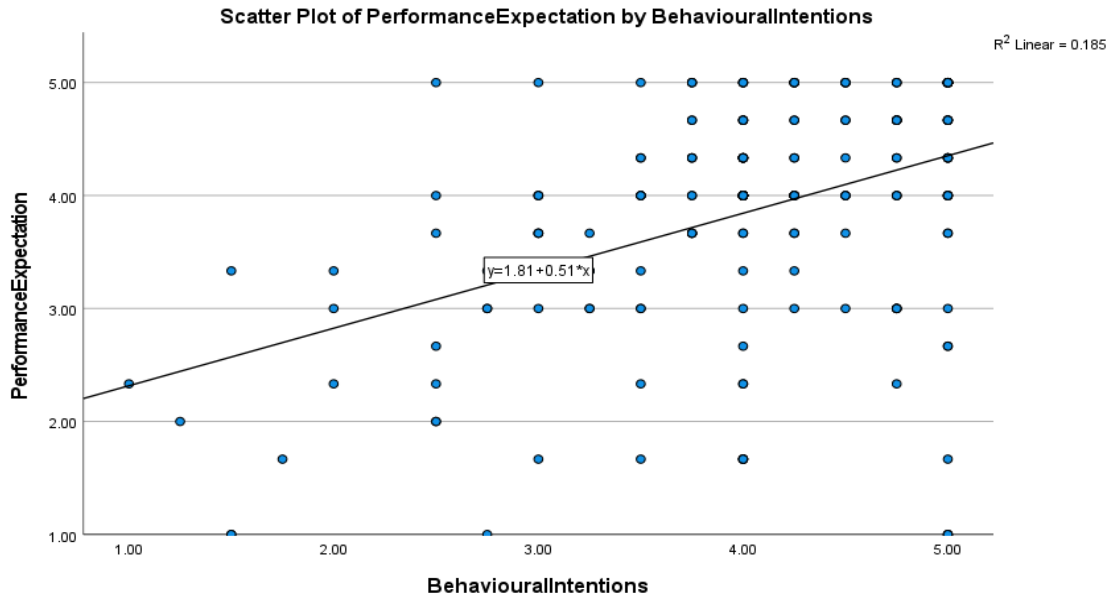


Figure 4.6.4: Source: "researcher own compilation 2024"

This is supported by the regression line (y = 1.81 + 0.51x), which slants upwards, indicating a positive association. The higher values indicate a stronger intention to adopt electronic payments for minibus taxi rides, and it is statistically significant ($p < 0.05$). These scatterplots also support that "Performance expectancy positively influences commuters' readiness to use e-payments hypothesis".

Hedonic Motivation and Behavioural Intentions

- The combined strength of the positive correlation coefficient and low p-value of Pearson Correlation .646** Sig. (2-tailed) <,001 suggests a positive and statistically significant relationship between HM and BI towards e-payments. In practical terms, this suggests that when

commuters are motivated by hedonic factors (such as enjoyment, pleasure, or sensory experiences) related to e-payment methods, their intentions to adopt and use these methods increase. Strong evidence supports the hypothesis that "Hedonic motivation has a positive influence on commuters' readiness to adopt and use e-payments.

4.6.5 *Scatterplot for Hedonic Motivation and Behavioural Intentions*

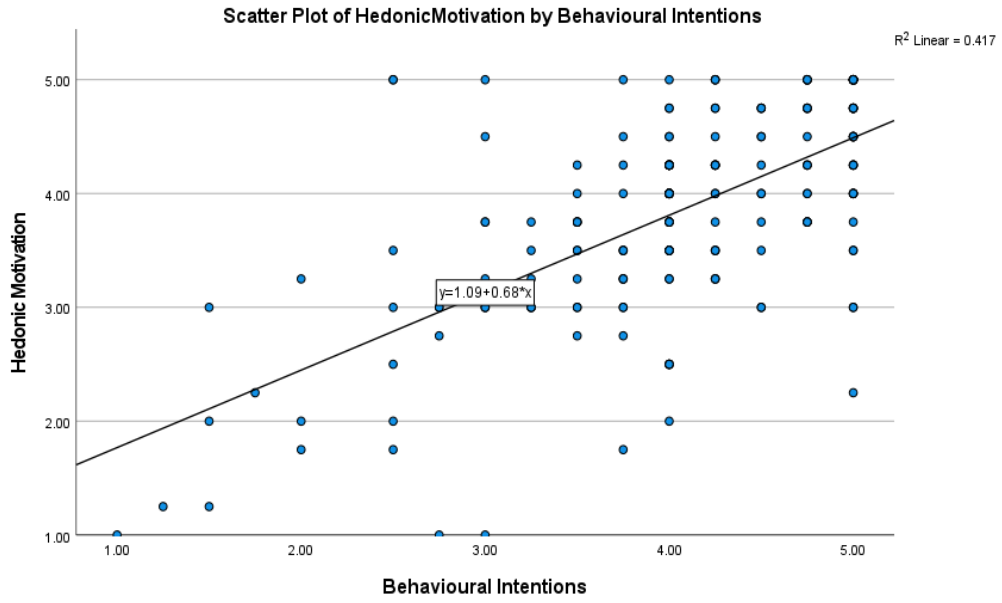


Figure 4.6.5: Source: "researcher own compilation 2024"

The scatterplot data supports the hypothesis that Hedonic motivation positively influences commuters' readiness to adopt and use e-payments. The positive correlation means that BI also tends to increase as HM increases, as indicated by the upward slope of the regression line. The R-squared value of 0.417 indicates a strong relationship between HM and BI.

Social Influence and Behavioural Influence

- The correlation coefficient of .327** Sig? (2-tailed) <,001, indicates a weak to moderate positive correlation; when SI increases, BI tend to increase, but the relationship is not perfect. The P-value: < 0.001 indicates a statistically significant result and partially supports the hypothesis that "Social Influence positively influences commuters' readiness to adopt and

use e-payments.

4.6.6 *Scatterplot for Social Influence and Behavioural Intentions*

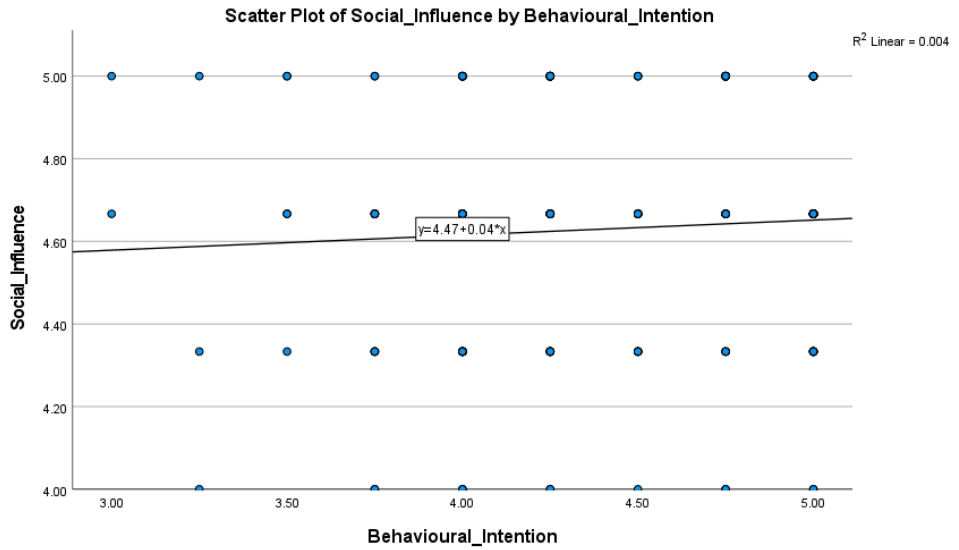


Figure 4.6.6: Source: "researcher own compilation 2024"

The above diagram depicts that the scatterplot provides limited support for the hypothesis. While there is a statistically significant positive correlation, it is very weak, suggesting that other factors likely play a much more significant role in influencing commuters' readiness to adopt e-payments. R-squared: 0.004 implies a very weak association. The evidence suggests that social influence may positively influence commuters' readiness to adopt and use e-payments.

Price Value and Behavioural Influence

- The Pearson correlation coefficient of 0.415 indicates a moderate positive correlation between Price Value and Behavioural Intentions. The significance level ($p < 0.001$) suggests that the observed correlation relationship is statistically significant. The p-value ($p < 0.001$) strengthens the evidence for a true relationship between PV and BI, and that supports the hypothesis that “Price Value positively influences commuters’ readiness to adopt and use e-payments.”

4.6.7 *Scatterplot for Price Value and Behavioural Intentions*



Figure 4.6.7: Source: "researcher own compilation 2024"

The moderate R-squared value (0.062) suggests that the linear model explains a noticeable portion of the variability in commuters' readiness to adopt e-payments. The linear equation y = 3.68 + 0.17x represents the fitted line but with a shallow slope due to the weak correlation. While not a high percentage, it indicates that Price Value contributes more substantially to the prediction of readiness than the previous scenarios.

Habit and Behavioural Intention

The Pearson's correlation coefficient of 519** Sig? (2-tailed) <,001, means a statistically significant relationship exists between the Habit and Behavioural Intentions. there is strong support for the hypothesis that Habit positively influences commuters' readiness to adopt and use e-payments. The observed relationships and statistical significance indicate a meaningful and positive association between Habit and Behavioural Intentions.

4.6.8 *Scatterplot for Habit and Behavioural Intentions*

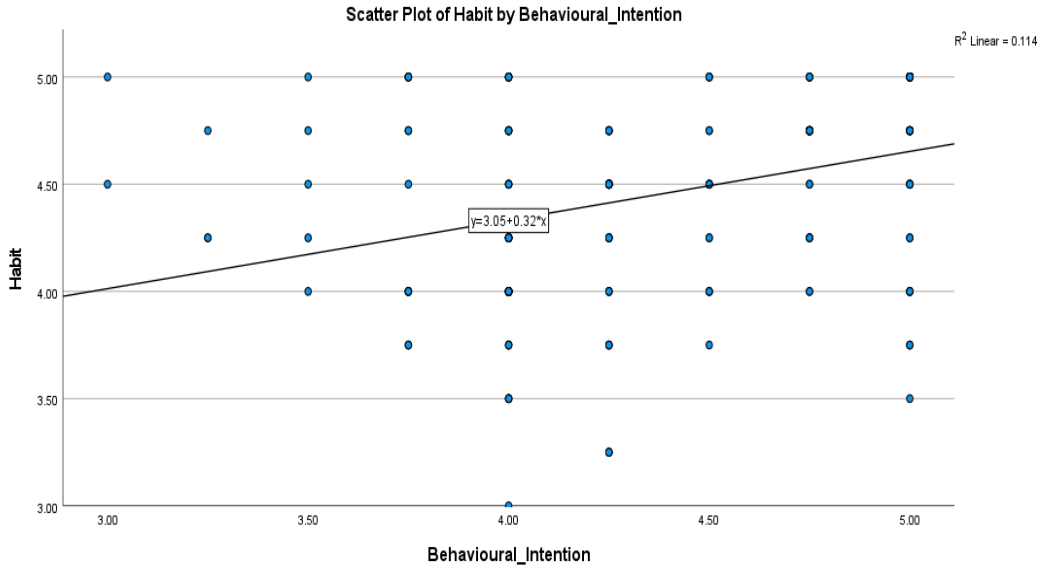


Figure 4.6.8: Source: "researcher own compilation 2024"

The above scatterplot with R-squared ($R^2 = 0.114$) and Linear Equation ($y = 3.05 + 0.32*x$) indicate partial support for the hypothesis that "Habit positively influences commuters' readiness to adopt and use e-payments." In this case, 11.4% of the variability in Behavioural Intentions can be attributed to Habit. However, the moderate strength of the correlation and the low R-squared value suggest that habit is not the only factor influencing this intention.

Facilitation Condition and Behavioural Influence

Based on the correlation coefficient shown in the table below of .078 Sig? (2-tailed) .279, indicate that there was not strong support for the hypothesis that the Facilitation Condition positively influences commuters' readiness to adopt and use e-payments. The weak correlation and non-significant p-value indicate that the linear model and the observed relationship are not statistically robust.

Table 4-15: The Pearson's Correlations of FC and BI

Correlations		
		Behavioural Intentions
Facilitation Conditions	Pearson Correlation	.078
	Sig. (2-tailed)	.279

Source: "researcher own compilation 2024"

4.6.9 *Scatterplot for Facilitation Condition and Behavioural Intentions*

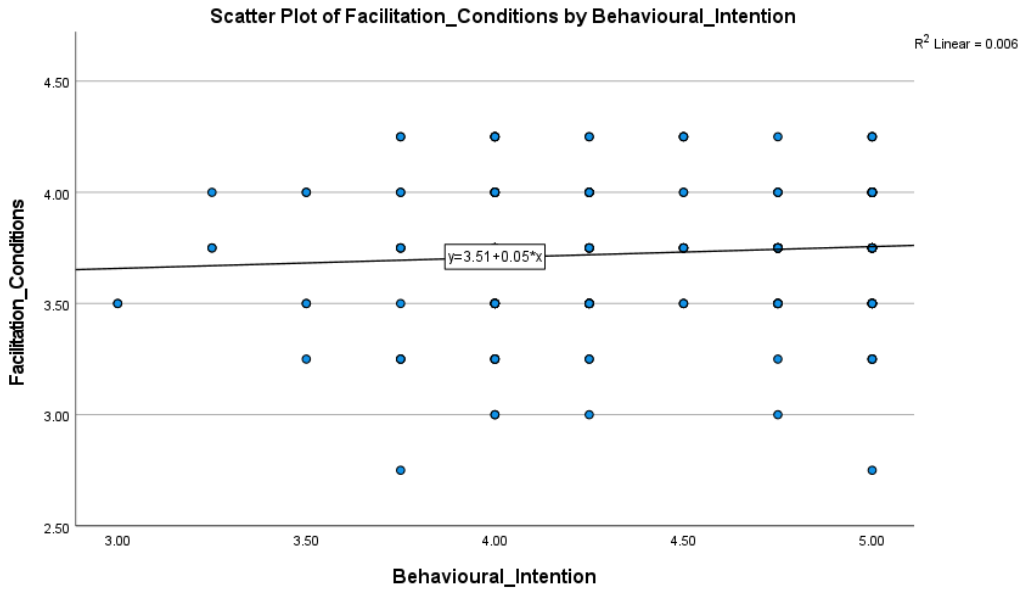


Figure 4.6.9: Source: "researcher own compilation 2024"

The scatterplot above indicates the linear model equation as y=3.51+0.05x, thus predicting the relationship between the FC and BI. The R-squared value of 0.006 indicates that the Facilitation Condition can explain only 0.6% of the variability in commuters' readiness to adopt e-payments.

4.6.10 *Multiple Regression Analysis*

A multiple regression analysis was employed to further examine and formally accept or reject the hypotheses. This study employed multiple regression analysis to investigate the combined influence of multiple independent variables on a single dependent variable., which led to conclusions drawn regarding their contributions to explaining variations in the dependent variable.

The data below in a statistical model summary showed the correlation coefficient between the observed and predicted values. In this case, R was 0.701, indicating a moderate-to-strong positive correlation. The coefficient of determination represents the proportion of variance in the dependent variable explained by the independent variables. In this case, it is approximately 0.491, indicating that about 49.1% of the variability in the dependent variable can be explained by the predictors. Adjusted R Square: that accounts for the number of predictors in the model. It is approximately 0.477, suggesting that after adjusting for the number of predictors, around 47.7% of the variability is explained, considering the model's complexity.

The standard error of the estimate is 0.62378, providing an estimate of the variability around the predicted values. The change in R Square compared to a baseline model is 0.491, indicating the improvement in explaining variance by adding the predictors. The F statistic measured whether adding predictors to the model significantly improved the fit. A higher F Change value of 36.458 suggested that the predictors collectively have a significant impact.

A constant term and the variables PE. The model's predictors include SI, HM, H and PV. According to the F-test, Model 1 shows statistical significance and seems to account for a sizable amount of the variance in the BI as a dependent variable. The regression model attempted to predict the dependent variable using the specified predictors. The model's performance was evaluated based on R^2 and adjusted R^2, and the individual predictors played a significant role in explaining the variability and provided meaningful contributions to predicting the outcome.

Table 4-16: Multiple Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.701[a]	.491	.477	.62378	.491	36.458	5	189	<,001

a. Predictors: (Constant), Habit, PriceValue, PerformanceExpectation, SocialInfluence, HedonicMotication

Source: "researcher own compilation 2024"

With the ANOVA table below, an assessment of the overall fit of the regression model is analysed with a focus on the dependent variable, Behavioural Intentions.

In this case, ANOVA analysis of the variance in Behavioural Intentions (9.430/ (9.430+ 37.732)), the F-statistic was 7.831, and a very small associated p-value of ("<.001"), the df of 6, indicating that the overall model is statistically significant. This suggested that at least one of the predictors (H, PV, PE, SI, HM, FC) was significantly associated with the dependent variable "Behavioural Intentions." Based on the provided ANOVA results, there is strong evidence to suggest that the model is a good overall fit for the data. The F-statistic is significant, and the model explains a meaningful proportion of the variability in BI. The small p-value supports rejecting the null hypothesis, indicating that the differences between group means are statistically significant.

Table 4-17: The ANOVA Analysis

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.430	6	1.572	7.831	<,001[b]
	Residual	37.732	188	.201		
	Total	47.162	194			
a. Dependent Variable: Behavioural Intention						
b. Predictors: (Constant), Performance Expectancy, Facilitation Conditions, Price Value, Social Influence, Habit, Hedonic Motivation						

Source: "researcher own compilation 2024"

The table below shows that the constant term is 0.825, which means that the dependent variable's predicted score is still 0.825, even if all the other predictors are zero. It further depicts the predictors' coefficients against the dependent and independent variables.

Table 4-18: Coefficients Analysis

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.875	.783		1.116	.266
	Facilitation Conditions	.046	.105	.029	.435	.664
	Social Influence	-.031	.117	-.018	-.267	.790
	Hedonic Motivation	.044	.038	.081	1.150	.252
	Habit	.288	.071	.274	4.081	<,001
	Price Value	.266	.102	.181	2.621	.009
	Performance Expectancy	.193	.079	.169	2.451	.015

a. Dependent Variable: Behavioural Intention

Source: "researcher own compilation 2024"

Performance Expectation: The unstandardised coefficient (B) for PE was 0.193, suggesting that for a one-unit increase in PE, the BI score was expected to increase by 0.193 units. The standardised coefficient (Beta) is 0.169, indicating the change in standard deviations of the dependent variable for a one-standard-deviation increase in the independent variable. However, the p-value for this coefficient is 0.015, which is less than the significance level of 0.05. That meant that the effect of PE on BI was not statistically significant.

Social Influence: The unstandardised coefficient is -0.031, suggesting that the BI score is expected to decrease by 0.031 units for a one-unit increase in SI. The standardised coefficient (Beta) is -0.018, and the t-value (-0.267) and p-value (.790) suggest that SI is not statistically significant at the conventional significance level of 0.05.

Hedonic Motivation: The 0.44, the unstandardised coefficient, suggested that for a one-unit increase in HM, the BI score was expected to increase by 0.44 units. The standardised coefficient (Beta) was 0.081, and the t-value (1.150) and p-value (.252) indicated that HM was not statistically significant.

Price Value: A 0.266 was recorded, suggesting that the Bl score was expected to increase by 0.266 units for a one-unit increase in PV. A standardised coefficient

(Beta) of 0.102 was noted. The t-value (2.621) and p-value (.009) suggested that PV was not statistically significant at the conventional significance level of 0.05.

Habit: The record of 0.288 was noted as an unstandardised coefficient, suggesting that the BI score is expected to increase by 0.288 units for a one-unit increase in H. The standardised coefficient (Beta) is 0.274, while the t-value (4.081) and p-value (<.001) indicate that H was statistically significant.

4.7 Summary of the results/findings

This chapter aimed to furnish details about the demographic traits of the surveyed individuals, encompassing their age range, gender distribution and educational qualifications. Additionally, an analysis was carried out to gain a deeper insight into participants' travel patterns based on where they lived. The study also scrutinised how frequently participants utilised Minibus taxis for various purposes such as commuting to school or work, visiting friends and family members, or running errands like shopping or vacationing.
The study revealed that many participants had not utilised Minibus taxis for travel. Participants were asked to rate their frequency of usage as always, seldom, mostly, or sometimes. Additionally, participants indicated their level of awareness regarding the availability and use of e-payment options in their local area by selecting from three categories: not aware, unsure, or fully informed.

Various tools, methods and techniques were employed to do appropriateness testing, establish validity measures and assess reliability correlations during the data collection analysis stage along with commonalities measurements; the retention criteria evaluation exercise performed after that helps interpret results so obtained - this also encompassed several statistical methodologies including multiple regression analyses hypotheses tests internal consistency checks among others, those methods or techniques are:

Table 4-19: Summary of hypothesis results

Hypothesis	Description	Result
H1	PE has a positive influence on commuters' readiness to use e-payments	Support
H2	SI partially influence commuters' readiness to use e-payments positively.	Partial
H3	FC has a positive influence on commuters' readiness to adopt and use e-payments	Reject
H4	HM has a positive influence on commuters' readiness to adopt and use e-payments	Support
H5	H has a positive influence on commuters' readiness to use e-payments	Support
H6	PV has a positive influence on commuters' readiness to use e-payments	Support
H7	BI has a positive correlation with commuters perceived use of e-payment, and their prior experience with similar technology.	Support

CHAPTER 5. DISCUSSION OF THE RESULTS

5.1 Introduction

The current research section explores and delves into the study's findings. It begins by going over and re-examining the study objectives previously stated in Chapter 1 and conveyed through its proposal to see if they have been met. This section will also discuss some of the limitations this investigation has encountered. Furthermore, recommendations based on these findings are then listed, and this section ends with recommendations for possible directions for future research.

5.2 PE's positively influence commuters' readiness to use e-payments.

Research states that customers are more likely to adopt new technology if they think it would benefit and enhance their lives (Alalwan et al., 2017). Overall, customer experience is likely to influence the probability of adoption. (Bhattacharya, 2019) notes that because electronic payment methods offer great flexibility and convenience, customers benefit from these advantages as they can pay for services efficiently and accurately.

Efficiency and accuracy of transactions combined with the overall experience were used to measure the influence of commuters' readiness to adopt e-payment for paying for Minibus taxi rides (Seetharaman et al., 2019). The hypothesis is well supported statistically, with a p-value of less than 001, significant at a 95% confidence interval, providing strong statistical evidence supporting the relationship between PE and BI. This is consistent with the hypothesis that higher performance expectations contribute to a more positive attitude or willingness to adopt e-payment methods.

5.3 SI positively influence commuters’ readiness to use e-payments.

Based on previous research (Peng et al., 2017), findings have shown that the limited or weak role of social influence in shaping individuals' attitudes and behaviours towards adopting new technologies has been insignificant. Even though the P-value < 0.001 indicates a statistically significant result, it partially supports the hypothesis that "Social Influence positively influences commuters’ readiness to adopt and use e-payments. As much as authors like (Rahadi et al., 2022), believe this variable positively impacts behavioural intention to adopt e-payment, the data collected indicate that influencing commuters' behaviour is uncertainly not strongly resting on societal influence as stated (Aydin, 2016)

5.4 FC positively influences commuters’ readiness to adopt and use e-payments.

The results align with recent studies by Koenig-Lewis et al. (2015). Their earlier research discovered insignificant relationships between facilitation conditions and behavioural intention. Mensah (2019) studied how enabling factors affected the uptake of e-learning in Ghana. The study discovered that the adoption of e-learning was significantly positively impacted by enabling conditions. Yang et al. (2019) researched how China's adoption of e-government services was impacted by enabling conditions. According to the study, enabling circumstances significantly boosted the uptake of e-government services. This suggests that providing a reliable and efficient platform for electronic payments is crucial in encouraging consumer adoption. The weak correlation and non-significant p-value indicate that the linear model and the observed relationship are not statistically robust. The Pearson correlation indicates that the Facilitation Condition can explain only 0.6% of the variability in commuters' readiness to adopt e-payments.

5.5 HM positively influences commuters' readiness to adopt and use e-payments.

According to the statistical analyses, this variable can be attributed to the convenience and ease of use of e-payment methods (Venkatesh et al., 2012). Individuals feel this, as well as a sense of empowerment and control, when they can make transactions quickly and securely online. (Martins et al. 2014) The data results suggest that enhancing user experience and satisfaction with electronic payment systems can increase adoption rates (Kim & Hall, 2019).

Overall, the presence of this variable highlights the importance of considering not just the functional aspects of e-payment systems but also the emotional and psychological factors that influence individuals' attitudes towards using these technologies. This aligns with (Schalekamp et al., 2017), who stated that creating a positive user experience and convenience elicits satisfaction as an added benefit. The utilitarian aspects, like not having to carry cash, contribute to overall quality and user experience. Strong evidence supports the hypothesis that "Hedonic motivation has a positive influence on commuters' readiness to adopt and use e-payments.

5.6 H positively influence commuters' readiness to use e-payments.

The current study confirmed that habit significantly predicted commuters' adoption of e-payment for taxi rides. This suggests that individuals who perceive e-payment as useful are more likely to develop a habit of using it regularly, which in turn increases their likelihood of adopting e-payment for taxi rides. In this research, most participants were actual adopters. These findings (t-value (5.376) and p-value (<.001) indicate that Habit is statistically significant) highlight the importance of habit in driving the behaviour, and are consistent with (Venkatesh et al., 2012). Lastly, it suggests that efforts to promote the habit of using e-payment for taxi rides may be an effective strategy for increasing adoption rates.

There is strong evidence to conclude that Habit has a positive and statistically significant influence on commuters and suggestive that these commuters who already have established habits related to using e-payments (e.g., using contactless cards for everyday purchases) are more likely to develop the intention to adopt e-payment for commuting. Overall, familiarity with digital payment methods and positive past experiences enhance trust and the perception of how simple and easy it is to use e-payments. Akhlaq and Ahmed (2013) positively influence commuters' readiness to use e-payments.

This aligns with MasterCard's findings by Malinga (2017), which state that customers increasingly gravitate towards alternative payment methods that offer greater convenience and flexibility than the cost of their financial transactions. The statistical analysis provides evidence that price value positively influences commuters' intentions to adopt e-payment. This suggests that initiatives promoting e-payment adoption could benefit from highlighting the potential for discounts, cashback, or other rewards to make e-payment more attractive for commuters.

5.7 BI positively correlates with commuters' perceived use of e-payment, and their prior experience with similar technology.

This is the level of fun or satisfaction that comes from using an IT service or product, such as e-payment Venkatesh et al. (2012). It is frequently seen as an internal trigger that compels someone to employ a particular time. The level of satisfaction or fun experienced when using a product or information technology service, such as electronic payments Venkatesh et al. (2012). Notably, other writers, Saber and Souiden (2010), have shown that fun is a key factor of adoption in the context of e-payment adoption. Fun has also been employed in prior research. It is also proven that utility, simplicity of use, security level, and auxiliary facilities affect adoption through enjoyment and motivation (Weniger & Loebbecke, 2011).

All the constructs correlated together indicate the significance level (< 0.001), which indicates that all these constructs under BI correlation were statistically

significant. These findings suggest a consistent and positive attitude towards adopting and promoting electronic payment methods for minibus taxi rides. The "significant at the 0.01 level" notation confirms the robustness of these correlations.

5.8 Conclusion

In conclusion, the findings imply that commuters are more likely to express favourable intentions to embrace e-payment systems if they believe these techniques offer greater value. The statistically significant association showed each independent variable's link to the BI dependent variable. According to our research, people are more likely to embrace cashless payment methods if they think e-payments improve their overall performance, provide enjoyment, assist them emotionally, and make their lives easier. The results of another study, e.g. Patil et al. (2017), are supported by this conclusion. This study highlights the little body of research on consumers' acceptance and adoption of e-payment systems.

CHAPTER 6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

Describe the structure of the chapter.

The research conducted in this study aimed to investigate “A commuters’ perspective on the adoption of e-payment solutions in the minibus-taxi industry.” Several key findings were identified through a comprehensive literature review, data analysis, and interpretation of results.

6.2 Conclusions regarding the factors that could influence commuters' adoption of e-payments in the taxi industry.

A thorough literature analysis examined the factors that may affect commuters' adoption of electronic payments in the taxi business, providing an answer to this study issue. Shezi (2016) also argues that using the same card for several transactions, such as at retail stores, might influence commuters' adoption beyond just offering cashless payment options. The findings suggested that variables like social influence negatively impact commuters' behaviour when adopting e-payment. Social influence, Aydin (2016) states that factors such as peer pressure or societal norms can partially impact an individual's decision to adopt e-payment. According to commuter's data collected, facilitating conditions partially impact adoption, indicating that external factors do not influence their adoption.

This study examined the factors influencing user behavioural intention, specifically focusing on perceived price value, performance expectancy, and habit. The analysis revealed a positive association between all three independent variables and behavioural intention (e.g., customer satisfaction, service adoption, and technology use).

Price Value

A positive beta coefficient of 0.266 indicated a positive relationship between perceived price value and behavioural intention. In simpler terms, as customers perceived more excellent value for the price paid, their behavioural intention increased. The statistical significance of this relationship was confirmed by a p-value of 0.009, which falls well below the commonly accepted alpha level of 0.05. Therefore, the study rejects the null hypothesis that price value has no effect on behavioural intention and concludes that price value has a statistically significant positive impact on the outcome of interest.

Performance Expectancy

The analysis yielded a positive beta coefficient of 0.193, indicating a positive association between performance expectancy and behavioural intention. This means that as users' expectations regarding the performance of a technology (e.g., ease of use, functionality) increased, their behavioural intention also increased. The statistical significance of this relationship was further supported by a p-value of 0.015, which is lower than the alpha level of 0.05. This statistically significant result allows researchers to reject the null hypothesis that performance expectancy has no effect on the dependent variable and conclude that performance expectancy has a statistically significant positive impact on behavioural intention.

Habit

The analysis revealed a strong positive association between habit and behavioural intention, as indicated by a beta coefficient of 0.288. This suggests that as user behaviour becomes more habitual (e.g., through repeated use), the likelihood of them continuing the behaviour (behavioural intention) increases. The highly significant result ($p < 0.01$) allows the researcher to strongly reject the null hypothesis, which states that habit does not affect behavioural intention. Therefore, the study concludes that habit has a statistically significant positive impact on the outcome of interest.

6.3 Conclusions regarding the perceived barriers and opportunities for e-payments in the taxi industry.

Concerning an article on Engineering News, adopting cutting-edge technologies is essential, written by Mabogo (2023), but also acted as a barrier to the taxi industry. Taxi owners could incur the cost of installing technology such as Wi-Fi, tap-and-go machines or even AI cameras. As much as it will benefit all stakeholders as the flow of commuters can be analysed, owners get reports given regular information on taxi performance. Indeed, commuters would be getting excellent value for the price, and their behavioural intention would increase.

Adopting an application that can work as Loop in the taxi industry might be a big climb. The introduction of this application helped commuters avoid having to wait for a minibus taxi that was already full, but the new digital platform quickly connected commuters with empty ones. According to Hendricks (2022a), this kind of partnership requires investments by different taxi associations.

Further research should consider conducting a comparative study across different provinces in South Africa to identify regional differences in the obstacles and facilitators of e-payment adoption. This would provide a more comprehensive understanding of the factors influencing commuters' use of e-payments in transportation.

However, if this study had been conducted in all provinces of South Africa, different barriers and opportunities would have emerged. For example, in more rural provinces with lower levels of smartphone penetration, access to technology may be a bigger obstacle than in urban areas like Gauteng. Additionally, cultural factors or regulatory differences between provinces could also impact the adoption of e-payments in the taxi industry. Exploration of stakeholders' perspectives, such as taxi operators and payment service providers, to better understand the opportunities related to e-payment adoption in the taxi industry.

6.4 Conclusion regarding the benefits or disadvantages of introducing the e-payment method in the taxi industry.

This study identified several factors influencing commuters' adoption of e-payment methods in Gauteng, South Africa. These factors included technological skills, age, educational attainment, and general attitudes towards technology. The research also revealed key disadvantages associated with e-payment adoption in this context. These disadvantages included a lack of trust in e-payment systems, limited access to smartphones and data plans among commuters, and resistance from taxi operators who preferred cash transactions.

Despite these challenges, the study highlighted the potential benefits of e-payment adoption for commuters and taxi operators. For commuters, e-payments could enhance convenience and safety by eliminating the need to carry cash. Performance expectancy regarding the performance of a technology (e.g., ease of use, functionality) increased, and their behavioural intention also increased. This could also improve driver focus on the road, potentially leading to safer journeys. Taxi owners could benefit from e-payments through cost savings and reduced fraud risks. Furthermore, individuals with a positive attitude towards technology and are advantaged in trying new things are more likely to adopt e-payment methods. This indicated that attitudes and beliefs play a significant role in adopting digital technologies. Future research could further explore these factors and their impact on digital technology adoption in various contexts.

6.5 Conclusions regarding the role of trust and the perceived privacy Risk factors of e-payment adoption.

According to the commuters' data received during the survey, trust and perceived privacy risks played pivotal roles in adopting e-payment systems. Enhancing trust while minimising perceived privacy risks was crucial for encouraging users to adopt and consistently use e-payment technologies. Addressing these factors

through robust security protocols, clear communication, and transparent practices significantly impacted the success of e-payment systems.

Building Trust and Mitigating Privacy Concerns

While trust and perceived privacy risks undoubtedly play significant roles in e-payment adoption, these concerns can be addressed through a multi-pronged approach. Transparency, robust security measures, educational initiatives, and adherence to regulations can all build trust and mitigate privacy concerns, ultimately leading to increased adoption rates.

Educational Initiatives and Transparency

Educating commuters about the security features and privacy protections embedded within e-payment systems can positively impact adoption. Increased awareness regarding the handling and protection of personal data can foster a greater sense of trust and reduce perceived privacy risks. The onus lies on the e-payment industry to continually develop and implement educational initiatives that address these concerns. Transparency regarding data practices and adherence to relevant regulations are also crucial in building trust.

Evolving Security Measures

The e-payment industry must commit to continuously improving technology and security measures. This ongoing evolution is essential for building and sustaining user trust over time. The industry can demonstrate its commitment to protecting user data and information by adapting to emerging security and privacy challenges.

6.6 Recommendations

The study focused on three prominent factors influencing adoption to enhance the adoption of e-payment as a payment method for taxi rides. Firstly, it investigated the level of support within the minibus taxi industry for implementing e-payments. Secondly, it clearly articulated the benefits for commuters and taxi operators of adopting the e-payment method. Thirdly, it recommended

developing programs and training to enable commuters, taxi operators, and taxi owners to learn more about e-payment. Additionally, it suggested creating partnerships with technology providers to ensure access, availability, and points of presence whenever commuters wished to pay for their rides. Lastly, the study proposed that the government partner with taxi operators and subsidise them to connect their minibus taxis to the Internet and provide backup technology stations for reliable connectivity.

6.7 Limitations of the research

Several limitations to this study should be acknowledged. Firstly, the sample size was small and may not represent all Gauteng commuters. Additionally, the data collected relied on self-report measures, which may introduce biases. Furthermore, the study limits our ability to draw causal conclusions about the relationship between constructs as it offers insightful information on the variables affecting the adoption of cashless payment systems. The study has several restrictions or limitations, which may be addressed in further research.

- Only the link between independent and dependent constructs is the subject of the investigation.
- The adoption of cashless payment systems is influenced by several factors, which future research might utilise to understand better.
- The research employed Likert scales and structured surveys.
- Future research may combine survey and interview techniques to understand better how commuters feel about the cashless society.
- Citizens in urban and township areas provided the data collection.
- Future research might be done with rural residents to see how they feel about cashless payment methods.
- The study concentrated on the commuters' views and did not incorporate the views of taxi drivers and owners.

6.8 Suggestions for further research

Overall, the study found a significant correlation between ease of use, trust, and security regarding e-payment methods. This unexpected relationship highlights the importance of considering various factors regarding training when technology is introduced to increase adoption. The study also found a significant correlation between commuter attitudes and the benefits of adoption, as products with more benefits may motivate quick and easy adoption by customers. Future research should continue to explore these connections to develop more comprehensive models for predicting and improving the adoption of any technology services.

Additionally, conducting qualitative research, such as interviews or focus groups with commuters who have adopted e-payment technology, could provide valuable insights into their motivations and experiences. This could help uncover any barriers or challenges that may be hindering adoption rates, as well as identify potential strategies for increasing uptake. Furthermore, future research could also explore the impact of demographic factors such as age, income level, and education on e-payment adoption among commuters. Understanding how these variables influence adoption behaviour could help to tailor marketing strategies and incentives to target specific demographic groups more effectively.

Table 6-1 Consistency table: research questions, propositions, data collection and data analysis

RQ #	State Research Question or Objective	Prop/hyp #	State Proposition or Hypothesis	Data collection detail	Data analysis method
1	What are the factors that could influence commuters' adoption of e-payments as a method for taxi rides?	H1.	Performance expectancy has a positive influence on commuters' readiness to use e-payments	Survey Likert statement. 1-15	IBM SPSS 29 analysis
2	What are the benefits or disadvantages of introducing the e-payment method to commuters of the taxi industry?	H2.	Social Influence has a positive influence on commuters' readiness to use e-payments.	Interview guide questions. 1, 2, 3, 4, 5	IBM SPSS 29 analysis

RQ #	State Research Question or Objective	Prop/hyp #	State Proposition or Hypothesis	Data collection detail	Data analysis method
3	What are the Perceived Barriers and Opportunities for e-payments in the taxi industry?	H3.	Facilitating conditions has a positive influence on commuters' readiness to adopt and use e-payments	Interview guide questions. 3, 4, 5, 6, 7	IBM SPSS 29 analysis
4	What is the role of trust and the perceived privacy risk factors for commuters in e-payment adoption?	H4.	Hedonic motivation has a positive influence on commuters' readiness to adopt and use e-payments	Survey Likert statement. 1-15	Distribution fitting algorithm or correspondence analysis
5	What factors impact behavioural intention in the readiness to use e-payment?	H5	Behavioural Intention has a positive correlation with commuters perceived use of e-payment and their prior experience with similar technology.	Survey Likert statement. 1-15	Distribution fitting algorithm or correspondence analysis

REFERENCES

Agarwal, N. K. (2011). Verifying survey items for construct validity: A two-stage sorting procedure for questionnaire design in information behavior research. Proceedings of the American Society for Information Science and Technology, 48(1), 1–8. https://doi.org/10.1002/meet.2011.14504801166

A.M. Baabdullah et al. Baabdullah, A. M., Alalwan, A. A., Rana, N. P., Kizgin, H., & Patil, P. (2019). Consumer use of mobile banking (M-Banking) in Saudi Arabia: Towards an integrated model. International Journal of Information Management, 44, 38–52. https://doi.org/10.1016/j.ijinfomgt.2018.09.002

ARTEAGA, G. (2023, February 26). Understanding Construct Validity: Definition, Types, and Examples - TestSiteForMe. Www.testsiteforme.com. https://www.testsiteforme.com/en/what-is-construct-validity/

Au, Y. A., & Kauffman, R. J. (2008). The economics of mobile payments: Understanding stakeholder issues for an emerging financial technology application. Electronic commerce research and applications, 7(2), 141-164.

Bick, G. (2019). "Uber SA: Disruption of the local taxi industry?", , Vol. 9 No. 2. https://doi.org/10.1108/EEMCS-05-2019-0099

Biduski, D., Bellei, E. A., Rodriguez, J. P. M., Zaina, L. A. M.,& De Marchi, A. C. B. (2020). Assessing long-term user experience on a mobile health application through an in-app embedded conversation-based questionnaire. Comput. Hum. Behav. 104, 106169. Doi: 10.1016/j.chb.2019.106169

Bhardwaj, P. (2019). Types of sampling in research. Journal of the Practice of Cardiovascular Sciences, 5(3), 157.

Bhattacherjee, A. (2012). Social science research: Principles, methods, and practices (2nd ed.). Anol Bhattacherjee.

Bridge Taxi Finance. (2021). The future of the SA taxi industry. Bridge Taxi Finance. https://www.bridgetaxifinance.co.za/taxi-the-future/

Blythe, PT, (2004). Improving public transport ticketing through smart cards. Proc. Inst. Civ.Eng. - Munic. Eng. 157, 47–54. doi:10.1680/muen.2004.157.1.47

Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quiñonez, H. R., & Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioral research: a primer. Frontiers in public health, 6, 149.

Chakwizira, J. (2022). Stretching resilience and adaptive transport systems capacity in South Africa: Imperfect or perfect attempts at closing COVID-19 policy and planning emergent gaps. Transport Policy, Volume 125, September 2022, Pages 127-150. https://doi.org/10.1016/j.tranpol.2022.06.003

Chen, L. Y., & Chen, Y.-J. (2021). A study of the behavior of line today in Taiwan based on the UTAUT2 Model. Revista de Administração de Empresas, 61, e2020. https://doi.org/10.1590/S0034-759020210607

Chiu, I. H. (2017). A new era in fintech payment innovations? A perspective from the institutions and regulation of payment systems. Law, Innovation and Technology, 9(2), 190–234.

Cokayne, R. (2009, September 9). *Digicore to roll out new fare collection system*. IOL; The Star (Business Report). https://www.iol.co.za/business-report/companies/digicore-to-roll-out-new-fare-collection-system-707196

Consultancy African Intelligence (2013) 'The minibus taxi industry in South Africa: A servant for the urban poor?', pp. 1–6. Available at: http://www.polity.org.za/article/the-minibus-taxi-industry-in-south-africa-a-servant-for-the-urban-poor-2013

Couper, M. P. (2017). New developments in survey data collection. Annual review of sociology, 43, 121-145.

Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research*. p. 58. SAGE.

Dahlberg, T., Guo, J., & Ondrus, J. (2015). A critical review of mobile payment research. *Electronic Commerce Research and Applications*, *14*(5), 265–284. Science Direct. https://doi.org/10.1016/j.elerap.2015.07.006

Dar, N.A. (2012). Awareness of electronic banking in Pakistan. In Proceedings of 2nd International Conference on Business Management. p.1-27

Davis, N. (2016, January 19). *What is the fourth industrial revolution?* World Economic Forum. https://www.weforum.org/agenda/2016/01/what-is-the-fourth-industrial-revolution/

Derrick. (2011, September 23). *Absa and DigiCore unveil public transport sector solution*. Mybroadband.co.za. https://companies.mybroadband.co.za/blog/2011/09/23/absa-and-digicore-unveil-public-transport-sector-solution/

DeVellis, R. F. (2016). Scale Development: Theory and Applications (4th ed.). Sage Publications.

Dizon, G. (2021). Affordances and constraints of intelligent personal assistants for second-language learning. RELC J. 00336882211020548. Doi: 10.1177/00336882211020548Dospinescu, O. (2012). E-Wallet. A New Technical Approach. Acta U. Danubius. 8(5), 84-94

Duane, A. et al., (2011). Trusting M-Payments – Realising the Potential of Smart Phones for M-Commerce: A Conceptual Model & Survey of Consumers in Ireland. Thirty Second International Conference on Information Systems, pp.1 – 18.

Dube, L. T. (2019). The impact of self-service technologies on perceptions of commuter service quality in a Business School in South Africa (Doctoral dissertation).

Dugard, J. (2001). From low intensity war to mafia war: Taxi violence in South Africa (1987–2000). <http://www.csvr.org.za/wits/papers/papvtp4.htm> Retrieved. 06.15.

Daştan, I. & Gürler, C. (2016). Factors affecting the adoption of mobile payment systems: An empirical analysis. EMAJ: Emerging Markets Journal., 6(1), 17-24,

Du Toit, A., & Neves, D. (2014). The government of poverty and the arts of survival: mobile and recombinant strategies at the margins of the South African economy. The Journal of Peasant Studies, 41(5), 833-853.

Dwyer, M. (2023). The impact of e-payments on transaction processing efficiency: A global perspective. Journal of Financial Technology, 12(2), 123–140.

Dwivedi, Y. K., Shareef, M. A., Simintiras, A. C., Lal, B., & Weerakkody, V. (2016). A generalised adoption model for services: A cross-country comparison of mobile health (m-health). Government Information Quarterly, 33(1), 174–187. https://doi.org/10.1016/j.giq.2015.06.003

Elliott, J. (2005). Using narrative in social research: Qualitative and quantitative approaches. Using narrative in social research, 1-232.

Fife-Schaw, C. (2006). Levels of measurement. Research methods in psychology, pp. 3, 50–63.

Fobosi, S. C. (2019). 'Employment Practices within the Minibus Taxi Industry in Johannesburg: A Study of Precariousness of Jobs in South Africa', African Sociological 68 Review, 23, pp. 99–119.

Gogoski, R. (2012). Payment systems in economy- Present and future tendencies. Procedia. Soc. Behav. Sci. 44, 436–445.[2]

Govender, R. & Allopi, D. (2007). Analysis of the Scientific Aspects Related to Minibus Taxi Collisions. SATC 2007,161-167.

Hensher, DA, (2017). Future bus transport contracts under a MaaS regime in the digital age: Are they likely to change? Transportation Research Part A: Policy and Practice, Volume 98, pp. 86-96

Indrayadi, T. (2020). How to Select Participants in My Research Study: Sampling in Quasi-Experiment Research. Sampling in Quasi-Experiment Research (April 20, 2021). iJournals: International Journal of Social Relevance & Concern, 8(5).

Jakubauskas, G, (2006). Improvement of urban commuter transport ticketing systems by deploying intelligent transport systems. Transport 21, 252-259.doi:10.1080/16484142.2006.9638075

Jones, C., Brown, D., & Garcia, E. (2022). Strengthening internal controls in the digital age: The role of e-payments and automated transaction monitoring. Government Finance Review, 58(4), 56–72.

Kaur, K., & Pathak, A. (2015). E-payment system on e-commerce in India. International Journal of Engineering Research and Applications, 5(2), 79–87.

Khan, S., and Rabbani, M. R. (2021). Artificial intelligence and NLP-based chatbot for Islamic banking and finance. Int. J. Inform. Retriev. Res. 11, 65–77. Doi: 10.4018/IJIRR.2021070105Khosa, M. (1994). Accumulation and labour relations in the taxi industry. Transformation, 24, 5–71.

Koigi, B, (2016). South African Taxi Association to launch Electronic Fare Collection System. Africa Bus. Communities. Accessed on 30th Mar 2023 at: https://africabusinesscommunities.com/news/South-africa-taxi-association-to-launch-electronic-fare-collection-system.html

Kreyer, N., Pousttchi, K., & Turowski, K. (2002). Standardized Payment Procedures as Key Enabling Factor for Mobile Commerce. *E-Commerce and Web Technologies*, *2455*, 400–409. https://doi.org/10.1007/3-540-45705-4_41

Krueger, M. (2019). The Future of M-payments – Business Options and Policy Issues. *The Future of M-Payments - Business Options and Policy Issues*.

Learn what a card payment is and how to accept one. (n.d.). SumUp - a Better Way to Get Paid. Retrieved April 15, 2023, from https://www.sumup.com/en-ie/card-payments/

Liao, Z. (2001). Taxi dispatching via global positioning systems. IEEE Transactions on Engineering Management, 48(3), 342–347.

Liébana-Cabanillas, F., & Lara-Rubio, J. (2017). Predictive and explanatory modeling regarding adoption of mobile payment systems. Technological Forecasting and Social Change, 120, 32–40. https://doi.org/10.1016/j.techfore.2017.04.002

Liébana-Cabanillas, F., Sánchez-Fernández, J. and Muñoz-Leiva, F. (2014a). 'Antecedents of the adoption of the new mobile payment systems: The moderating effect of age', Computers in Human Behavior, 35, pp. 464–478. doi: 10.1016/j.chb.2014.03.022.

Luthuli, L. (2020). Factors influencing payment convenience in the mini-bus taxi industry in Cape Town, South Africa. *Doctoral Dissertation*. http://etd.cput.ac.za/handle/20.500.11838/3441

Makongoza, M., & Nduna, M. (2017). Awareness and Rejection Accounts of Intimate Partner Violence by Young Women in Minibus, Johannesburg, South Africa. *Journal of Interpersonal Violence*, *36*(1-2), 088626051772641. *https://doi.org/10.1177/0886260517726413*

Malinga, S, (2016). Gauteng intros cashless payment for taxis. ITWeb. Accessed on 30th Mar. 2023 at: https://www.itweb.co.za/content/nLPp6VMrBpeMDKQz.

Masinde, J, (2016). Nairobi's colorful but chaotic local bus system is resisting being digitized. Quartz Africa. Accessed on 4th April. 2023 at: https://www.thelocalafricanews.com/nairobis-colorful-chaotic-local-bus-system-resisting-digitized/

McCaul, C. (1990). No easy ride: The rise and future of the black taxi industry. South African Institute of Race Relations.

Merriam, S. B., & Tisdell, E. J. (2016). Qualitative research: A guide to design and implementation (4th ed.). Jossey-Bass, Cop.

Mhlanga, D. (2022). The role of financial inclusion and FinTech in addressing climate-related challenges in the industry 4.0: Lessons for sustainable development goals. Frontiers in Climate, 4, 949178.

Mills, L., Abdulla, E., & Cribbie, R. A. (2010). Quantitative methodology research: Is it on psychologists' reading Lists? Tutorials in Quantitative Methods for Psychology, 6(2), 52–60. https://doi.org/10.20982/tqmp.06.2.p052

Mmadi, MM, (2013). Mobile workplace: Work conditions and family life of taxi drivers. Pretoria: University of Pretoria

Mndebele, M., & Cabe, M. (2019, December 20). *How South Africa's minibus taxi industry exploits its drivers.* Mail & Guardian. https://mg.co.za/article/2019-12-20-00-how-south-africas-minibus-taxi-industry-exploits-its-drivers/

Musviba, N. (2014, February 21). *Tax Avoidance – Differences between Tax Avoidance and Tax Evasion*. South African Tax Guide. https://www.sataxguide.co.za/tax-avoidance-differences-between-tax-avoidance-and-tax-evasion/

Mthimkhulu, N., (2017). Southern African solutions to public transport challenges. 36th Southern African Transport Conference (SATC 2017) ISBN Number: 978-1-920017-73-6.

Neumann, A., & Nagel, K. (2011). A paratransit-inspired evolutionary process for public transit network design. Working paper 11-15, Transport Systems Planning and Transport Telematics, Technical University of Berlin.

Nzaro, N. M. (2014). Assessing the Role of Electronic Payment Systems in Financial Institutions. A Case of a Savings Banking Zimbabwe. Global Journal of Management and Business Research, 14(2).

Ondrus, J and Pigneur, Y, (2006). Towards a holistic analysis of mobile payments: A multiple perspectives approach. Electron. Commer. Res. Appl. 5, 246-257. Doi: 10.1016/j.elerap.2005.09.003

Pham, T.T.T. & Ho, J.C., (2015). The effects of product-related, personal-related factors and attractiveness of alternatives on consumer adoption of NFC-based mobile payments. Technology in Society, 43, pp.159 – 172

Pirie, G. H. (1992b). Travelling under Apartheid. In D. M. Smith (Ed.), The Apartheid city and beyond: Urbanization and social change in South Africa. Routledge.

Posen, H. A. (2015). Ridesharing in the sharing economy: Should regulators impose Uber regulations on Uber. Iowa L. Rev., 101,

Putri, D.A. (2018). Analyzing factors influencing continuance intention of e-payment adoption using modified UTAUT 2 model. in IEEE 6th International Conference on Information and Communication Technology (ICoICT), 167-173,

Randall, L. A. E. (2019). Coffins on wheels: A bioethical study of work conditions, driver behaviour and road safety in the Johannesburg minibus taxi industry (Doctoral dissertation, University of the Witwatersrand, Faculty of Health Sciences).

Rayle, L., Shaheen, S., Chan, N., Dai, D., & Cervero, R. (2014). Apps-Based On-Demand Ride Services: Comparing Taxi and Ridesourcing Trips and User Characteristics in San Francisco, (August).

Republic of Kenya (2009). Integrated national transport policy: Moving a working nation. Report by the Ministry of Transport. Nairobi.

Ribbens, H., Botha, G.J. and Khumalo, S.G. (2000). Strategies to Reduce Road Casualties in Public Commuter Transport Vehicles in South Africa. SATC 2000

Roodbol, A. (2021, August 30). *Taxi industry part of discussions on public transport and e-mobility*. ESI Africa. https://www.esi-africa.com/industry-sectors/smart-technologies/taxi-industry-part-of-discussions-on-public-transport-and-e-mobility/

Rogov, M., & Rozenblat, C. (2018). Urban resilience discourse analysis: Towards a multi-level approach to cities. *Sustainability, 10 (12*), 4431. https://doi.org/10.3390/su10124431

Saruchera, F., & Mpunzi, S. (2023). Digital capital and food agricultural SMEs: Examining the effects on SME performance, inequalities, and government role. Cogent Business & Management, 10(1). https://doi.org/10.1080/23311975.2023.2191304

Schalekamp, H., & Behrens, R. (2010). Engaging paratransit on public transport reform initiatives in South Africa: A critique of policy and an investigation of

appropriate engagement approaches. *Research in Transportation Economics*, *29*(1), 371–378. ScienceDirect. *https://doi.org/10.1016/j.retrec.2010.07.04*

Schalekamp, H, McLaren, M and Behrens, R, (2017). Exploring cashless fare collection in the context of urban public transport reform in South Africa, in 36th Southern African Transport Conference. Pretoria

Seftel, L. (2021). Continuity and change in the South African minibus taxi industry.

Semuju, J., Kounassi, D. A., & Ullmann, L. (2018, November 27). KENYA'S PUBLIC TRANSPORT TO START USING CASHLESS PAYMENT SYSTEMS. movinon lab, pp. 2-5. Retrieved from https://movinon-lab.michelin.com/lab/s/article/Kenya-s-public-Transport-to-Start-Using-Cashless-Payment-Systems-1543270652234?language=en_US.

Shaheen, S., & Chan, N. (2015). MOBILITY AND THE SHARING ECONOMY: IMPACTS SYNOPSIS SHARED MOBILITY DEFINITIONS AND IMPACTS ▪ SPECIAL EDITION ▪ SPRING 2015. http://innovativemobility.org/wp-content/uploads/2015/07/Innovative-Mobility-Industry-Outlook_SM-Spring-2015.pdf

Shezi, L. (2016). No more cash in taxis: Gauteng launches first-in-SA payment system. Hypertext. Accessed on 30th Mar. 2023 at: https://www.htxt.co.za/2016/10/17/gauteng-cashless-taxi-payment.

Shinar, D. (1998). Aggressive Driving: The Contribution of the Drivers and the Situation. Transportation Research Part F: Traffic Psychology and Behavior, 1(2), 137-160

Shorten, A., & Moorley, C. (2014). Selecting the sample. Evidence-based nursing, 17(2), 32-33.

Slade, E.L., Williams, M.D., Dwivedi, Y.K. (2013). Mobile payment adoption: Classification and review of the extant literature. Mark. Rev. 13(2), 167–190.

Minibus, Johannesburg | South African History Online. (2011, March 16). Www.sahistory.org.za. https://www.sahistory.org.za/place/Minibus-johannesburg

Smith, A., & Lee, B. (2023). The impact of e-payments on government financial management: A case study approach. Journal of Public Budgeting, Accounting & Financial Management, 12(2), 1-24.pen_spark

Stats SA. (2020). Transport Series Volume III: Profile of the non-motorised transport users, in-depth analysis of the National Household Travel Survey data 2020. Pretoria: Statistics South Africa. Retrieved April 13, 2023, from http://www.statssa.gov.za/publications/Report-71-03-01/Report-71-03-012013.pdf

Šumak, B., & Šorgo, A. (2016). The acceptance and use of interactive whiteboards among teachers: differences in UTAUT determinants between pre-and post-adopters. Comput. Hum. Behav. 64, 602–620. doi: 10.1016/j.chb.2016.07.037Tap & Go® - Fast & Secure Contactless Payments | Mastercard. (n.d.). Www.mastercard.co.za. Retrieved April 15, 2023, from https://www.mastercard.co.za/en-za/personal/get-started/contactless-payments/contactless.html.

Tatum, M. (2023, April 7). What Is Cash Handling? (with pictures). Smart Capital Mind. https://www.smartcapitalmind.com/what-is-cash-handling.htm

Teoh, S. H., Chong, S. C., Lin, B., & Chua, A. H. (2013). E-payment adoption in developing countries: A review of literature. *Proceedings of the 10th International Conference on Electronic Commerce* (pp. 113-122). IEEE.

Terblanche, B. (2006, April 19). *Roaring taxi industry beat its own path*. AllAfrica; Business Day. https://allafrica.com/stories/200604190023.htm

Township Economies – Creating Growth Entrepreneurs. (n.d.). Township Economies. Retrieved April 15, 2023, from *https://townshipeconomies.co.za/#:~:text=These%20are%20businesses%20and%20markets*

Tsele, L. (2017) ‘What will it take to disrupt SA’s public taxi industry?’, SME South Africa, pp. 1–8. Available at: https://www.smesouthafrica.co.za/17264/Tech-To-Disrupt-Taxi-Industry/.

Trochim, W. M. (2006). The research methods knowledge base. (2nd eds.). Cincinnati: Atomic Dog Publishing.

van Houwelingen, C. T., Barakat, A., Best, R., Boot, W. R., Charness, N., & Kort, H. S. (2015). Dutch nurses’ willingness to use home telehealth: Implications for practice and education. Journal of Gerontological Nursing, 41(4), 47-56.

Van Zyl, J. E. (2009). ‘Minibus Taxis As Part of a Sustainable Public Transport System in South Africa’, Southern African Transport Conference, (July), pp. 642–646.

Veloso, M., Phithakkitnukoon, S., & Bento, C. (2011). Urban Mobility Study using Taxi Traces. Proceedings of the 2011 International Workshop on Trajectory Data Mining and Analysis TDMA 11 (2011). 23–30. http://doi.org/10.1145/2030080.2030086

Venkatesh, V., & Zhang, X. (2010). Unified theory of acceptance and use of technology: U.S.vs. China. Journal of Global Information Technology Management, 13(1), 5–27.

Venkatesh, V., Thong, J. Y., & Xu, X. (2012a). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. MIS Quarterly, 36(1), 157–178.

Venkatesh, V., Thong, J. Y., & Xu, X. (2012b). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. MIS Quarterly, 157–178.

Venter, I., (2018). South Africa’s taxi industry gets set for electronic fare revolution. Eng. News. Accessed on 30th Feb.

Wasserman, H. (2019, May 18). The SA minibus taxi industry is massive – here’s everything you need to know. Business Insider SA, pp. 12-14. Retrieved from https://www.news24.com/news24/bi-archive/how-big-is-south-african-taxi-industry-2019-5.

Westat, J., (2002). The 2002 User-Friendly Handbook for Project Evaluation, The National Science Foundation.

Woolf, S. E. (2007). Taxi hand signs: Documenting South African taxi hand signs as a language for blind and sighted people. Ada enup cc, South Africa

World Bank. (2022, September 29). Transport: overview. Retrieved April 14, 2023, from The World Bank: https://www.worldbank.org/en/topic/transport/overview

World Bank. (2022). DEVELOPMENT COMMITTEE (Joint Ministerial Committee of the Boards of Governors of the Bank and the Fund on the Transfer of Real Resources to Developing Countries). https://www.devcommittee.org/content/dam/sites/devcommittee/doc/documents/mgr/Final%20on%20Digitalization_DC2022-0002.pdf. Retrieved June 30, 2024

Writer, S. (2012, July 3). Taxis fitted with e-fare systems. ITWeb. https://www.itweb.co.za/content/mraYAyMo6nB7J38N

Wynn, D., & Williams, C. (2012). Principles for Conducting Critical Realist Case Study Research in Information Systems. MIS Quarterly, 36(3), 787. https://doi.org/10.2307/41703481

Yuerong Zhang & Maria Kamargianni (2023) A review on the factors influencing the adoption of new mobility technologies and services: autonomous vehicle, drone, micro mobility and mobility as a service, Transport Reviews, 43:3, 407-429, DOI: 10.1080/01441647.2022.2119297

APPENDIX A: PARTICIPANT INFORMATION SHEET

Consent Form

Title of project: A commuters' perspective on the adoption of e-payment solutions in the minibus-taxi industry)."

Name of researcher: Frank Ramabale

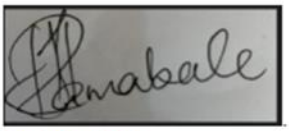
I, ……., agree to participate in this research project.

I agree to the following:

(Please circle the relevant options below)

The research study was explained to me. I understand what this study is about.	YES	NO
I understand that I can volunteer to take part in the study	YES	NO
I agree that direct quotations from my interview/focus group/other activity may be used by the researcher in their research report/ manuscript/book chapter	YES	NO
I agree that my participation will remain anonymous (my name or other identifying data will not be used by the researcher in their research report/manuscript/book chapter)	YES	NO
I agree that other researchers may use the information I provide in my interview/focus group/other activity (depending on their own ethics clearance being obtained) but my name and any personal information will not be used or passed on	YES	NO

…… (signature)
…… (name of participant)
…… (date)



…(signature)
Frank Ramabale…… (name of researcher/person seeking consent)
…12/08/2023…… (date)

APPENDIX B: PARTICIPANT AGREEMENT FORM

Dear Sir / Madam

My name is Frank Ramabale. I am a master's student in Digital Business School at the University of the Witwatersrand, Johannesburg. My supervisor is Ms Ayanda Magida. I am conducting a research study about e-payment taxi rides. The study title is "A commuters' perspective on the adoption of e-payment solutions in the minibus-taxi industry)."

I am inviting you to answer a questionnaire. If you decide to participate, your participation in this research study will last about 15 minutes. The research activity will take place online at your leisure.

With your permission, I would like you to complete the questionnaire password-protected. The data will be stored in a password-protected database for 5 years and/or deleted after 6 years. Only the researcher will have access to the data.

During the research activity, I will need to ask for personal information about you, including Age, Gender, and Residential Area.

The questionnaire will be confidential and anonymous. When I share the research study's results, I will not include your name or anything else that could identify you. With your permission, other researchers may use the data collected from this study, but your name and personal information will not be used or passed on.

If you decide to participate in the research study, it should be because you want to volunteer. You do not have to take part. You can stop being in the study at any time. You do not have to answer any questions if you do not want to. You will not get any direct benefits if you choose to join the research study. You will not lose any services, benefits, or rights you would usually have if you decided not to join. Taking part in the research study will not cost you anything. You will not be paid for being in this research study.

Please indicate your acceptance or refusal to complete the survey by ticking on the options below.

- I agree to continue with the survey
- No, I do not agree to continue with the survey

The risks for this research study are minimal, no more than what happens in everyday life / some of the questions asked may make you feel sad or upset. If this happens, you do not have to continue answering the questionnaire.

This research study will be written up as a research report, which will be available on the university library website. I will be happy to send you a summary of this report if you would like it.

If you have any questions during or after this research study, feel free to contact me or my supervisor at the details listed below. If you have any concerns or complaints about the ethical procedures of this research study, In that case, you are welcome to contact the University Human Research Ethics Committee (Non-Medical) by telephone at +27(0) 11 717 1408 or email at hrecnon-medical@wits.ac.za.

Yours sincerely,

Researcher:
Frank Ramabale, 2520763@students.wits.ac.za

Supervisor:
Dr. Ayanda Magida, ayanda.magida@wits.ac.za

APPENDIX C: RESEARCH INSTRUMENT

Questions						
Interaction Experience Question						
Have you used any form of e-payment before?	Yes		No			
Are you aware of the availability of e-payment options for taxi rides in your area?	Yes		No	Not Sure		
Do you find that taxi drivers in your area readily accept e-payment methods?	Yes		No	Not sure		
Would you be open to educational materials or training sessions on how to use e-payment methods for taxi rides?	Yes		No			
Do you travel using Minibus Taxi?	Never		Seldom	Sometimes	Often	Always
What do you Minibus Taxi travel for?	Going to work		Going to school	Going to shops	Visiting friends/family	Going on vacation
What else do you use your Minibus Taxi for	Going to funerals		Going clubbing	Going to church		
Demographic Information						
Gender	Male		Female	Other	Prefer not to say	
Age	18-24		25-34	35-44	45-54	55 or above
Gauteng	Johannesburg		Tshwane	Ekurhuleni	Sedibeng	Mogale
Level of Education	Secondary Education		Matric / Certificate	Diploma	Degree	Honours/ Doctorate
Employment Status	Part-Time		Apprentice/ Learnership	Contract/ Temporary	Self-employed	Formally Employed
	1= Strongly Disagree		**2= Disagree**	**3= Neither Agree or Disagree**	**4= Agree**	**5= Strongly Agree**
Section 2: **Performance Expectancy:** Please indicate your level of agreement with the following statements:						
2.1. Using electronic payment methods provided an efficient way paying for my Minibus Taxi rides.						
2.2 The electronic payment method						

provided an accurate information pertaining my minibus taxis ride transactions					
2.3 Using the electronic payment methods enabled me to accomplish quicker way to pay for minibus taxi fare.					
Section 3: **Social Influence** Please indicate your level of agreement with the following statements:					
3.1. I am influenced by family members and friends to use electronic payment methods.					
3.2. People whose opinions I value encourage me to use electronic payment methods for taxi rides.					
3.3. The use of electronic payment methods for taxi rides is prevalent among my social circles.					
Section 4: **Facilitation Conditions** Please indicate your level of agreement with the following statements:					
4.1. It is easy to access the necessary technology to use electronic payment methods for taxi fare.					
4.2. My internet connection is reliable to do electronic payments as I pay for Taxi rides.					
4.3. Already merchants and vendors in my area readily accept electronic payment methods.					
4. I own a smartphone or device capable of making e-payments for taxi rides.					

Section 5: **Hedonic Motivation** Please indicate your level of agreement with the following statements:					
1. Paying for taxi rides using electronic payment methods is enjoyable and fun.					
2. Using electronic payments for taxi rides is useful to my daily life as I don't have to carry cash.					
3. Electronic payment methods enhance the overall quality of taxi rides through e-payment features					
4. I feel excited and a sense of satisfaction that I don't have to carry cash to pay for taxi rides but use electronic payment method					
Section 6: **Price Value** Please indicate your level of agreement with the following statements:					
1. Electronic payment methods offer cost savings compared to traditional payment methods.					
2. The security benefits of using electronic payment methods for taxi rides outweigh any associated fees or charges.					
3. I find the transaction fees associated with electronic payment methods reasonable.					
4. Having loyalty programs or discounts offered for using by e-payment methods for taxi rides is more appealing to me					
Section 7: **Habit** Please indicate your level of					

agreement with the following statements:					
1. I am accustomed to using electronic payment methods regularly.					
2. Electronic payment methods have become a daily experience as I use them for different purposes, such as retail purchases or bill payments?					
3. I automatically choose electronic payment methods without much thought.					
4. I find it difficult to switch back to traditional payment methods due to my habit of using electronic payments.					
Section 8: **Behavioural Intentions** Please indicate your level of agreement with the following statements:					
1. I intend to continue using electronic payment methods in the future even for taxi rides.					
2. I would recommend paying for taxi rides through electronic payment methods to others.					
3. I see myself using electronic payment methods for a wide range of transactions.					
4. I am likely to explore and adopt new electronic payment methods when they become available.					

APPENDIX D: PARTICIPANT AGREEMENT FORM

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg

Wits Business School

Wits Business School Ethics Committee
Constituted under the University Human Research Ethics Committee (Non-Medical)

Ethics Clearance Certificate

Ethics protocol number: WBS/DB2520763/351

This certificate is only valid with a legitimate ethics protocol number and signed by the Researcher (below).
This certificate is only valid if permission has been granted by the Registrar's Office of Wits University.

Project title	A commuters' perspective on the adoption of e-payment solutions in the minibus-taxi industry
Investigator / Researcher	Mr Frank Ramabale
Nature of Project	MM (Digital Business)
Decision of the Committee	Approved, provided stakeholders and participants are guaranteed anonymity and confidentiality.
Issue Date of Certificate	9/11/2023
Expiry date	Date of submission of the project / research report
Chairperson	Dr Pius Oba ☎ +27 11 717 3976 +27 82 733 6587 ✉ pius.oba@wits.ac.za

APPENDIX E: VARIOUS ANALYSIS TABLES AND CHARTS

Descriptive Statistics

	Mean	Std. Deviation	N
PerformanceExpectation	3.8547	1.02208	195
SocialInfluence	3.3368	.97506	195
HedonicMotication	3.8244	.90935	195
PriceValue	3.7205	.69523	195
Habit	4.0628	.93966	195
BehaviouralIntentions	4.0218	.86295	195

Correlations

		PerformanceExpectation	SocialInfluence	HedonicMotication	PriceValue	Habit	BehaviouralIntentions
PerformanceExpectation	Pearson Correlation	1	.577**	.554**	.320**	.404**	.430**
	Sig. (2-tailed)		<,001	<,001	<,001	<,001	<,001
	N	195	195	195	195	195	195
SocialInfluence	Pearson Correlation	.577**	1	.438**	.380**	.470**	.327**
	Sig. (2-tailed)	<,001		<,001	<,001	<,001	<,001
	N	195	195	195	195	195	195
HedonicMotication	Pearson Correlation	.554**	.438**	1	.467**	.466**	.646**
	Sig. (2-tailed)	<,001	<,001		<,001	<,001	<,001
	N	195	195	195	195	195	195
PriceValue	Pearson Correlation	.320**	.380**	.467**	1	.362**	.415**
	Sig. (2-tailed)	<,001	<,001	<,001		<,001	<,001
	N	195	195	195	195	195	195
Habit	Pearson Correlation	.404**	.470**	.466**	.362**	1	.519**
	Sig. (2-tailed)	<,001	<,001	<,001	<,001		<,001
	N	195	195	195	195	195	195
BehaviouralIntentions	Pearson Correlation	.430**	.327**	.646**	.415**	.519**	1
	Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	
	N	195	195	195	195	195	195

**. Correlation is significant at the 0.01 level (2-tailed).

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-.538	1.030		-.522	.602
	Performance_Expetancy	.311	.077	.261	4.012	<,001
	Social_Influence	.090	.192	.028	.467	.641
	Facilitation_Conditions	.193	.161	.069	1.197	.233
	Habit	.313	.058	.341	5.376	<,001
	PriceValue	.237	.078	.191	3.042	.003

a. Dependent Variable: BehaviouralIntentions

Reliability Statistics

Cronbach's Alpha	N of Items
.906	26

Component Matrix[a]

	Component 1	Component 2	Component 3
Facilitation_Conditions	.265	-.337	.758
Social_Influence	.340	.484	.426
Hedonic_Motivation	.618	.246	.037
Habit	.549	-.490	-.240
Price_Value	.540	.541	-.248
Performance_Expectancy	.591	-.129	.179
Behavioural_Intention	.674	-.258	-.310

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Rotated Component Matrix[a]

	Component		
	1	2	3
Facilitation_Conditions	.078	.003	.867
Social_Influence	-.195	.634	.303
Hedonic_Motivation	.295	.589	.097
Habit	.769	-.042	.080
Price_Value	.188	.729	-.282
Performance_Expectancy	.429	.305	.348
Behavioural_Intention	.757	.205	-.033

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 4 iterations.

Component Matrix[a]

	Component					
	1	2	3	4	5	6
Section 2: Performance Expectancy - Please indicate your level of agreement with the following statements: 2.1. Using electronic payment methods provides an efficient way paying for my minibus Taxi rides	.639	.150	.352	-.197	-.013	.048
2.2. The electronic payment method would provide an accurate information pertaining my minibus Taxi ride transactions	.552	.074	.493	-.206	.167	-.242
2.3. Paying with an electronic payment method improves my overall experience paying for minibus Taxi ride.	.671	.162	.334	-.083	.147	-.035
Section 3: Social Influence - Please indicate your level of agreement with the following statements:	.376	.485	.273	.050	.281	.019
3.2. People whose opinions I value encourage me to use electronic payment methods for minibus Taxi rides.	.468	.260	.110	.258	.301	.463
3.3. I am more likely to use electronic payment methods for minibus Taxi rides if others around me are using them.	.636	.134	.457	.026	-.059	-.144
Section 4: Facilitation Conditions - Please indicate your level of agreement with the following statements: 4.1. It is easy to access the necessary technology to use electronic payment methods for minibus Taxi fare	.490	-.207	.218	-.322	.333	.140
4.2. My internet connection is reliable to do electronic payments when I pay for minibus Taxi rides.	.376	-.164	-.147	-.535	.408	.072
4.3. I own a smartphone or device capable of making e-payments for minibus Taxi rides.	.539	.364	-.063	-.191	-.215	-.295
4.4. There are barriers related to technology access that might hinder my adoption of e-payments for minibus Taxi rides	-.166	.173	.468	.268	-.286	.481
Section 5: Hedonic Motivation - Please indicate	.662	-.262	.018	-.174	-.357	.076

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Social_Influence	Between Groups	.613	8	.077	.971	.460
	Within Groups	14.667	186	.079		
	Total	15.280	194			
Facilitation_Conditions	Between Groups	.639	8	.080	.822	.584
	Within Groups	18.058	186	.097		
	Total	18.697	194			
Hedonic_Motivation	Between Groups	10.864	8	1.358	1.689	.103
	Within Groups	149.557	186	.804		
	Total	160.422	194			
Habit	Between Groups	9.125	8	1.141	6.348	<,001
	Within Groups	33.420	186	.180		
	Total	42.545	194			
Price_Value	Between Groups	2.479	8	.310	2.992	.004
	Within Groups	19.266	186	.104		
	Total	21.745	194			
Performance_Expectancy	Between Groups	3.903	8	.488	2.820	.006
	Within Groups	32.174	186	.173		
	Total	36.076	194			