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FACTORS INFLUENCING THE ADOPTION OF INFORMATION TECHNOLOGY SYSTEMS IN MICRO ENTERPRISE (MES) IN TRADE SECTOR

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Degree of Master of Business Administration in Information Technology

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Dissertation submitted in partial fulfillment of the requirements for the Degree Master of Business Administration in Information Technology.

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Declaration

I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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(Signature of the candidate) Date: 22-08-2024

The above candidate has carried out research for the Masters thesis under my supervision.

…….. 22/08/2024

Dr. R. M. S. Rathnayake

(Supervisor Name) Date

Signature of the Supervisor

…… ……..

(Co-supervisor Name) Date

Signature of the Co-Supervisor

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Abstract

This quantitative research study explores the factors influencing the adoption of information technology (IT) systems in Micro Enterprises (MEs) operating within the trade sector. The study focuses on the independent variables of Technical Expertise, Behavioral Control, Perceived Benefits, Security Concerns, and Attitude Toward Using IT systems. The research aims to identify the relationships between these variables and the adoption of IT systems in MEs.

A sample of MEs from the trade sector is selected, and data is collected through structured surveys. The surveys measure the levels of Technical Expertise, Behavioral Control, Perceived Benefits, Security Concerns, and Attitude Toward Using IT systems within the participating MEs. Statistical analysis techniques, such as regression analysis and correlation analysis, are applied to determine the strength and significance of the relationships between the variables.

Technical Expertise was found to be a critical factor in driving the adoption of IT systems in MEs. Security Concerns emerged as another significant factor affecting the decision to adopt IT systems. Furthermore, the Attitude of Owners was identified as the third crucial determinant of IT system adoption in MEs with owners who demonstrated positive attitudes towards IT systems were more likely to embrace technological advancements.

The findings of the study reveal the importance of Technical Expertise in terms of knowledge, skills, and experience in driving the adoption of IT systems in MEs. Behavioral Control dimensions, including training programs, user support, and user-friendly interfaces, significantly influence the adoption process. Perceived Benefits, such as increased efficiency and productivity, play a vital role in fostering positive attitudes toward IT system adoption. Security Concerns also emerge as a significant factor affecting the decision to adopt IT systems in MEs.

The research provides valuable insights for MEs in the trade sector, policymakers, and IT system providers by highlighting the key factors that influence the adoption of IT systems. These findings can guide the development of targeted interventions, training programs, and support mechanisms to enhance the adoption and utilization of IT systems in MEs.

Keywords: Information Technology Systems, Micro Enterprises, Trade Sector

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CHAPTER 01 – INTRODUCTION

1.1 Background of the Study

In today's interconnected world, information technology (IT) systems play a crucial role in various sectors. IT systems refer to the hardware, software, and network infrastructure used to store, retrieve, process, and transmit digital information. These systems enable businesses to streamline their operations, enhance efficiency, improve decision-making processes, and gain a competitive edge in the marketplace. Globally, the adoption of IT systems has witnessed significant growth over the past few decades (See Figure 1.1). With the advent of the internet, cloud computing, mobile technologies, and digital communication channels, the accessibility and affordability of IT systems have increased, making them more popular and pervasive (Teeroovengadum, Heeraman and Jugurnath, 2017).

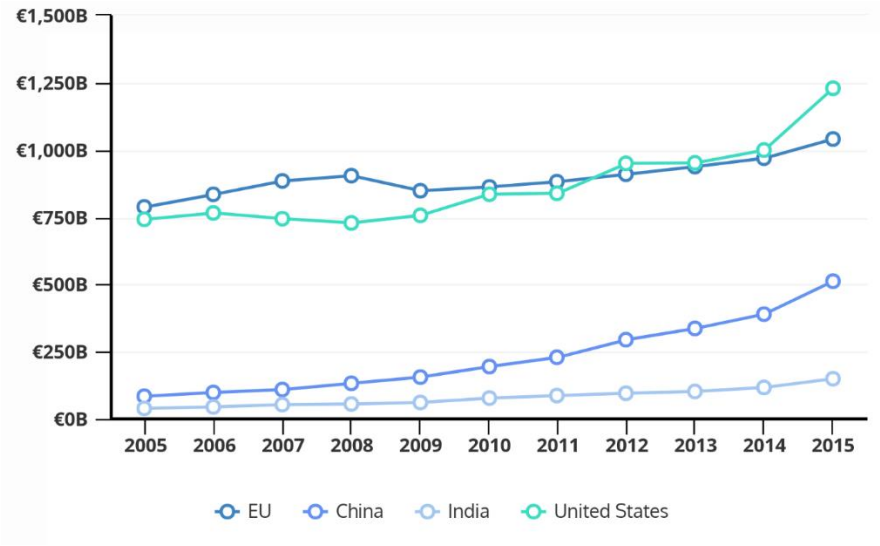


Figure 1.1 - IT system growth over the past decade
(Source: European Commission DG Communications Networks, 2020)

The widespread adoption of smartphones, the rise of social media, and the increasing digitization of services have further fueled the use of IT systems by individuals, businesses, and organizations across the globe. Figure 1.2 shows the overview of the adoption and use of connected devices and services of the global context (Wattegama, 2021).

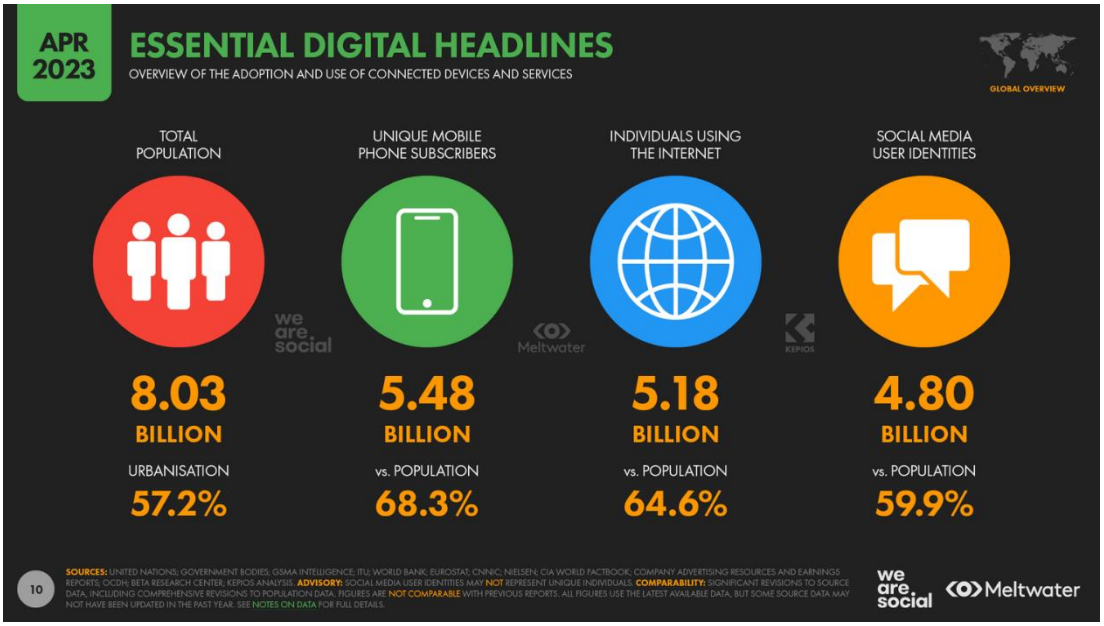


Figure 1.2 - Utilization of Connected Devices and Services
(Source: datareportal.com)

1.2 Research Problem

In the context of Sri Lanka, IT system adoption has been on the rise in recent years, driven by the government's initiatives to promote digital transformation and improve access to technology. Sri Lanka has made significant progress in terms of technological infrastructure, internet connectivity, and digital literacy. The country has witnessed a steady increase in internet penetration and mobile phone usage, which has created opportunities for the adoption of IT systems (Wattegama, 2021).

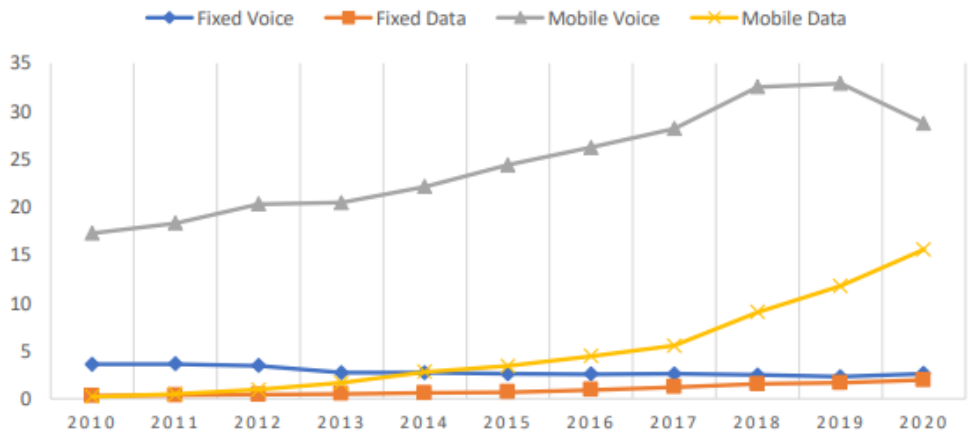


Figure 1.3 - Digital Infrastructure facilities in Sri Lanka
(Source: TRCSL, 2020)

Micro enterprises, defined as businesses with a limited number of employees and relatively low turnover, form a significant portion of the global economy. In the trade sector, which

encompasses activities such as retailing, wholesaling, and distribution, micro enterprises play a vital role in driving economic growth, creating employment opportunities, and fostering innovation (Pardo-del-Val and Martínez-Fuentes, 2019). However, these enterprises often lag behind in adopting IT systems due to various barriers and constraints. According to LIRNEasia (2020), approximately 40% of micro, small and medium-sized enterprises (MSMEs) utilize the internet or social media for their business activities. Among different sectors, the service sector stands out with 66% of MSMEs using these technologies, while trade and manufacturing sectors show lower adoption rates at 42% and 24%, respectively. There is a clear information gap between MSMEs that use the internet for business and those that do not. The majority of internet users find access to the internet important or very important, while non-users remain unconvinced of its benefits, with 79% stating that there is no need to use the internet. Additionally, mobile money services are significantly underutilized by MSMEs, as 96% of them do not use these services, with 18% of non-users indicating a lack of awareness.

1.3 Problem Statement

1.3.1 Aim of the Study

The research aim of this study is to develop an in-depth understanding of the significant factors that influence the adoption of the Information Technology systems in micro enterprises in the trade sector.

1.3.2 Objectives of the Study

- To identify the extent of IT System integration in Sri Lankan Micro Enterprises in the Trade Sector in Sri Lanka.
- To determine the factors influencing the adoption of information systems by Micro enterprises in the Trade Sector in Sri Lanka.
- To provide recommendations to stakeholders on enhancing adoption rates and optimizing system utilization.

1.3.3 Research Questions

- Up to What extent of IT System integration in Sri Lankan Micro Enterprise in the Trade Sector in Sri Lanka?
- What are the Determine factors influencing the adoption of information systems by Micro enterprises in the Trade Sector in Sri Lanka?
- How can stakeholders enhance adoption rates and optimize the utilization of Information Technology Systems within micro enterprise in the trade sector?

1.4 Significance

1.4.1 Academic Significance

The research contributes to the academic field by expanding the knowledge base on IT adoption in micro enterprises within the trade sector. It fills the existing research gap by providing insights into the specific challenges and opportunities faced by these enterprises when adopting IT systems. The findings can contribute to theoretical frameworks and models related to IT adoption, particularly in the context of micro enterprises. Moreover, it adds to the existing literature by exploring the relationship between customer attitudes, government support, and IT adoption in the trade sector (Shahadat et al., 2023).

1.4.2 Practical Significance

The findings of the research can have practical implications for micro enterprise owners, managers, and employees in the trade sector. Understanding the factors that influence IT adoption can help them make informed decisions regarding technology investments, implementation strategies, and organizational change processes. The research can serve as a guide for micro enterprises, enabling them to assess their readiness for IT adoption, identify potential barriers, and develop effective strategies to integrate IT systems. By leveraging the findings, micro enterprises can enhance their operational efficiency, decision-making processes, and overall competitiveness (Ghobakhloo et al., 2012).

1.5 Scope of the Study

The study will focus specifically on micro enterprises operating within the trade sector in Western Province, Sri Lanka. It will consider businesses engaged in retail, wholesale, and other trading activities. The research will be conducted within the Western Province of Sri Lanka, taking into account the country's unique context, and business environment.

1.6 Layout of the Dissertation

Chapter 02 offers a comprehensive examination of theories, models, and empirical studies related to the topic at hand. The literature review summarizes previous research on the adoption of IT systems and related concepts, including an analysis of perception theories, empirical evidence, and critical evaluations in the field of study.

Chapter 03 of this study centers on the establishment and evolution of the research framework. The process involves the development of hypotheses, the identification of operational variables, and the comprehensive description of the research methodology. This section provides a detailed discussion on the research design, survey methodology, target population and sample selection, data collection techniques, measurement methods, and data analysis techniques. The selected concepts and methodologies are based on well-established theories and are backed by existing empirical literature.

In the subsequent section, Chapter 04 focuses on the initial phase of data analysis, which encompasses three primary stages. The aforementioned stages encompass the evaluation of the validity and reliability of measurement scales, the execution of descriptive analysis on the gathered data, and the implementation of statistical analysis to assess the research hypotheses. The chapter provides empirical evidence that supports the relationships described in the research model.

Chapters 05 and 06 of this study are devoted to the attainment of the research objectives, the derivation of significant conclusions, the provision of practical recommendations, the acknowledgment of research limitations, and the proposal of potential directions for future investigation. The results obtained from the analysis of the data are meticulously examined, accompanied by a comprehensive discourse on each factor, resulting in perceptive conclusions and practicable insights.

CHAPTER 02 – LITERATURE REVIEW

2.1 Introduction

This chapter provides a comprehensive literature review on the acceptability and adoption of technology, incorporating empirical research. The relevant theories, models, and empirical studies are critically analyzed, comparing and contrasting their results to evaluate and validate their applicability to the study. A summary concludes the chapter, highlighting the key ideas discussed. The literature review draws from a range of articles, journals, and reputable e-libraries, ensuring a thorough examination of the topic.

2.2 Definitions

Information Technology Systems

IT systems are a collection of hardware, software, and network components that are essential for the efficient management and processing of digital information within an organization or business. Physical items such as computers, servers, storage devices, and peripherals such as printers and scanners are examples of IT system hardware. These devices provide the computing power, storage capacity, and input/output capabilities required for data processing, storage, and retrieval (Stoneburner, Goguen and Feringa, 2002). IT systems are critical for micro firms in the trade sector, allowing them to better manage their operations, streamline processes, and increase their competitiveness. These firms, which are often defined by their modest size and limited resources, can profit greatly from the implementation of IT solutions adapted to their specific requirements.

Micro enterprises engage in a variety of activities in the trade sector, including retail, wholesale, and other trading operations. IT systems provide several benefits to these enterprises. For example, hardware components such as computers, servers, and peripherals allow micro companies to efficiently store and retrieve product information, monitor inventory levels, and execute transactions. This allows them to better manage their supply chain, reduce stockouts, and provide better customer service. Software applications are very useful for small businesses in the trade industry. Inventory management systems enable companies to track and regulate their stock levels, ensuring that the correct products are available at the right time. POS systems provide for efficient and accurate sales processing, inventory changes, and sales reporting. client relationship management (CRM) software assists microbusinesses in developing and maintaining strong client relationships, tracking sales leads, and personalizing marketing efforts (Gunasekaran, Ngai and McGaughey, 2006).

2.3 Theories and Models

2.3.1 Social Cognitive Theory (SCT)

Social cognitive theory, developed by psychologist Albert Bandura, is a psychological framework that emphasizes the interaction between individuals, their behaviors, and their environment. This theory posits that people learn and develop through observational learning, self-efficacy beliefs, and the reciprocal interaction between cognitive, behavioral, and environmental factors (Conner, M., & Norman, 2006). According to social cognitive theory, learning occurs through the observation and modeling of others' behaviors, known as observational learning or modeling. Individuals acquire new behaviors, skills, and attitudes by observing and imitating others. They can also learn from the consequences that others experience for their behaviors, which is known as vicarious reinforcement or punishment (Rana and Dwivedi, 2015).

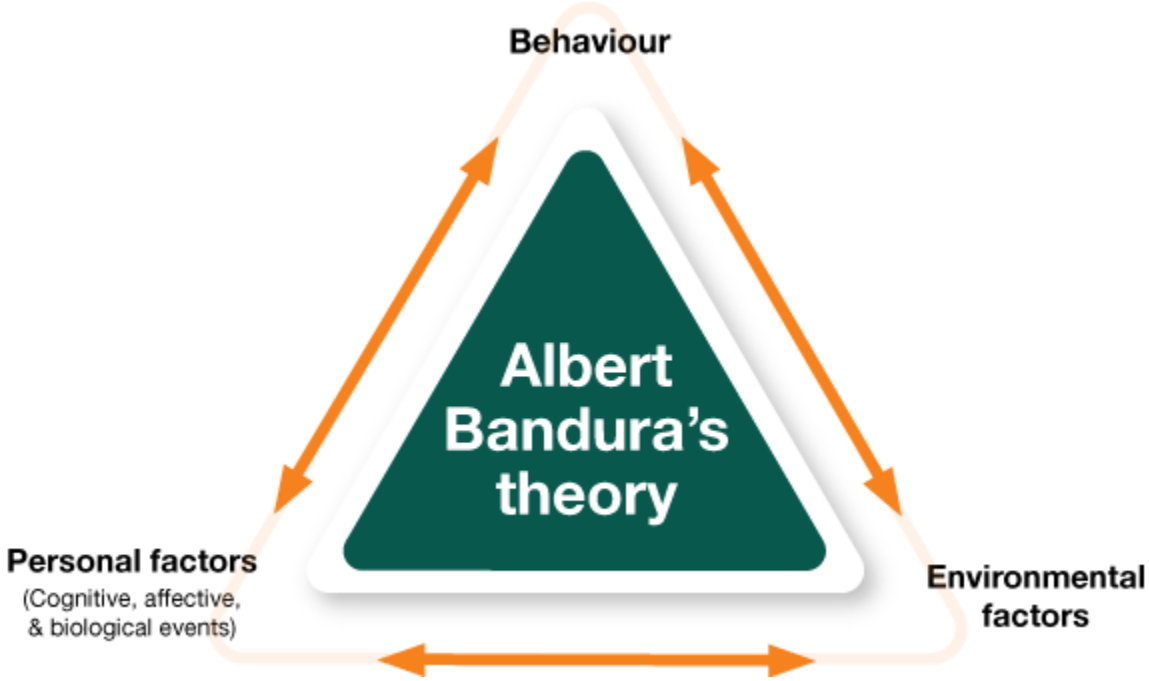


Figure 2.1 - Social Cognitive Theory
(Source: Rana and Dwivedi, 2015)

Self-efficacy beliefs hold significant importance within the framework of social cognitive theory. Self-efficacy pertains to an individual's confidence in their capability to effectively carry out a particular task or behavior. Individuals with higher levels of self-efficacy exhibit a greater inclination to approach demanding tasks, persist in the face of challenges, and attain desired results. Self-efficacy is subject to the influence of four primary factors, namely mastery experiences, encompassing both past successes and failures; vicarious experiences, involving the observation of others' achievements and setbacks; social persuasion, which encompasses the act of receiving encouragement or discouragement from others; Furthermore, the study aims to investigate the impact of physiological and emotional states on the subject's overall well-being. The theory also recognizes the reciprocal interaction between cognitive processes, behavior, and the environment. Cognitive factors, such as beliefs, thoughts, and expectations, influence

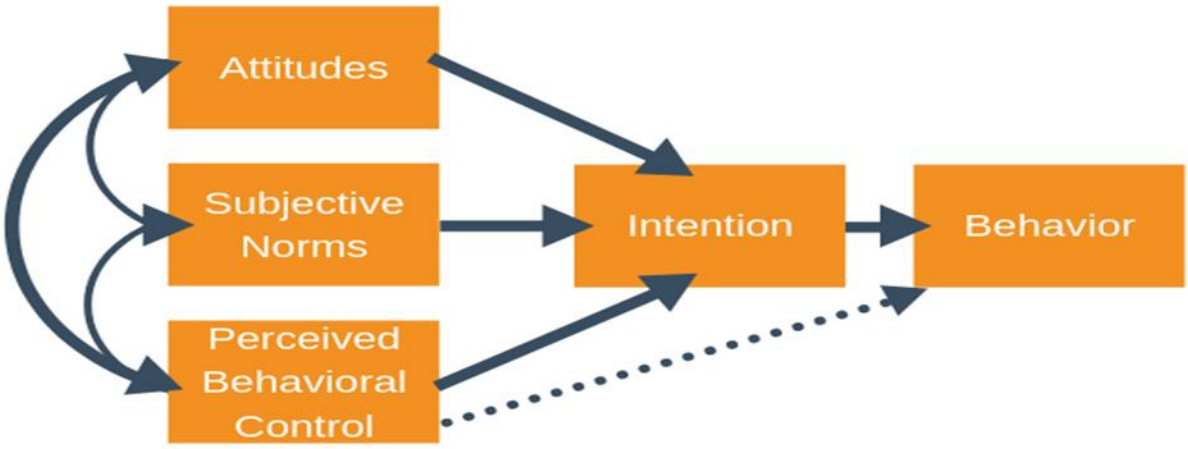
behavior, and behavior, in turn, can shape cognitive processes. Additionally, the environment plays a significant role in shaping behavior and cognitive processes. The social and physical environment provides cues, incentives, and opportunities that influence an individual's behavior and cognitive functioning (Rana and Dwivedi, 2015).

By applying the Social Cognitive Theory to the research topic, researchers can gain a comprehensive understanding of the factors influencing the adoption of information technology systems in micro enterprises. This theoretical framework provides a basis for investigating the interplay between personal beliefs, environmental factors, and behavioral outcomes, shedding light on the motivations, barriers, and facilitators of technology adoption in this context.

2.3.2 Theory of Planned Behavior (TPB)

The Theory of Reasoned Action (TRA), developed by Ajzen (2011), builds upon the TPB framework within the realm of psychology. A key addition in this model is the concept of perceived behavioral control, which allows for predictions about behaviors that may not always be fully under an individual's volitional control. Similar to the original model, an individual's motivation to engage in a specific activity remains a crucial element in the TRA. Intentions are regarded as a mechanism for capturing the motivational factors that underlie behavior and also serve as an indicator of the extent to which an individual is willing to exert effort in order to engage in a particular activity (Zhang, 2018). Ajzen (2011) argues that attitudes of individuals are significantly influenced by their goals and perceived behavioral control, as stated in the TPB.

According to Lin et al. (2021), the TPB posits that an individual's intentions can be altered by manipulating any of the three variables: attitudes, subjective norms, and perceived behavioral



control. The initial factor, denoted as "attitude towards the behavior," pertains to the degree to which an individual possesses a favorable or unfavorable assessment of the behavior under consideration. The second factor, commonly known as "social norms," encompasses the perceived influence exerted by society in encouraging or discouraging individuals from engaging in a particular behavior. The third factor, "perceived behavioral control," is the most recent addition to the theory and pertains to an individual's perception of the ease or difficulty in carrying out the behavior. This factor takes into account past experiences as well as anticipated barriers and challenges. According to Zhang (2018), generally, an individual's intention to engage in a particular behavior is likely to be stronger when they have a more favorable attitude and subjective norm toward that behavior, and when they perceive a higher level of behavioral control.

Figure 2.2 - Theory of Planned Behavior
(Source: Ajzen, 2011)

According to Ajzen (2011), the attitudinal component of the TPB refers to an individual's attitude towards participating in a specific activity, such as adopting a mobile application. For instance, if people hold a favorable attitude towards engaging with a mobile application, they are more likely to actually use it. The TPB consistently demonstrates a higher explanatory power for a wide range of behavioral intentions compared to the Theory of Reasoned Action, regardless of the level of control over the behavior. As a result, the findings support the practice of measuring beliefs independently from the perspectives of essential resources and opportunities that individuals have or perceive in relation to engaging in the behavior (Lin et al., 2021).

In this regard, there are three main factors influencing the technology adoption of micro companies in the trading sectors (Kumar, Maheshwari and Kumar, 2002). Their attitudes toward the acceptance of IT system for their business operation is essential criteria in this model. Also,

the norms and perceived behavioral factors of the owners of the micro business will impact the intention of IT system adoption in the trading sector companies.

2.3.3 Technology Acceptance Model (TAM)

Davis's (1989) Technology Acceptance Model (TAM) is a widely used theoretical framework for predicting individuals' adoption and usage of information systems and technology. Marangunić and Granić (2015) highlight that TAM has undergone extensive research and has become a fundamental model for understanding the factors that influence people's acceptance or rejection of new technologies. The final version of the Davis model comprises several key components, including attitude, behavioral intention, perceived usefulness, and perceived ease of use. Perceived usefulness refers to the subjective belief held by potential users that utilizing a specific application system will enhance their job performance within an organizational context. Conversely, perceived ease of use pertains to the extent to which potential users anticipate that the target system will be user-friendly and effortless to use. These concepts center around the expectations and beliefs individuals hold regarding their interactions with the target system (Weerasinghe and Hindagolla, 2017).

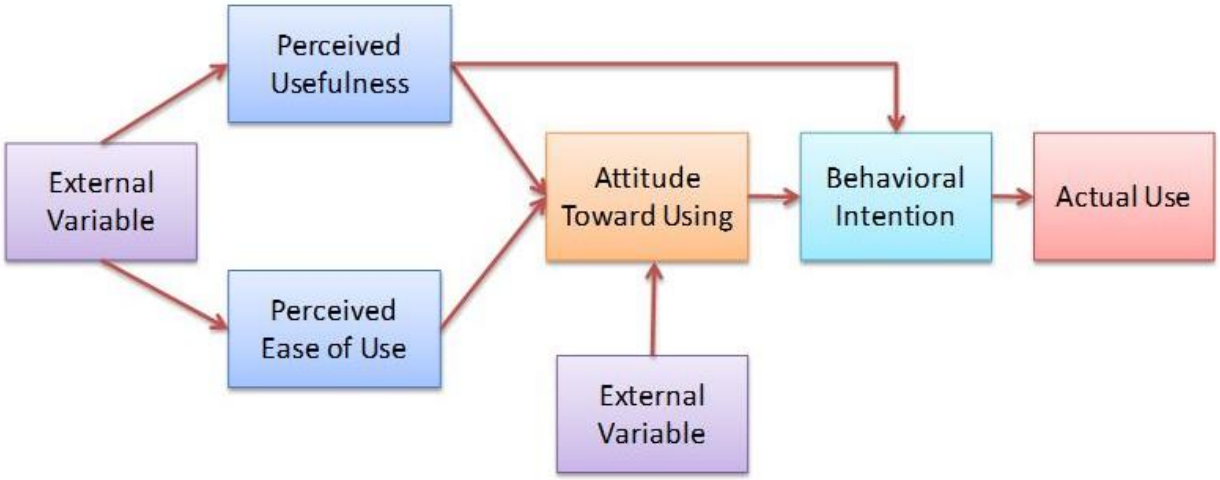


Figure 2.3 - Technology Acceptance Model
(Source: Davis's, 1989)

Bertrand and Bouchard (2008) state that the TAM model is a technique that is legitimate, powerful, and effective for analyzing user acceptance of innovation. The TAM model is aimed to comprehend how one's ideas, attitudes, and intentions can be affected by external variables. It focuses on the attitudes and intentions of users to utilize a certain technology or service, and it pays particular attention to the attitudes and intentions of those users. Some research has included additional antecedents including subjective norms and perceived credibility in order to strengthen the TAM framework's explanatory power (Lee and Chang, 2011). The TAM proposes that a shift in a person's intentions to use a technology can be caused by a change in one or more of the predictors of intentions, and that this change can occur independently or in conjunction with other predictors. However, the TAM does not provide a definition for the ideas of perceived

utility and ease of use, nor does it provide strategies to change these elements in the direction that is intended. Instead, TAM intends to serve as a framework for examining varied behaviors of technological users while retaining a thrifty approach (Marikyan and Papagiannidis, 2022).

By applying the Technology Adoption Model, researchers can gain insights into the factors that influence the adoption of information technology systems in micro enterprises. This theoretical framework provides a structured approach to understanding individuals' perceptions, attitudes, and intentions towards technology adoption, highlighting the importance of perceived usefulness, ease of use, and external factors. Utilizing TAM can assist in identifying strategies to promote the successful adoption and utilization of IT systems in micro enterprises.

2.4 The Empirical Research

This empirical review provides an overview of existing studies that have investigated the factors influencing the adoption of information technology (IT) systems in micro-enterprises within the trade sector. These studies contribute to our understanding of the key determinants, challenges, and outcomes associated with IT adoption in this specific context.

a study in India to identify the factors influencing the adoption of IT systems in micro enterprises in the trade sector. Their findings revealed that the perceived benefits of IT systems, such as improved efficiency, increased competitiveness, and enhanced customer service, significantly influenced the decision to adopt technology. Furthermore, factors such as owner's education, prior IT experience, and support from the government and IT providers were identified as facilitators of IT adoption in micro enterprises (Singh and Wadera, 2017).

Liang and Huang (2019) conducted a study in Taiwan to examine the factors affecting the adoption of IT systems in micro enterprises in the wholesale and retail trade sector. Their findings indicated that perceived usefulness, ease of use, and compatibility of IT systems with existing business practices were significant factors influencing adoption. Moreover, they found that the owner's innovativeness and IT knowledge, as well as the availability of IT support and training, played crucial roles in facilitating IT adoption among micro enterprises.

Rahman et al. (2020) conducted a study in Bangladesh to explore the factors influencing IT adoption in micro enterprises engaged in the trade sector. Their research highlighted that perceived benefits, especially increased market reach and improved customer service, significantly influenced the decision to adopt IT systems. They also identified perceived costs, including financial constraints and concerns over technical expertise, as major barriers to adoption. Additionally, they found that external support, such as government initiatives and access to affordable IT solutions, positively influenced IT adoption among micro enterprises.

A study in China to examine the factors influencing IT adoption in micro enterprises in the trade sector. Their findings indicated that factors such as perceived usefulness, compatibility, relative advantage over traditional methods, and perceived ease of use significantly influenced IT adoption. They also found that external factors, including government support, industry norms,

and market competition, played a crucial role in promoting IT adoption among micro enterprises (Chen and Zhou, 2021).

Mendoza et al. (2022) conducted a study in the Philippines to investigate the factors influencing IT adoption in micro enterprises in the retail trade sector. Their research revealed that perceived benefits, such as improved sales, efficiency, and competitiveness, were significant drivers of IT adoption. They also found that owner's IT knowledge, positive attitudes towards technology, and access to technical support influenced the adoption decision. Moreover, they identified financial constraints and limited access to affordable IT solutions as significant barriers to adoption.

A study in the context of micro enterprises in the trade sector in India to investigate the factors influencing the adoption of IT systems. Their research identified several critical factors affecting IT adoption, including perceived usefulness, compatibility, ease of use, and perceived risks. They found that micro enterprises that perceived IT systems as useful and compatible with their business needs were more likely to adopt them. Additionally, concerns about security risks and uncertainty associated with technology adoption were found to hinder the adoption process (Study by Datta and Sheth, 2018).

Nguyen and Le (2020) conducted a study in Vietnam to explore the factors influencing IT adoption in micro enterprises in the retail trade sector. Their findings highlighted the significance of perceived benefits, such as improved operational efficiency, cost reduction, and access to new markets, in driving IT adoption. They also identified factors such as owner's IT skills, perceived ease of use, and support from government and IT providers as facilitators of adoption. Moreover, they found that trust in technology and social influence, such as recommendations from peers and colleagues, played a role in shaping IT adoption behavior.

A study in China to examine the factors influencing IT adoption in micro enterprises in the trade sector, with a particular focus on e-commerce adoption. Their research revealed that perceived benefits, including increased customer reach and improved competitiveness, positively influenced e-commerce adoption. They also identified factors such as owner's IT competence, perceived ease of use, and external support as facilitators of adoption. Furthermore, they found that factors such as financial constraints and concerns about data security and privacy acted as barriers to e-commerce adoption (Study by Gao et al., 2021).

Tewari et al. (2019) conducted a study in India to investigate the factors influencing IT adoption in micro enterprises in the trade sector, specifically focusing on the role of social capital. Their findings indicated that social capital, including trust, network ties, and social norms, significantly influenced IT adoption behavior. They found that micro enterprises with strong social networks and high levels of trust were more likely to adopt IT systems. Moreover, they identified factors such as perceived usefulness, ease of use, and access to technical support as additional determinants of IT adoption.

A study in Malaysia to explore the factors influencing IT adoption in micro enterprises in the trade sector, particularly in the context of cloud computing. Their findings highlighted the importance of perceived benefits, such as cost savings, scalability, and enhanced collaboration, in driving cloud computing adoption. They also identified factors such as owner's IT knowledge, perceived ease of use, and external support as significant determinants. Additionally, they found that concerns over data security and privacy acted as barriers to cloud computing adoption (Abdullah et al., 2022).

In summary, these empirical studies provide valuable insights into the factors influencing the adoption of IT systems in micro enterprises within the trade sector. The findings consistently highlight the importance of perceived benefits, ease of use, compatibility with existing practices, and external support as key determinants of IT adoption. Additionally, financial constraints, limited IT knowledge, and concerns over technical expertise emerge as common challenges faced by micro enterprises. Understanding these factors can assist policymakers, industry stakeholders, and micro enterprise owners in developing targeted strategies and support mechanisms to promote successful IT adoption in the trade sector.

2.5 Critical Review of Literature

Technical Expertise

Several studies highlight the significance of technical expertise in the adoption of IT systems. Datta and Sheth (2018) found that micro enterprises with prior IT experience were more likely to adopt technology. Liang and Huang (2019) emphasized the role of owner's IT knowledge as a facilitator of IT adoption. Similarly, Mendoza et al. (2022) identified owner's IT knowledge as an influencing factor in their study. These findings suggest that a higher level of technical expertise can positively influence the decision to adopt IT systems in micro enterprises.

Behavioral Control

Behavioral control refers to the perceived ability to successfully use and control IT systems. This construct has been found to influence IT adoption in micro enterprises. Chen and Zhou (2021) identified perceived ease of use as a significant factor affecting IT adoption. Nguyen and Le (2020) highlighted the importance of perceived ease of use as a facilitator of adoption. These findings suggest that micro enterprises with a greater sense of control over IT systems are more likely to adopt them.

Perceived Benefits

The perceived benefits of adopting IT systems play a crucial role in the decision-making process. Singh and Wadera (2017) found that perceived benefits, such as improved efficiency and increased competitiveness, significantly influenced the adoption decision. Rahman et al. (2020) highlighted the importance of perceived benefits, specifically increased market reach and

improved customer service. Nguyen and Le (2020) and Gao et al. (2021) also emphasized the significance of perceived benefits, including operational efficiency, cost reduction, and access to new markets. These findings indicate that micro enterprises are more likely to adopt IT systems when they perceive tangible benefits associated with their implementation.

Security Concerns

Security concerns related to IT systems can act as a barrier to adoption. Datta and Sheth (2018) found that concerns about security risks hindered the adoption process. Gao et al. (2021) highlighted concerns about data security and privacy as barriers to e-commerce adoption. These findings indicate that addressing security concerns and ensuring robust data protection measures are essential for promoting IT adoption in micro enterprises.

Attitude Toward Using

Attitude toward using IT systems reflects the subjective evaluation of the technology and its potential benefits. Studies have shown that a positive attitude toward using IT systems can facilitate adoption. Mendoza et al. (2022) identified positive attitudes toward technology as influencing factors in their study. Nguyen and Le (2020) highlighted the role of owner's positive attitudes toward IT adoption. These findings suggest that micro enterprises with a favorable attitude toward using IT systems are more likely to adopt them.

Table 2.1 - Critical Review of Literature

Factor	Description	Key Studies
Technical Expertise	Technical expertise, including prior IT experience and IT knowledge, is crucial for the adoption of IT systems. Micro enterprises with higher technical expertise are more likely to adopt IT.	Datta and Sheth (2018) Liang and Huang (2019) Mendoza et al. (2022)
Behavioral Control	The perceived ability to successfully use and control IT systems, such as perceived ease of use, significantly influences IT adoption.	Chen and Zhou (2021) Nguyen and Le (2020)
Perceived Benefits	Perceived benefits, including improved efficiency, competitiveness, market reach, and customer service, play a crucial role in the decision to adopt IT systems.	Singh and Wadera (2017) Rahman et al. (2020) Nguyen and Le (2020) Gao et al. (2021)

Security Concerns	Security concerns, such as data security and privacy, can act as barriers to the adoption of IT systems.	Datta and Sheth (2018) Gao et al. (2021)
Attitude Toward Using	A positive attitude toward using IT systems, reflecting a favorable evaluation of the technology, can facilitate adoption.	Mendoza et al. (2022) Nguyen and Le (2020)

2.6 Research Gap

Micro businesses in Sri Lanka's commercial sector are gradually implementing information technology (IT) solutions. On the factors impacting the adoption of IT systems in this industry, however, little research has been done. Malwenna (2019) researched the use of information systems in Sri Lankan small and medium businesses. Darshi, Nanayakkara, and Gunawardene (2019) researched the adoption of a computerized accounting system (CAS) in small and medium business enterprises (SMEs) in the Matara district of Sri Lanka. Chathurika (2019) did study on cloud computing adoption among SMEs in Sri Lanka. Gunawardana (2020) examined the connection between firm-based features and e-commerce adoption. She also focused on identifying crucial success criteria and potential advantages of e-commerce adoption in SMEs. Malawige and Nanayakkara (2014) critically studied the uptake of enterprise information systems by SMEs, and Rassool and Dissanayake (2019) talked about digital transformation for SMEs in the context of Sri Lanka as an emerging economy. It is yet unknown, nevertheless, how the implementation of IT would affect the effectiveness of MEs in Sri Lanka's Western Province. Researchers can better understand how the adoption of IT can help MEs in this region by examining this issue. As a result, it is important to investigate the variables affecting the adoption of IT systems in ME enterprises in the commerce sector in Sri Lanka's Western Province. The results of this study would close the knowledge gap in this field and offer insightful information to government policy makers and enterprises in the Middle East. Additionally, it would help to enhance the design and development of IT systems for ME enterprises in this industry, making them more desirable to businesses and user-friendly.

2.7 Chapter Summary

The chapter commenced by providing an introduction to the topic and defining the key terms associated with it. Subsequently, a comprehensive exploration of relevant theories and models was conducted, delving into their intricacies and implications. Following that, empirical research was carried out to examine recent studies conducted by various authors, with a focus on identifying and evaluating the factors that influence the adoption of IT systems. The results of the study revealed that various factors, including Technical Expertise, Behavioral Control, Perceived Benefits, Security Concerns, and Attitude Toward Using, exert a substantial influence

on the adoption of information technology systems. During the concluding phase, a comprehensive evaluation was conducted, facilitating the examination of various theories, models, and empirical studies in order to identify similarities and differences. The aforementioned analysis further enabled the identification of additional relevant factors and the utilization of these theoretical frameworks to tackle present-day concerns.

CHAPTER 03 – METHODOLOGY

3.1 Introduction

The research design chapter outlines the methodical strategy that will be used throughout the research. This stage entails selecting a sample group that will be given a set of questions to answer in order to address the particular problem at hand. As part of the research design process, a conceptual framework will be constructed, and hypotheses will be identified.

3.2 Conceptual Framework

The conceptual framework developed by the researcher is depicted in Figure 3.1, building upon the theories and models presented in Chapter 02, which extensively covered the literature review. Through empirical investigation and rigorous analysis, specific factors or dimensions related to the independent variables were identified, and their association with the dependent variable was established. The conceptual framework visually represents the interplay among the dependent variable and the independent variables. It is imperative to comprehend both the relationship and the significance of these factors in influencing the adoption of Information Technology Systems in Micro Enterprises within the Trade Sector.

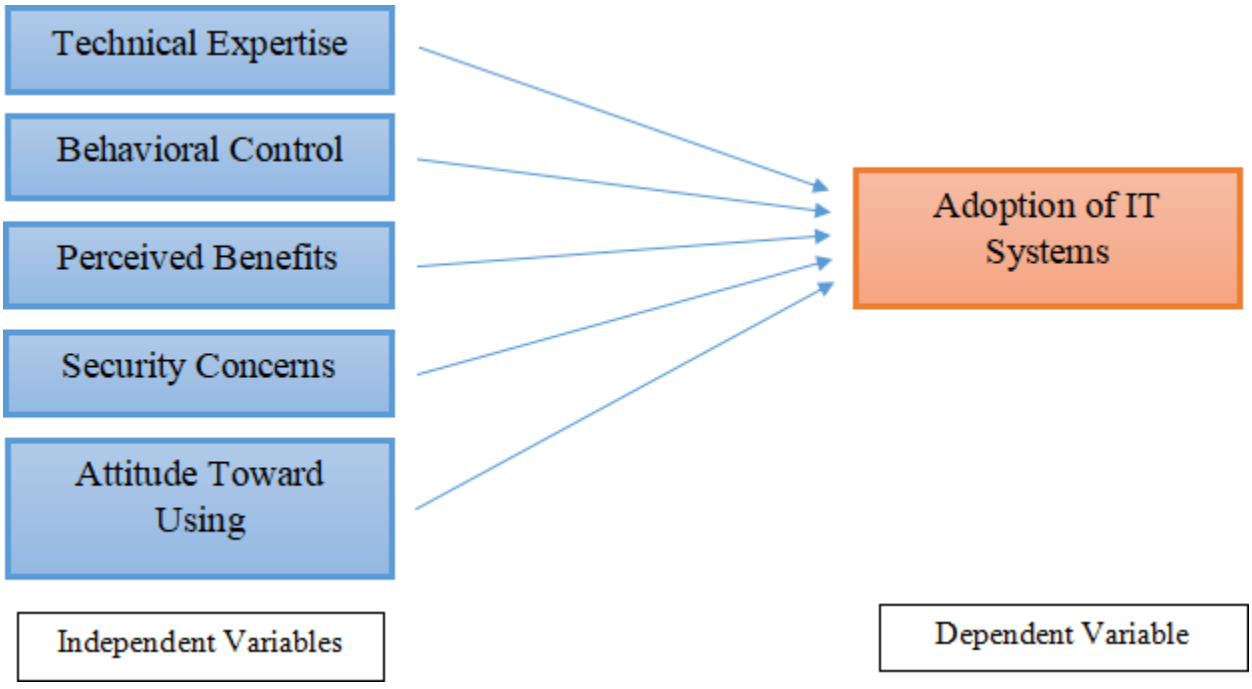


Figure 3.1 - Conceptual Framework

3.3 Rationalization of Conceptual Framework

The conceptual framework presented in Figure 3.1 is developed through a comprehensive analysis of the literature review, empirical research, theories, and models to establish the relationship between the listed variables. The framework aims to elucidate the independent

variables associated with the adoption of Information Technology Systems in Micro Enterprises within the Trade Sector. These independent variables include technical expertise, behavioral control, perceived benefits, security concerns, and attitude toward using. Existing journal publications that have investigated the adoption of IT systems and relevant factors have been synthesized to identify these independent variables. While prior studies focused on examining each independent variable individually, this study integrates multiple recurring independent variables from various research papers to yield intriguing findings. Consequently, the conceptual framework depicted above consolidates numerous relevant journal articles, enabling an examination of all variables collectively and elucidating their intricate interactions in a comprehensive and holistic manner.

3.4 Research Hypothesis

Based on the comprehensive literature review and the existing understanding of the concepts, the following hypotheses have been formulated.

Table 3.1 - Hypothesis Development of the Study

Technical Expertise	$H1_1$	Technical Expertise has a significant impact on IT Systems adoption
	$H1_0$	Technical Expertise has no significant impact on IT Systems adoption
Behavioral Control	$H2_1$	Behavioral Control has a significant impact on IT Systems adoption
	$H2_0$	Behavioral Control has no significant impact on IT Systems adoption
Perceived Benefits	$H3_1$	Perceived Benefits has a significant impact on IT Systems adoption
	$H3_0$	Perceived Benefits has no significant impact on IT Systems adoption
Security Concerns	$H4_1$	Security Concerns has a significant impact on IT Systems adoption
	$H4_0$	Security Concerns has no significant impact on IT Systems

		adoption
Attitude Toward Using	$H5_1$	Attitude Toward Using has a significant impact on IT Systems adoption
	$H5_0$	Attitude Toward Using has no significant impact on IT Systems adoption

3.5 Operationalization of Variables

The exact procedures utilized to measure a certain variable within a study are referred to as operational variables. Table 3.2 presents a list of operational variables used in this investigation in the context of this research. This part is critical in removing ambiguity from research investigations by carefully describing the relevant characteristics that can be measured objectively.

Table 3.2 - Operationalization of the Conceptual Framework

Variable		Dimension	Empirical Research
Independent Variables	Technical Expertise	Knowledge Experience Problem-Solving Skills Communication Skills	(Chao and Chandra, 2012; Ramdani, Chevers and Williams, 2013; Bordonaba-Juste, Lucia-Palacios and Polo-Redondo, 2012; Musawa and Wahab, 2012)
	Behavioral Control	Self-Awareness Self-regulation Monitoring and feedback Persistence and resilience	(Lans et. al, 2010; Demirel, Iatridis and Kesidou, 2018; Jamil and Mohamed, 2011; Abduljalil and Zainuddin, 2015)

	Perceived Benefits	Cognitive benefits Social benefits Emotional benefits Functional benefits	((Marcati, Guido and Peluso, 2008); (Jaafreh, 2018); Awa et al., 2011; Wang and Ahmed, 2009)
	Security Concerns	Confidentiality Integrity Availability Accuracy	(Tan and Eze, 2008; Prause, 2019; Duan, Deng and Corbitt, 2012; Tehrani, 2013)
	Attitude Toward Using	Usefulness Compatibility Enjoyment Social Influence	(Grandon and Pearson, 2004; AL-QIRIM, 2010; Seyal, Rahman and Awg Mohammad, 2007; Pentina, Koh and Le, 2012)
Dependent Variable	Adoption of IT Systems	Stickiness Engagement Recommendation Retention	(Alam and Mohammad Noor, 2009; Windrum and Berranger, 2006; Al-Qirim, 2007; Ghobakhloo, Arias-Aranda and Benitez-Amado, 2011)

3.6 Research Design

The research adopts a deductive research approach, specifically utilizing the main context of the onion model proposed by Saunders in 2009. Within this framework, the study has an exploratory purpose, aiming to gain a deeper understanding of the factors influencing the adoption of IT systems in MEs in the Trade Sector. The approach employed is inductive, allowing for the generation of new insights and theories based on the analysis of collected data. The research takes the form of a quantitative analysis, utilizing a questionnaire developed using the Likert scale as the primary method for obtaining objective-based responses. The time horizon of the

study is cross-sectional, focusing on a specific point in time to examine the factors influencing IT system adoption in Micro Enterprises in the Trade Sector.

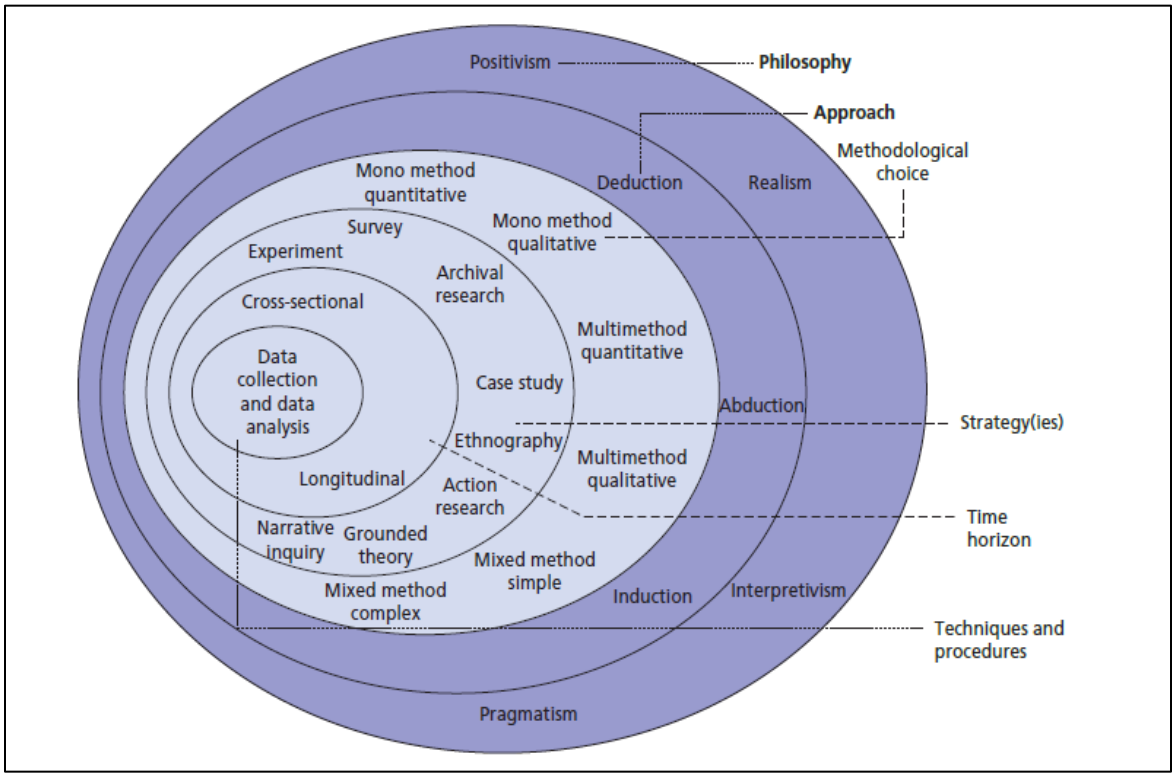


Figure 3.2 - The research onion
(Source: Saunders, 2009)

3.6.1 Research Philosophy

The main research philosophy of this study is characterized by the adoption of a research synthesis approach, which encompasses attitudes, perceptions, knowledge features, and the style of the study's artifact. The research philosophy encompasses beliefs, assumptions, and the nature of data collection and analysis. In this research, both positivism and pragmatism are employed. The utilization of pragmatism aligns with the contemporary pragmatic features of the study, addressing the research gap constructively and conceptually through research synthesis and derivation. The research philosophy, as the main essence of the study's development, is directly connected to the scope and manipulation of details, enabling the recognition and evaluation of the key context of analysis. Therefore, the adoption of this research philosophy is crucial in shaping the study's research ontology.

3.6.2 Research Approach

The research philosophy adopted for this study is based on the approach to synthesizing research that incorporates attitudes, perceptions, knowledge features, and the nature of the studied artifacts. The research philosophy encompasses the beliefs, assumptions, and the manner in which data is collected and analyzed. In this research, a combination of positivism and pragmatism is utilized. Pragmatism is in accordance with the current pragmatic characteristics of

the research, as it addresses the identified gap in research and emphasizes the constructive and conceptual aspects of research synthesis and derivation. The selection and establishment of a research foundation are intricately connected to the extent and manipulation of pertinent information, enabling the identification and assessment of crucial contextual elements. Therefore, incorporating this research philosophy is essential in shaping the study's development and research ontology.

3.6.3 Research Strategy

The research strategy employed in this study follows an outside-inside approach that focuses on identifying the underlying features of the factors influencing IT adoption in micro enterprises. This strategy involves a comprehensive analysis of relevant data to establish a strong connection between the study's context and its research objectives. The data analysis process aims to effectively link the contextual aspects of the study with the research strategy, thereby enabling a thorough investigation of the research premise.

3.7 Sampling and Data Collection Method

3.7.1 Population

As per the definition provided by Saunders, Lewis, and Thornhill (2009), the population refers to the entire set of cases from which a sample is selected. In the context of this study, the population encompasses the complete group of individuals that researchers aim to analyze in order to gather pertinent information. Specifically, based on the data from the Non-Agricultural Economic Activities in Sri Lanka Economic Census 2013/2014 report, the population for this study consists of 48,773 micro entrepreneurs operating in the trade sector within the Western Province.

3.7.2 Sample Size

The sample size for this study was determined by taking into account the study's time constraints as well as the population's inherent variability. The sampling procedure proposed by Krejcie and Morgan (1970) was used by the researchers to produce a satisfactory portrayal of the population. The above formula is widely accepted and regarded as one of the most successful approaches for determining the optimal sample size in the context of testing. Given the population size of almost 40,000, it was decided that a sample size of 381 respondents would be suitable using the recommended calculation.

3.7.3 Data Collection Method

In this study, primary data will be collected through a survey utilizing a structured questionnaire. The purpose of this approach is to uncover underlying issues and obtain answers to the research questions. The target population for data collection will be micro entrepreneurs in the trade sector located in the Western Province. To ensure convenience and efficiency in data collection, the questionnaire will be administered electronically using an electronic form.

A questionnaire, according to Sekaran Uma (2014), is a pre-designed set of questions to which respondents respond. A questionnaire has been designed in accordance with the conceptual framework and operationalization of this study (see Annexure 01). The questionnaire is made up of multiple-choice questions about demographic information and uses a Likert scale of 1 to 5. A rating of 1 signifies "Strongly Disagree," while a value of 5 indicates "Strongly Agree."

3.7.4 Statistical Methods Applied in Analysis

The primary data obtained from survey questionnaires will be subjected to quantitative analysis utilizing the SPSS (Statistical Package for the Social Sciences) software. The analysis process consists of three stages. Firstly, the validity and reliability of the measurement scales will be examined to ensure the accuracy of capturing the intended constructs. Secondly, the observed data will be analyzed using descriptive statistics, including means, frequencies, and percentages, to identify patterns and characteristics within the data. Lastly, statistical tests will be conducted to test the research hypotheses, examining the correlations between independent and dependent variables. Correlation tests will assess the significance and direction of relationships, while multiple linear regression analysis will determine how independent factors impact the dependent variable. Through this analysis, the research aims to understand the properties of the observed data, assess the validity and reliability of the measurement scales, and evaluate the research hypotheses using appropriate statistical methods.

3.8 Ethical Consideration of Research

The study is not expected to encounter any ethical conflicts since the research design ensures the anonymity of participants. Ethical considerations are addressed by utilizing both primary and secondary data sources. The secondary data, derived from relevant literature, will be used for abstracting information without direct data interpretation (Daniel & Harland, 2017). On the other hand, primary data will play a crucial role in establishing the relationships between key variables within the conceptual framework and conceptualization process. By adhering to this approach, the study maintains ethical integrity and protects the privacy of participants involved.

CHAPTER 04 – RESULTS AND OBSERVATIONS

4.1 Introduction

The Results and Observations section is designed to offer a comprehensive overview of the study's findings, starting with the pre-test and pilot test, which involved factor analysis, reliability assessment, and validity checks. The Statistical Package for Social Science (SPSS) Version 25 was used to analyze the results. A well-chosen sample of people was given the questionnaire, which was carefully designed to obtain responses pertinent to the research problem. The SPSS statistical tool was then used to analyze the data that was gathered from the sample. The factor analysis, validity and reliability checks, demographic data on the respondents, and entire data set hypothesis testing are all included in this part.t and pilot test, which involved factor analysis, reliability assessment, and validity checks.

4.2 Pre-Test

The purpose of the pre-test is to evaluate the effectiveness, clarity, and suitability of the research questionnaire before its full-scale implementation. Ten business-related experts received the questionnaire, and they were asked to examine it for significance, relevance, and clarity. Prior to conducting the primary data analysis, this input assists in identifying any potential problems or areas of confusion that need to be clarified or changed. The pre-test feedback from the participants was extremely positive, and filling out the questionnaire only took a few minutes. In order to gather data, the questionnaire was distributed to business owners in the trade sector.

4.3 Pilot Test

Following the completion of an initial pre-test, a group of 40 people was chosen to take part in the pilot test, during which the questionnaire was administered. The fundamental goals of running a pilot test are twofold. To begin, it seeks to detect and correct any potential issues or shortcomings in the questionnaire's design. Second, it seeks to assess the reliability and validity of the questionnaire's measurement scales (Sekaran Uma, 2014). Conducting validity and reliability testing requires factor analysis.

4.3.1 Test for Uni-Dimensionality

A factor analysis was performed on the independent variables to assess unidimensionality. This research includes looking at all of the indicators that were created to measure the various independent variables.

Technical Expertise (TE) – 04 Indicators
Behavioral Control (BC) – 04 Indicators
Perceived Benefits (PB) – 04 Indicators
Security Concerns (SC) – 04 Indicators
Attitude Toward Using (ATU) – 04 Indicators

Table 4.1 - Pilot Test - Factor Analysis Test Results

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
Technical Expertise_Q1					.584
Technical Expertise_Q2					.668
Technical Expertise_Q3					.806
Technical Expertise_Q4					.509
Behavioral Control_Q1		.736			
Behavioral Control_Q2		.859			
Behavioral Control_Q3		.846			
Behavioral Control_Q4	.561	.673			
Perceived Benefits_Q1	.651				
Perceived Benefits_Q2	.931				
Perceived Benefits_Q3	.942				
Perceived Benefits_Q4	.876				
Security concerns_Q1			.792		
Security concerns_Q2			.737		
Security concerns_Q3			.869		
Security concerns_Q4			.857		
Attitude Toward Using_Q1				.825	
Attitude Toward Using_Q2				.848	
Attitude Toward Using_Q3				.771	
Attitude Toward Using_Q4				.727	

Table 4.1 shows that all of the above-mentioned components have values larger than 0.5. Weaver and Maxwell (2014) define acceptable values as those greater than 0.5. As a result, the indicators given are regarded as reliable and valid. Table 4.2 shows, however, several values were removed since they appeared in multiple places.

Table 4.2 - Rotated Component Matrix

Variable	Question Removed
Behavioral Control	Behavioral Control_Q4

4.3.2 Test for Convergent Validity

Convergent validity assessment for the sample involved the utilization of various statistical measures, including the Average Variance Extracted (AVE), Bartlett's test of sphericity, and the Kaiser-Meyer-Olkin (KMO) measure of sample adequacy. The aforementioned measures were utilized to assess the degree of consistency and coherence exhibited by the data. Table 4.3 displays the outcomes of the assessment, encompassing the average variance extracted (AVE), Bartlett's test, and Kaiser-Meyer-Olkin (KMO) values. These values are presented for both the dependent variable and the independent variables.

Table 4.3 - Pilot Test - Convergent Validity Test Results

Variable	KMO	Bartlett's Test Significance Value	Average Variance Extracted (AVE)
Technical Expertise	.724	.000	.824
Behavioral Control	.718	.000	.938
Perceived Benefits	.847	.000	.839
Security Concerns	.816	.000	.830
Attitude Toward Using	.811	.000	.754
Adoption of IT Systems	.711	.000	.611

Table 4.3 shows KMO values greater than 0.5 for each variable, indicating adequate sample adequacy. Furthermore, the AVE values for all variables are greater than 0.5, whereas the Bartlett's test significant values are less than 0.05. These data confirm that all variables match the convergent validity testing requirements.

4.3.3 Test for Discriminant Validity

To evaluate discriminant validity, the squared paired correlations of each dimension must be compared to the associated AVE values. If the squared paired correlations are less than the AVE values, it supports the viability of discriminant validity because it shows that the measures do not substantially correlate with other constructs from which they are meant to differ.

Table 4.4 - Pilot Test - Discriminant Validity Test Results

Correlations

		Mean_TE	Mean_BC	Mean_PB	Mean_SC	Mean_ATU
Mean_TE		**.824**				
Mean_BC	Pearson Correlation	.751	**.938**			
	Squared Correlation	.564				
Mean_PB	Pearson Correlation	.647	.411	**.839**		
	Squared Correlation	.418	.168			
Mean_SC	Pearson Correlation	.634	.663	.469	**.830**	
	Squared Correlation	.401	.439	.219		
Mean_ATU	Pearson Correlation	.670	.548	.291	.518	**.754**
	Squared Correlation	.448	.300	.084	.268	

The results of the discriminant validity test are displayed in Table 4.4, which assesses the uniqueness of the variables being examined. In order to demonstrate discriminant validity, a variable should possess an average variance extracted (AVE) value exceeding 0.5, while the squared Pearson correlation should be less than the corresponding AVE value. In the current investigation, it is observed that all dimensions exhibit AVE values exceeding the threshold of 0.5, as presented in Table 4.4. Furthermore, the squared Pearson correlation coefficients for all variables exhibit values that are lower than their corresponding average variance extracted (AVE) values. The present study's results provide support for the discriminant validity of the independent variables, thereby confirming their unique characteristics and differentiation from each other.

4.3.4 Test for Reliability

The reliability of a measure refers to its ability to produce consistent and error-free results over time. In this study, the inter-item consistency was assessed to evaluate the reliability of the measures. This analysis looks at the coherence of respondents' replies across all items in a measure, with the goal of ensuring consistent and trustworthy assessment.

Table 4.5 - Pilot Test - Reliability Test Results

Variable	Cronbach's Alpha
Technical Expertise	.925

Behavioral Control	.967
Perceived Benefits	.935
Security Concerns	.932
Attitude Toward Using	.886
Adoption of IT Systems	.748

Table 4.5 presents the Cronbach's Alpha values for all dimensions, indicating the internal consistency of the variables. It is observed that all dimensions have Cronbach's Alpha values higher than 0.7, which suggests that the variables in the study demonstrated satisfactory internal consistency.

4.4 Data Cleaning and Presentation

The survey for this study was done online, in accordance with the principles described in Chapter 03, for the convenience of both respondents and researchers. The goal was to collect 381 responses; however, only 200 responses were collected and analyzed. 60.36 percent of people responded. According to Roscoe (as referenced in Bougie and Sekaran, 2019), a sample size of 30 to 500 is generally regarded adequate for most research projects. As a result, the resulting sample size of 200 replies is regarded adequate for the analysis based on the provided recommendations.

4.5 Demographic Data Analysis

The data collection approach involved obtaining information on the respondents' personal characteristics such as gender, age, educational qualifications, years of trade sector experience, target clients, and geographical market. This section tries to provide a detailed summary of the characteristics of the respondents, offering an overview of their profile.

4.5.1 Sample by Gender

Based on Figure 4.1, among the 200 respondents, 144 (72.0 percent) were male, while 56 (28.0 percent) were female. These numbers indicate that the male respondents constitute the majority.

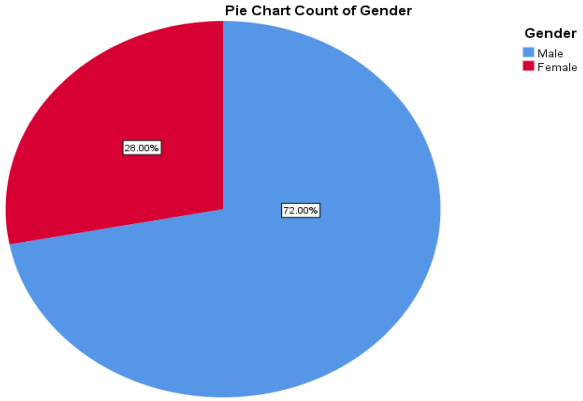


Figure 4.1 - Gender
(Source – Research Data)

4.5.2 Sample by Age

According to Figure 4.2, the largest proportion of respondents (34.50 percent) falls within the age group of 18 to 25 years. The category of 26 to 30 years represents 33 percent, followed by the 31 to 40 years category, which accounts for 26.50 percent. A smaller percentage (3.0 percent) of respondents belong to the above 50 years category.

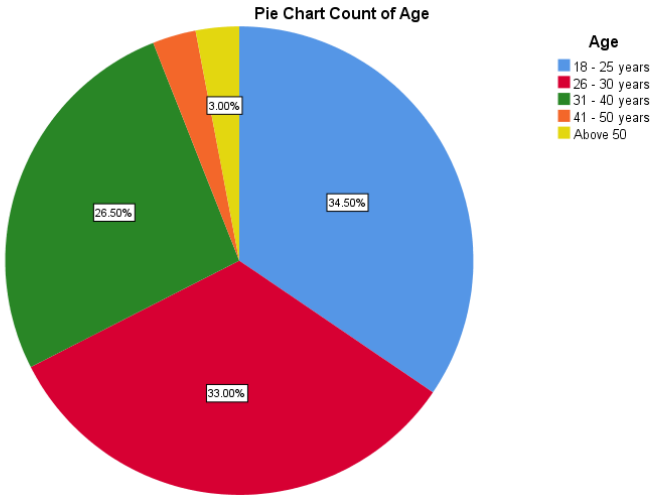


Figure 4.2 - Age
(Source – Research Data)

4.5.3 Sample by Level of Education

According to the data presented in Figure 4.3, the majority of respondents were involved in higher studies. Specifically, approximately 44.0 percent were at the advanced level, 21.0 percent were pursuing a degree, 19.50 percent were undertaking a diploma or advanced diploma, 14.50 percent were at the ordinary level, and 1.0 percent were pursuing an MBA or higher qualification. These statistics indicate that the sample consisted of educated individuals, suggesting that their participation in the survey positively influenced its quality.

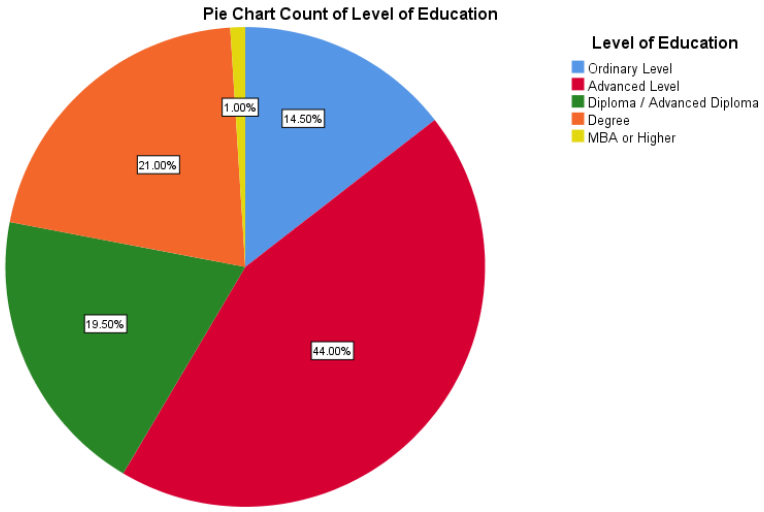


Figure 4.3 - Level of Education
(Source – Research Data)

4.5.4 Sample by Years in Trade Sector

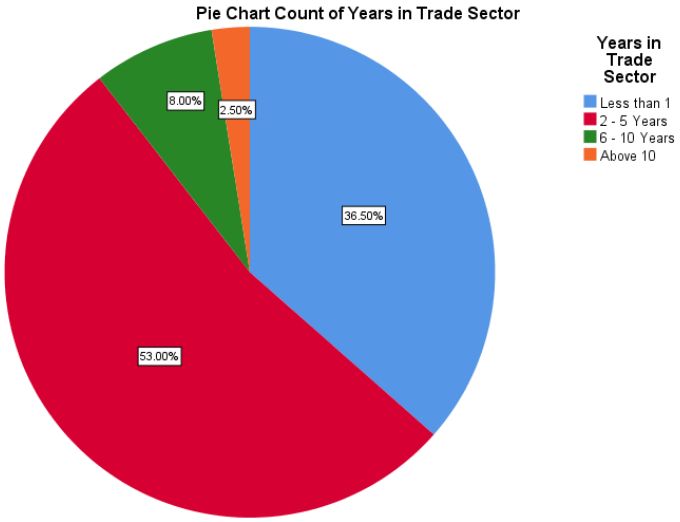


Figure 4.4 - Years in Trade Sector
(Source – Research Data)

Based on the data depicted in Figure 4.4, the majority of respondents (53.0 percent) have 2 to 5 years of experience in the trade sector. Additionally, 36.5 percent of respondents have less than 1 year of experience, 8.0 percent have 6 to 10 years of experience, and 2.5 percent have more than 10 years of experience in the trade sector.

4.5.5 Sample by Target Customers

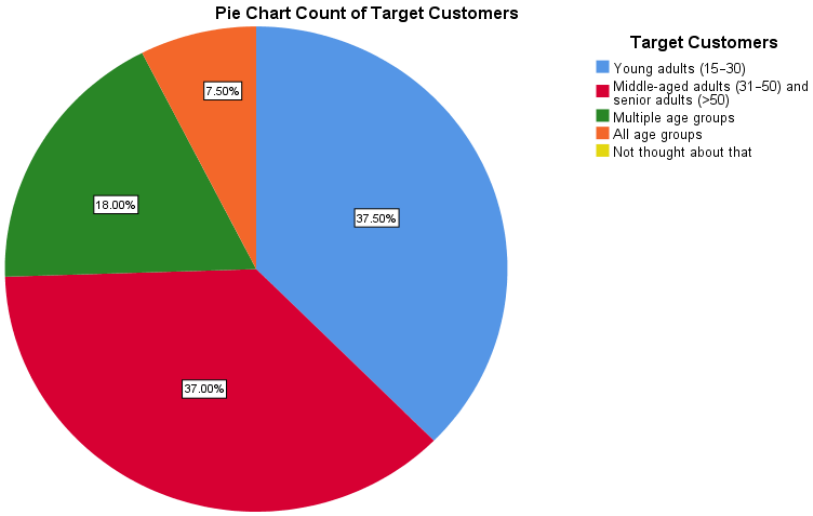


Figure 4.5 - Target Customers
(Source – Research Data)

Among the target customers, the largest proportion, 37.5 percent, falls within the young adult age range of 15 to 30 years. Additionally, 37 percent of the target customers belong to the middle-aged adult category, spanning the age range of 31 to 50 years, as well as 18 percent of senior adults above 50 years.

4.5.6 Sample by Geographical Market

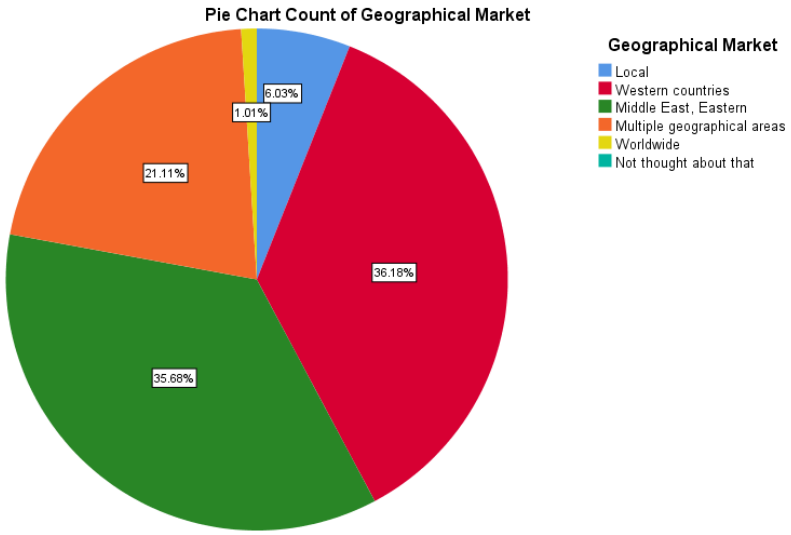


Figure 4.6 – Geographical Market
(Source – Research Data)

According to Figure 4.6, the geographical market of the surveyed respondents is distributed as follows: 35.68 percent belong to the Middle East and Eastern countries, 36.18 percent represent

Western countries, 21.11 percent encompass multiple geographical areas, 6.03 percent pertain to the local region, and 1.01 percent have a worldwide presence.

4.6 Testing Validity and Reliability

To assess the quality of the data, a pilot test was conducted in the Western province with 40 respondents. This test included validity and reliability analyses, utilizing quantitative analysis methods. The pilot test aimed to evaluate the effectiveness and accuracy of the questionnaire in addressing the research problem.

4.6.1 Test for Convergent Validity

Table 4.1 presents the assessment of convergent validity for the sample, utilizing measures such as Average Variance Extracted (AVE), Bartlett's test of sphericity, and the Kaiser-Meyer-Olkin (KMO) measure of sample adequacy. The table includes the corresponding values for the dependent variable and independent variables, allowing for a comprehensive understanding of the convergent validity of the variables in the research.

Table 4.1 - Full Data Test - Convergent Validity Test Results

Variable	KMO	Bartlett's Test Significance Value	Average Variance Extracted (AVE)
Technical Expertise	.721	.000	.744
Behavioral Control	.769	.000	.955
Perceived Benefits	.773	.000	.748
Security Concerns	.758	.000	.656
Attitude Toward Using	.631	.000	.642
Adoption of IT Systems	.707	.000	.536

In order to ascertain convergent validity, several prerequisites need to be fulfilled, which encompass a KMO value surpassing 0.5, AVE value exceeding 0.5, and a significance level lower than 0.05 for Bartlett's test. After conducting an analysis of Table 4.1, it becomes apparent that all variables exceed the KMO threshold of 0.5, thereby indicating satisfactory sampling adequacy. Furthermore, it is worth noting that all variables demonstrate AVE values that exceed the threshold of 0.5, thereby providing additional evidence in favor of convergent validity.

Furthermore, the p-values obtained from Bartlett's test are lower than the predetermined significance level of 0.05. This suggests that all the variables included in the study satisfy the minimum criteria for convergent validity.

4.6.2 Test for Discriminant Validity

The evaluation of discriminant validity holds significant importance in ascertaining the uniqueness of variables within a given research investigation. This concept pertains to the extent to which a measure does not exhibit strong correlations with other constructs that it aims to differentiate from. The present study assesses discriminant validity through the examination of the squared correlation between each dimension and its corresponding AVE value. When the squared correlation value is less than the AVE value, it suggests that the variables demonstrate discriminant validity. When the squared paired correlation is lower than the AVE value, it indicates that the variables possess discriminant validity. This finding suggests that the variables are distinct from one another and measure different aspects or constructs. By conducting this analysis, we can ensure that the variables employed in the study reliably measure unique dimensions and do not display strong correlations with each other.

Table 4.2 - Full Data Set - Discriminant Validity Test Results

Correlations

		Mean_TE	Mean_BC	Mean_PB	Mean_SC	Mean_ATU
Mean_TE		**.744**				
Mean_BC	Pearson Correlation	.504	**.955**			
	Squared Correlation	.254				
Mean_PB	Pearson Correlation	.406	.276	**.748**		
	Squared Correlation	.164	.076			
Mean_SC	Pearson Correlation	.367	.314	.287	**.656**	
	Squared Correlation	.134	.098	.082		
Mean_ATU	Pearson Correlation	.674	.461	.548	.458	**.642**
	Squared Correlation	.454	.212	.300	.209	

To ensure the distinctiveness of variables and the measurement of different constructs in a study, the assessment of discriminant validity is crucial. In Table 4.2, the results of the discriminant validity test are presented. It is essential to examine two key measures for each variable: the AVE value and the Squared Pearson Correlation value. The AVE value should be greater than 0.5, indicating sufficient variance within each construct. On the other hand, the Squared Pearson Correlation value should be lower than the corresponding AVE value.

Upon analyzing the findings in Table 4.2, it is confirmed that all dimensions exhibit AVE values exceeding 0.5, signifying an adequate level of variance within each construct. Furthermore, the Squared Pearson Correlation values are lower than their respective AVE values. These results provide evidence of discriminant validity, suggesting that the independent variables in this study reliably measure distinct constructs and do not exhibit strong correlations with each other.

4.6.3 Test for Reliability

The study utilized the concept of inter-item consistency reliability in order to evaluate the dependability of the measurements. This methodology assesses the degree of internal consistency in respondents' responses to all items within a given measure. The reliability of the measurement was assessed using Cronbach's Alpha coefficient, which is a commonly utilized indicator of internal consistency. A commonly employed criterion for establishing acceptable internal consistency is the utilization of a threshold value of 0.7.

Table 4.3 - Full Data Set - Reliability Test Results

Variable	Cronbach's Alpha
Technical Expertise	.866
Behavioral Control	.977
Perceived Benefits	.882
Security Concerns	.821
Attitude Toward Using	.853
Adoption of IT Systems	.706

The Cronbach's Alpha values for each dimension are presented in Table 4.3, revealing that all dimensions exhibit Cronbach's Alpha values exceeding 0.7. This finding suggests that the variables exhibit strong internal consistency, thereby ensuring the reliability of the measurements.

4.7 Chapter Summary

The chapter begins with a thorough examination of the validity and reliability of the data acquired for the study. A preliminary test was performed prior to the whole data collection process in order to demonstrate the trustworthiness of the data. Following the pilot test, the researchers presented the demographic distribution of survey respondents. The authors provide a thorough explanation of the percentages and proportions relevant to the demographic features of

the participants, which include age, gender, education level, and occupation. Following that, the entire data set was evaluated for validity and reliability.

CHAPTER 05 – ANALYSIS AND DISCUSSION

5.1 Descriptive Analysis

To collect data, the survey questionnaire used a 1-5 Likert scale. The collected questions were subjected to a factor loadings analysis with a criteria of 0.5 or above. Only one question was left out of the analysis, while all others were included. Table 5.1 contains detailed criteria for interpreting descriptive statistics and histograms.

Skewness is a statistical term used to evaluate data distribution patterns. It aids in determining whether the data is symmetrical or biased in one direction. Positive skewness indicates a distribution with an elongated tail on the right, whereas negative skewness indicates a protracted tail on the left. The researcher evaluated the data using the SPSS Statistical Tool and developed interpretations for each dimension or factor related with the individual variables and the dependent variable based on these criteria. The sections that follow provide thorough explanations of the results achieved.

Table 5.1 - Decision Criteria for Histograms

Score	Indicator
1 to 2.49	Low
2.50 to 3.49	Moderate
3.50 and above	High

5.1.1 Technical Expertise

The data presented in Table 5.2 indicates that the median value of the variables is 4.25, signifying that a majority of respondents have selected responses falling within the "Agree" and "Strongly Agree" range. Further reinforcing this trend, the mode of the distribution is 4.75, highlighting the prevalence of these response options. In Figure 5.1, the histogram depicting technical expertise exhibits a prominent peak around the mean value of 4.21. The moderate spread of responses around the mean is evident from the standard deviation of 0.686. Notably, the distribution is negatively skewed, as indicated by the skewness value of -1.762. This skewness suggests that the majority of responses are concentrated towards the right end of the distribution, thereby supporting the notion that technical expertise holds significant importance in the adoption of IT systems.

Table 5.2 - Frequencies Table of Technical Expertise

Statistics

Mean Technical Expertise

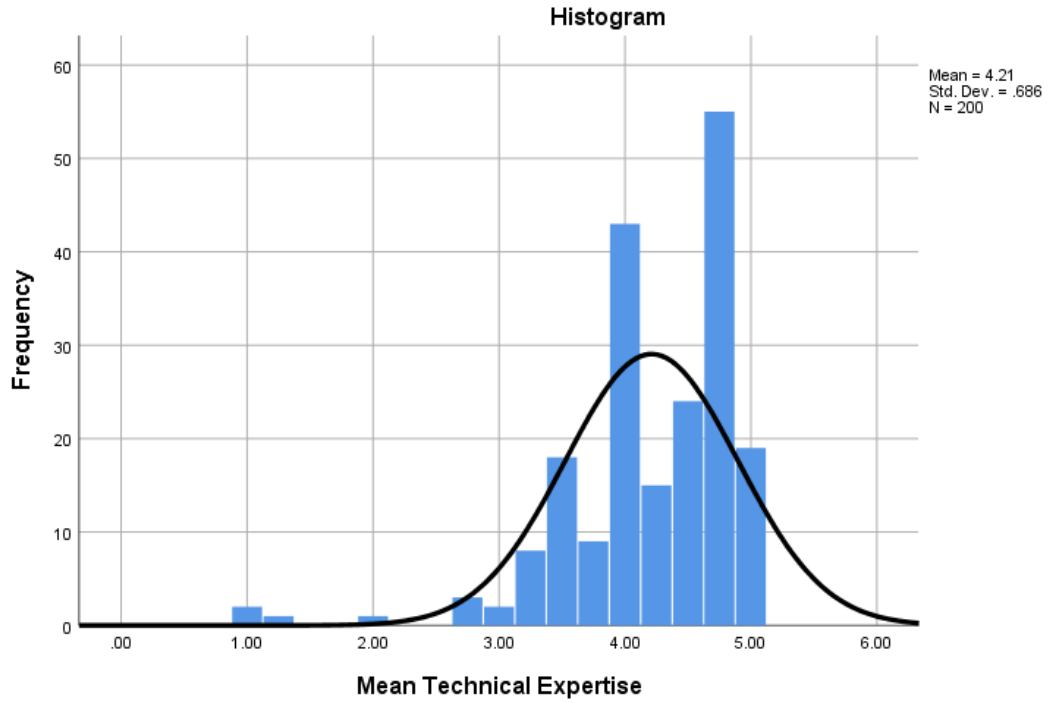
N	Valid	200
	Missing	0
Mean		4.2113
Median		4.2500
Mode		4.75
Std. Deviation		.68642
Skewness		-1.762
Std. Error of Skewness		.172
Kurtosis		5.249
Std. Error of Kurtosis		.342

(Source – Survey Data)

Figure 5.1 - Histogram of Technical Expertise
(Source – Survey Data)

5.1.2 Behavioral Control

Based on the data presented in Table 5.3, it can be observed that the median and mode values of the variable distributions are both 4.00. This finding suggests that a significant proportion of respondents have chosen responses that fall under the "Agree" category. The histogram representing behavioral control, as shown in Figure 5.2, displays an average value of 4.03. The standard deviation of 0.744 indicates a moderate degree of variability in responses pertaining to behavioral control, as observed by the average spread around the mean. The observed distribution exhibits a negative skew, as indicated by a skewness coefficient of -1.104. The



observed skewness suggests that a significant proportion of responses are clustered towards the positive end of the distribution, indicating a pronounced preference for regarding behavioral control as a crucial determinant.

Table 5.3 - Frequencies Table of Behavioral Control

Statistics

Mean Behavioral Control

N	Valid	200
	Missing	0
Mean		4.0317
Median		4.0000
Mode		4.00
Std. Deviation		.74468
Skewness		-1.104
Std. Error of Skewness		.172
Kurtosis		2.721
Std. Error of Kurtosis		.342

(Source – Research Data)

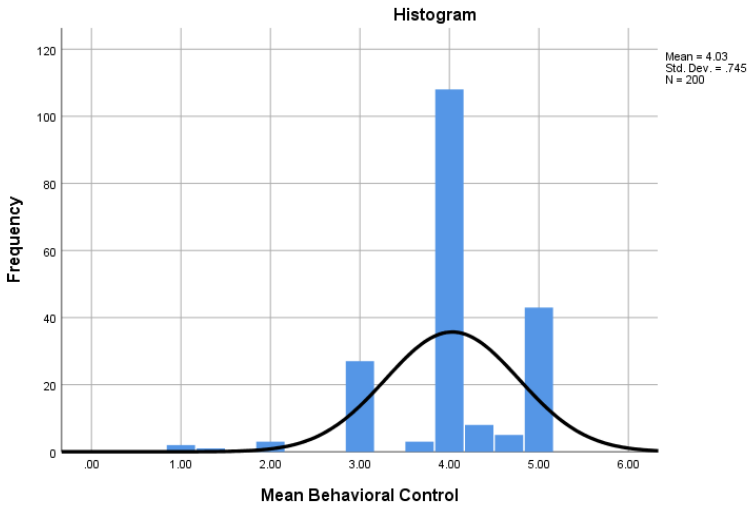


Figure 5.2 - Histogram of Behavioral Control (Source – Research Data)

5.1.3 Perceived Benefits

Table 5.4 - Frequencies Table of Perceived Benefits

Statistics

Mean Perceived Benefits

N	Valid	200
	Missing	0
Mean		3.9988
Median		4.0000
Mode		4.00
Std. Deviation		.62229
Skewness		-1.132
Std. Error of Skewness		.172
Kurtosis		2.502
Std. Error of Kurtosis		.342

(Source – Research Data)

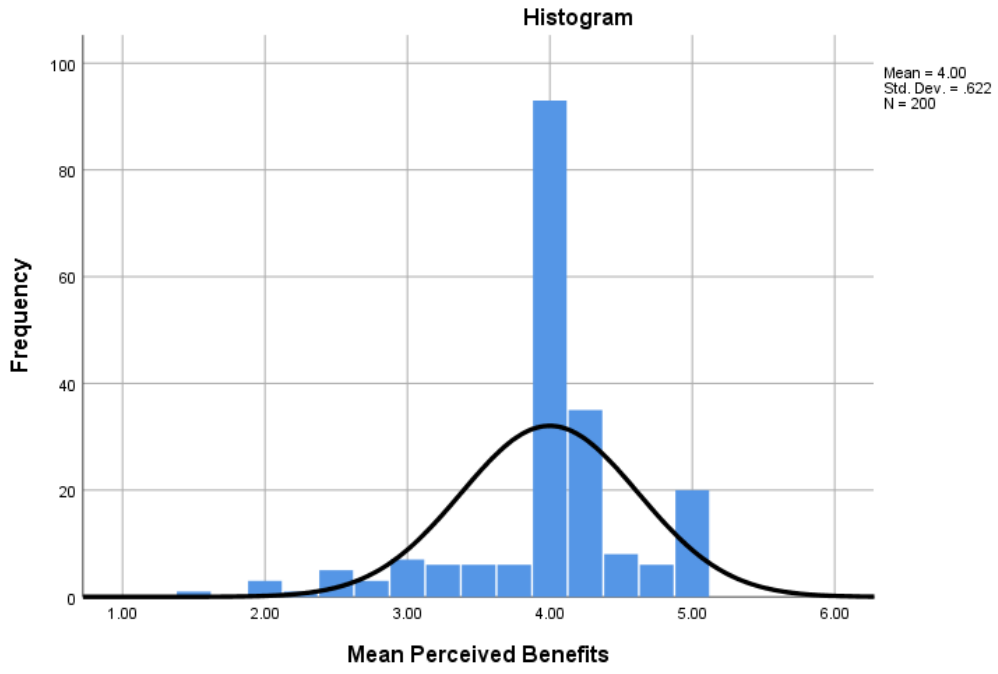


Figure 5.3 - Histogram of Perceived Benefits (Source – Research Data)

According to the data provided in Table 5.4, it can be observed that the median and mode values of the variable distributions are both 4.00. This suggests that a significant proportion of the participants concurred with the statement pertaining to the influence of perceived benefits on the adoption of IT systems. The histogram in Figure 5.3 illustrates the distribution of perceived benefits, indicating a moderate dispersion around the mean value of 3.99. The standard deviation, measuring the variability of the data points, is calculated to be 0.622. This finding

indicates a moderate degree of variability in participants' responses regarding their perceived benefits. The distribution exhibits a negative skew, as indicated by a skewness score of -1.132, suggesting that the majority of responses are clustered towards the right tail of the distribution. This finding supports the consensus among participants that the perceived advantages play a substantial role in the adoption of information technology systems.

5.1.4 Security Concerns

Table 5.5 - Frequencies Table of Security Concerns

Statistics

Mean Security concerns

N	Valid	200
	Missing	0
Mean		4.2513
Median		4.2500
Mode		4.00[a]
Std. Deviation		.54132
Skewness		-1.993
Std. Error of Skewness		.172
Kurtosis		8.530
Std. Error of Kurtosis		.342

a. Multiple modes exist. The smallest value is shown

(Source – Research Data)

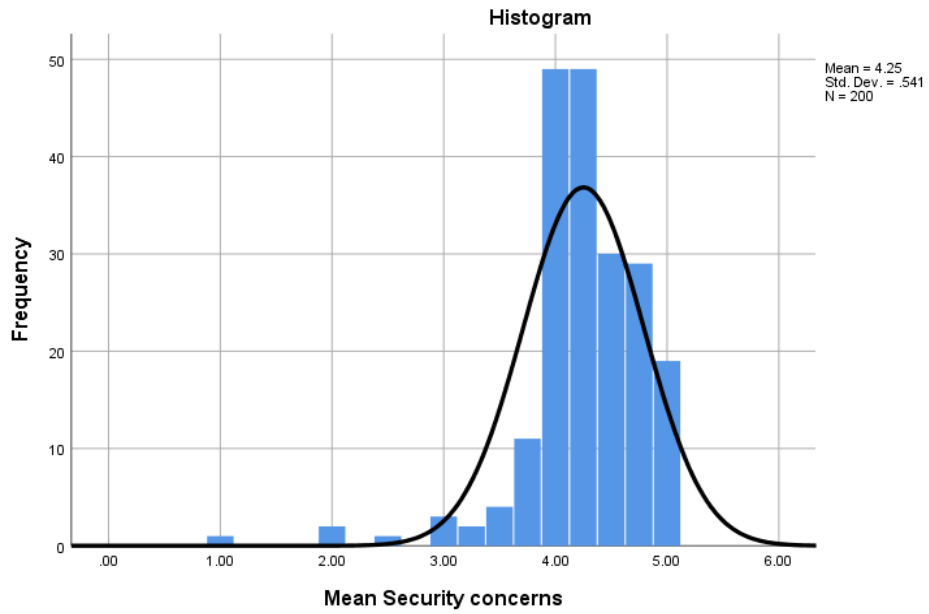


Figure 5.4 - Histogram of Security Concerns (Source – Research Data)

The data presented in Table 5.5 reveals that for the security concerns variable, the median and mode values are 4.25 and 4.50, respectively. These values indicate that a majority of respondents

selected the "Agree" option, emphasizing their concerns regarding security. Figure 5.4, displaying the corresponding histogram, depicts an average spread around the mean, which has a value of 0.541, suggesting a relatively narrow distribution. With a mean score of 4.25 falling into the high category, it is evident that respondents place significant importance on security concerns. Moreover, the distribution is negatively skewed, with a skewness score of -1.993, indicating that the majority of respondents' responses are concentrated towards the right side of the distribution. This reinforces the notion that security concerns play a crucial role in the adoption of IT systems.

5.1.5 Attitude Toward Using

According to the data provided in Table 5.6, the variable distributions indicate that the median value is 4.00 and the mode value is 4.25. This finding suggests that a considerable percentage of participants opted for the "Agree" choice when indicating their inclination towards utilizing the variable. The histogram shown in Figure 5.5 displays a relatively narrow distribution characterized by a mean value of 0.560 and a moderate level of dispersion. The average score of 3.83 is indicative of a high rating, implying that participants generally hold a favorable disposition towards the utilization of information technology systems. Additionally, it is worth noting that the distribution exhibits a negative skew, as evidenced by a skewness coefficient of -0.772. This observation indicates that a significant proportion of participants' answers are clustered towards the higher end of the distribution, indicating a positive inclination towards the utilization of IT systems.

Table 5.6 - Frequencies Table of Attitude Toward Using

Statistics

Mean Attitude Toward Using

N	Valid	200
	Missing	0
Mean		3.8338
Median		4.0000
Mode		4.25
Std. Deviation		.56058
Skewness		-.772
Std. Error of Skewness		.172
Kurtosis		1.891
Std. Error of Kurtosis		.342

(Source – Research Data)

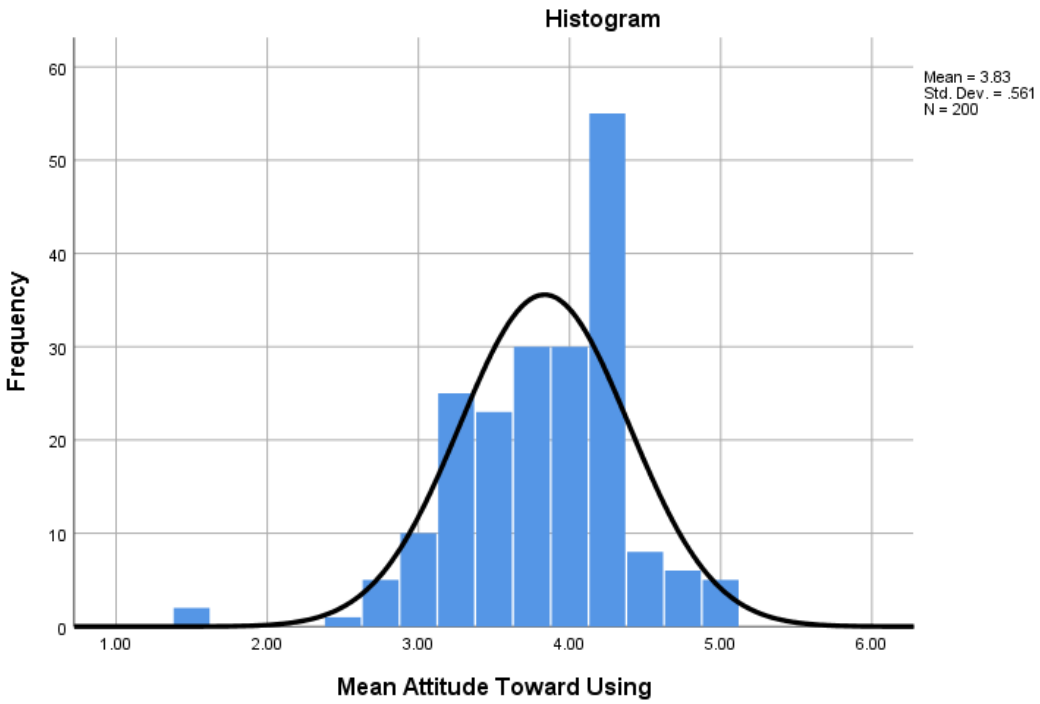


Figure 5.5 - Histogram of Attitude Toward Using
(Source – Research Data)

5.2 Testing of Hypothesis

In order to thoroughly evaluate the association between the dependent variable and the independent variables, hypothesis testing was performed on each individual factor within the independent variable. The Pearson correlation coefficient test was utilized to assess the relationship between each independent variable and the dependent variable. The statistical test described allows for the measurement of the magnitude and direction of the linear association between two variables. Through the analysis of correlation coefficients, one can ascertain the degree of association between the independent variables and the dependent variable. This analysis offers a comprehensive comprehension of the interrelationship between the variables under investigation.

Table 5.7 - Results of Hypothesis Test

Independent Variable	Pearson Correlation Coefficient	Significance of Coefficient	Conclusion
Technical Expertise	.401	.000	$H1_0$ - Rejected $H1_1$ - Accepted

Behavioral Control	.256	.000	$H2_0$ - Rejected $H2_1$ - Accepted
Perceived Benefits	.275	.000	$H3_0$ - Rejected $H3_1$ - Accepted
Security Concerns	.386	.000	$H4_0$ - Rejected $H4_1$ - Accepted
Attitude Toward Using	.361	.000	$H5_0$ - Rejected $H5_1$ - Accepted

Table 5.7 presents the results of the Pearson correlation coefficient analysis, examining the relationship between the independent variables (Technical Expertise, Behavioral Control, Perceived Benefits, Security Concerns, and Attitude Toward Using) and the adoption of information technology systems in micro enterprises within the trade sector. The findings reveal significant positive correlations between all the independent variables and technology adoption.

Technical Expertise demonstrates a correlation coefficient of 0.401 ($p < 0.001$), indicating a strong positive association with the adoption of information technology systems. This result supports the rejection of the null hypothesis ($H1_0$) and the acceptance of the alternative hypothesis ($H1_1$). Similarly, Behavioral Control exhibits a correlation coefficient of 0.256 ($p < 0.001$), suggesting a significant positive correlation with technology adoption. Hence, the null hypothesis ($H2_0$) is rejected, and the alternative hypothesis ($H2_1$) is accepted.

Furthermore, Perceived Benefits show a correlation coefficient of 0.275 ($p < 0.001$), indicating a noteworthy positive relationship with the adoption of information technology systems. This finding supports the rejection of the null hypothesis ($H3_0$) and the acceptance of the alternative hypothesis ($H3_1$). Moreover, Security Concerns exhibit a correlation coefficient of 0.386 ($p < 0.001$), indicating a substantial positive correlation with technology adoption. Consequently, the null hypothesis ($H4_0$) is rejected, and the alternative hypothesis ($H4_1$) is accepted. Finally, Attitude Toward Using demonstrates a correlation coefficient of 0.361 ($p < 0.001$), suggesting a significant positive association with the adoption of information technology systems. Therefore, the null hypothesis ($H5_0$) is rejected, and the alternative hypothesis ($H5_1$) is accepted.

Based on the results of the hypothesis test, all of the independent variables (Technical Expertise, Behavioral Control, Perceived Benefits, Security Concerns, and Attitude Toward Using) have significant positive correlations with the adoption of information technology systems in micro

enterprises in the trade sector. These findings indicate that these factors play a crucial role in influencing the adoption of technology systems and should be considered when designing strategies to promote technology adoption in micro enterprises.

5.3 Multiple Regression Model

5.3.1 Model Summary

The R-squared value for the model is 0.234, suggesting that around 23.4% of the variability in the dependent variable (Mean Adoption of IT Systems) can be accounted for by the independent variables. This indicates that the independent variables collectively have a moderate level of explanatory power in relation to the dependent variable.

To provide a more accurate estimate of the model's explanatory capability, the adjusted R-squared value is considered. The adjusted R-squared, which takes into account both the number of predictors and the sample size, is calculated to be 0.214. This adjusted value provides a more reliable measure of the model's explanatory strength by accounting for the potential impact of including additional predictors and the effect of the sample size on the model's performance.

Table 5.8 - Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.484[a]	.234	.214	.38885	1.705

a. Predictors: (Constant), Mean Attitude Toward Using, Mean Security concerns, Mean Behavioral Control, Mean Perceived Benefits, Mean Technical Expertise

b. Dependent Variable: Mean Adoption of IT Systems

(Source – Research Data)

5.3.2 ANOVA

The ANOVA table reveals that the regression model is highly significant ($F = 11.854$, $p < .000$), indicating that the combination of Mean Attitude Toward Using, Mean Security Concerns, Mean Behavioral Control, Mean Perceived Benefits, and Mean Technical Expertise significantly explains the variation in Mean Adoption of IT Systems. The regression sum of squares is 8.961, and the residual sum of squares is 29.334. These results suggest that the predictors have a substantial impact on the dependent variable, providing valuable insights into the factors influencing IT system adoption in micro enterprises in the trade sector.

Table 5.9 - ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.961	5	1.792	11.854	.000[b]
	Residual	29.334	194	.151		
	Total	38.295	199			

a. Dependent Variable: Mean Adoption of IT Systems

b. Predictors: (Constant), Mean Attitude Toward Using, Mean Security concerns, Mean Behavioral Control, Mean Perceived Benefits, Mean Technical Expertise

(Source – Research Data)

5.3.3 Coefficients

Table 5.10 - Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.627	.260		13.111	.000
	Mean Technical Expertise	.160	.057	.250	2.806	.006
	Mean Behavioral Control	.133	.044	.227	2.209	.027
	Mean Perceived Benefits	.104	.053	.205	1.810	.048
	Mean Security concerns	.207	.058	.255	3.567	.000
	Mean Attitude Toward Using	.147	.076	.232	2.228	.020

a. Dependent Variable: Mean Adoption of IT Systems

(Source – Research Data)

The coefficient table presents the results of the regression analysis, highlighting the significance and impact of each predictor variable on the Mean Adoption of IT Systems.

Upon examining the table, it is evident that all predictor variables (Mean Technical Expertise, Mean Behavioral Control, Mean Perceived Benefits, Mean Security Concerns, and Mean Attitude Toward Using) significantly contribute to predicting the Mean Adoption of IT Systems, as indicated by their associated p-values.

The unstandardized coefficients (beta values) provide insights into the magnitude and direction of the relationship between each predictor and the dependent variable. For every one-unit increase in Mean Technical Expertise, there is a 0.160 increase in the Mean Adoption of IT Systems ($p = 0.006$). Similarly, one-unit increases in Mean Behavioral Control, Mean Perceived Benefits, Mean Security Concerns, and Mean Attitude Toward Using correspond to 0.133 ($p = .027$), 0.104 ($p = .048$), 0.207 ($p < .001$), and 0.147 ($p = .020$) increases in the Mean Adoption of IT Systems, respectively.

These results demonstrate that the examined factors (technical expertise, behavioral control, perceived benefits, security concerns, and attitude toward using) play significant roles in influencing the adoption of information technology systems in micro enterprises in the trade sector. The low p-values indicate that the relationships between these variables and the dependent variable are statistically significant, providing strong evidence of their importance in determining the level of IT system adoption.

5.4 Chapter Summary

The section presents an analysis of the descriptive statistics, hypotheses, and multiple regression models. The results indicate that all alternative hypotheses were supported, revealing a significant positive relationship between the independent variables and the dependent variable. This suggests that factors such as Technical Expertise, Behavioral Control, Perceived Benefits, Security Concerns, and Attitude Toward Using play a crucial role in influencing the adoption of information technology systems in micro enterprises within the trade sector. The findings emphasize the importance of considering these factors when designing strategies to promote technology adoption in micro enterprises. The insights from this research are valuable for researchers, practitioners, and policymakers seeking to understand and enhance technology adoption in this context.

CHAPTER 06 – CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

Chapter 06 serves as the concluding section of the research study, summarizing the main findings and implications. It offers recommendations tailored to relevant individuals and organizations, suggesting actions to promote technology adoption in micro enterprises. Furthermore, the chapter identifies potential areas for future research, highlighting opportunities to expand knowledge and address limitations encountered in the current study.

6.2 Conclusion

Moreover, the study acknowledges certain limitations that should be taken into account. Firstly, the research focused specifically on micro enterprises within the trade sector, and the findings may not be generalizable to other sectors or larger organizations. Additionally, the data collected relied on self-reported responses from the participants, which may introduce response biases or inaccuracies. Furthermore, the study was conducted within a specific geographical area, and the findings may be influenced by regional or cultural factors.

In light of the research findings and limitations, several recommendations are put forth for micro enterprises in the trade sector. It is advised that organizations invest in developing technical expertise among their employees and owners to ensure a solid foundation for technology adoption. Implementing behavioral control mechanisms, such as training programs and standard operating procedures, can also facilitate the smooth integration of information technology systems. Moreover, emphasizing the perceived benefits of technology adoption and addressing security concerns through robust cybersecurity measures can encourage micro enterprises to embrace technology.

In terms of future research, this study opens avenues for further exploration. Researchers can delve deeper into understanding the specific mechanisms through which these identified factors influence technology adoption in micro enterprises. Additionally, investigating the role of external factors, such as market conditions or government policies, can provide a comprehensive understanding of the adoption process. Exploring the experiences and challenges faced by micro enterprises in different industries and regions can also contribute to a more comprehensive knowledge base.

In conclusion, this study sheds light on the factors influencing the adoption of information technology systems in micro enterprises within the trade sector. The findings offer valuable insights and recommendations for micro enterprises to enhance their adoption efforts. However, it is important to acknowledge the limitations of the research and recognize the need for further investigation in this field. By embracing these insights and recommendations, micro enterprises can leverage technology to improve their operations and gain a competitive edge in the market.

6.3 Recommendations

The author proposes the following recommendations.

6.3.1 Technical Expertise

According to the results of the statistical tests, technical expertise is the most strongly correlated independent variable with the dependent variable ($r = .401$, $p > .000$). Therefore, it is important to place more emphasis on this factor. To improve IT systems knowledge among MEs in the trade sector, several steps can be taken. According to Singh and Wadera (2017) and Liang and Huang (2019) conducting training programs and workshops specifically tailored to the trade sector can enhance MEs' understanding of IT systems. These programs should cover topics such as inventory management systems, point-of-sale systems, e-commerce platforms, and customer relationship management (CRM) software. The training should focus on practical applications, hands-on exercises, and real-life scenarios to ensure the knowledge gained is directly applicable to their trade operations.

In their study, Rahman et al. (2020) discussed how the adoption of IT systems within SMEs is influenced by the level of information intensity and the support provided by technology vendors. Another valuable approach is to collaborate with technology experts and consultants who specialize in the trade sector, as they come highly recommended. These professionals can offer tailored advice, system recommendations, and implementation support to address the unique needs and challenges of MEs in the trade sector. Here the incubators provide valuable support to MEs seeking to enhance their IT knowledge. They offer expert guidance, access to resources, networking opportunities, educational programs, and potential funding. Incubators connect MEs with experienced mentors, provide shared workspaces, and offer technology infrastructure. Liang and Huang (2019), Chen and Zhou (2021) and Mendoza et al. (2022) discussed more on learning culture in the organizations. MEs can learn from peers, collaborate on IT initiatives, and gain credibility through incubator affiliation. Participating in incubators helps MEs overcome financial constraints, learn new skills, and stay updated on industry trends. By leveraging the resources and support provided by incubators, MEs can effectively develop and implement IT strategies, fostering growth and success in the digital landscape.

Furthermore, as stated by Gao et al. (2021), MEs should stay informed about technological advancements and industry trends through market research and engagement with technology vendors. By following trade publications, attending technology trade shows, and exploring emerging technologies, MEs can stay ahead of the curve and make informed decisions about adopting new IT systems.

6.3.2 Behavioral Control

Since behavioral control has positive correlation with dependent variable ($r = .256$, $p > .000$), providing comprehensive training and education on IT system usage is crucial. This includes understanding the functionalities, features, and potential benefits of the systems, as well as

learning best practices for data entry, information retrieval, and system security. According to Mendoza et al. (2022), fostering a positive organizational culture that promotes the adoption and proper utilization of IT systems is vital. Management should emphasize the importance of using the systems as part of daily operations, recognize employees who demonstrate proficiency in using the systems, and provide incentives for their effective utilization. This creates a sense of accountability and encourages MEs to embrace the systems as valuable tools for their trade activities (Datta and Sheth, 2018).

Regular evaluation and feedback mechanisms should be established to monitor the effectiveness of behavioral control measures (Nguyen and Le, 2020; Tewari et al., 2019). MEs can provide feedback on their experiences, challenges, and suggestions for improving the usability and functionality of the IT systems. This feedback can inform system enhancements and updates to better align with the needs and preferences of the MEs.

6.3.3 Perceived Benefits

Perceived benefits showed a positive correlation with dependent variable ($r = .275$, $p > .000$) and it is significant variable as well. Clear communication and education about the potential advantages of IT systems is essential. MEs should be informed about how these systems can streamline operations, enhance productivity, improve customer service, and increase profitability (Singh and Wadera, 2017). Providing concrete examples and case studies showcasing successful implementations of IT systems in similar trade businesses can help MEs understand the potential benefits. As stated Liang and Huang (2019) and Rahman et al. (2020), promoting success stories and sharing testimonials from other MEs who have successfully implemented IT systems can have a positive impact on perceived benefits. MEs can learn from their peers and gain confidence in the effectiveness of IT systems by hearing about real-world experiences and tangible outcomes. Demonstrating the value of IT systems through pilot projects or trials can be effective. MEs can implement the systems on a small scale to test their functionality and measure the impact on their business. This hands-on experience allows MEs to directly observe the benefits and gain confidence in the potential value of IT systems for their trade operations (Mendoza et al., 2022). Regular evaluation and feedback mechanisms should be established to monitor the perceived benefits and satisfaction levels of MEs regarding the IT systems. MEs can provide feedback on the positive impacts they have experienced, identify areas for improvement, and suggest additional features or functionalities that would enhance the perceived benefits (Chen and Zhou, 2021).

6.3.4 Security Concerns

The previous section demonstrated that security concerns are an important element in the adoption of IT systems by micro firms which showed positive correlation with the dependent variable ($r = .386$, $p > .000$). Mendoza et al. (2022), Datta and Sheth (2018) and Nguyen and Le (2020) have shown that MEs should prioritize implementing robust cybersecurity practices. This includes utilizing secure network infrastructure, implementing firewalls, employing strong

encryption methods, and regularly updating and patching software to address vulnerabilities. The implementation of access controls is of paramount importance in order to guarantee that only individuals with proper authorization can gain access to sensitive data and systems. Micro enterprises should prioritize the implementation of robust password policies, the adoption of multi-factor authentication, and the regular review and updating of user access privileges. These measures are crucial in mitigating the potential threat of unauthorized access (Tewari et al., 2019).

Abdullah et al. (2022) have discussed that regular data backups are essential to protect against data loss or system failures. MEs should establish automated backup systems and test the restoration process to ensure data integrity and availability. Additionally, offsite or cloud backups provide an extra layer of protection in case of physical damage or theft. Maintaining up-to-date antivirus and antimalware software is critical to defend against malicious software and malware attacks. MEs should regularly update their security software and establish processes for automatic updates to ensure protection against the latest threats (Gao et al., 2021).

6.3.5 Attitudes of the Owners

The attitude of the owners toward IT system adoption is very crucial when implementing such systems in a business as the third key factor that demonstrated a substantial association with the dependent variable ($r = .361$, $p > .000$). According to Liang and Huang (2019), ME owners should be informed about how these systems can streamline operations, improve efficiency, increase productivity, and enhance customer experiences. Clear communication about the positive impacts of IT systems can help owners develop a positive attitude towards their adoption. Offering personalized consultations and demonstrations can be effective in addressing owners' concerns and doubts. Tailoring demonstrations to showcase how specific IT systems align with the unique needs and goals of the ME can help owners understand the practical applications and potential advantages. Demonstrations can also provide an opportunity for owners to ask questions, gain clarity, and visualize how the systems can contribute to their business success Chen and Zhou, 2021)

Mendoza et al. (2022) and Abdullah et al. (2022) have described that collaboration with owners throughout the IT system implementation process is vital. Involving them in decision-making, seeking their input, and addressing their preferences can foster a sense of ownership and control. This collaborative approach ensures that the IT systems align with the specific requirements and preferences of the ME, enhancing owners' confidence and positive attitudes towards the technology.

6.4 Limitations of the Study and Future Research

There are several limitations associated with the research conducted on the factors that influence the adoption of information technology systems in micro enterprises within the trade sector. The generalizability of the findings is constrained by the use of a specific sample in the study. Factors such as geographic location, industry subsectors, and organizational size were not fully

accounted for, making it important to exercise caution when applying the findings to different populations or contexts. Additionally, the study did not adequately address the influence of geographic and cultural variations on technology adoption. By focusing on a specific region, the research may not have captured the diverse nuances and complexities associated with technology adoption in micro enterprises across different regions and cultural backgrounds.

Additionally, it is important to note that the study encountered constraints in terms of data accessibility and a relatively low rate of participant response, potentially leading to the introduction of biases in the observed results. The limited quantity of data collected posed constraints on the ability to draw accurate conclusions and make generalizations about the larger population of micro enterprises in the trade sector. This restriction in the representativeness and statistical power of the analysis hinders the extent to which the findings can be applied to a broader context. Subsequent investigations ought to prioritize the acquisition of data from a more expansive and heterogeneous cohort, thereby enhancing the strength and reliability of the observed outcomes. Furthermore, the study failed to explicitly take into account industry-specific variables, thereby neglecting the distinct attributes and difficulties encountered by various sectors within the trade industry. In order to enhance the comprehensiveness of our understanding regarding technology adoption in micro enterprises, it is recommended that future research endeavors integrate industry-specific context. The rectification of these constraints will make a valuable contribution towards enhancing the precision and contextual comprehension of the variables that impact the adoption of technology in micro enterprises within the trade industry.

To address the limitations and advance understanding of technology adoption in micro enterprises within the trade sector, future research should focus on the following areas. A comparative analysis across multiple regions should be conducted to examine how geographic and cultural variations influence technology adoption. By including diverse regions with distinct characteristics, this research can uncover region-specific challenges and opportunities, allowing for more tailored strategies to promote technology adoption in micro enterprises. Additionally, industry-specific investigations should be undertaken to explore how factors such as supply chain complexities, trade regulations, and customer demands impact technology adoption within different sectors of the trade industry. This will provide a more comprehensive understanding of the unique dynamics and requirements of each industry, enabling targeted interventions to enhance technology adoption.

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APPENDIX

Questionnaire

Factors Influencing the Adoption of Information Technology Systems in Micro Enterprises in the Trade Sector

I am H. P. R. D. Piyadasa studying for a Master of Business Management in Information Technology, University of Moratuwa. I would like to invite you to take part in a research study aimed at understanding the factors that influence the adoption of Information Technology systems in Micro Enterprises in the Trade Sector as an academic fulfilment of an MBA in IT. This study aims to gain insights into why Micro Enterprises in the Trade Sector choose to use IT systems.

Participation in this study is voluntary, and you may withdraw anytime. Your responses will be kept confidential and anonymous, and the data collected will be used only for research purposes. I appreciate your time and effort completing this questionnaire and contributing to this research study.

Thank You

The Researcher:
Degree: Master of Business Management in Information Technology

- ✓ Please tick inside the box.

Part 01 – Demographic Details

- Age group (Years)

18-25	☐
26-30	☐
31-40	☐
41-50	☐
Above 50	☐

- Gender

☐ ☐

Male Female

- What is your highest educational qualification?

O/L	
A/L	
Diploma/Advanced Diploma	
Degree	
MBA or higher	

- How long has your organization been in the business of the trade sector? (Years)

Less than 1	
2-5	
6-10	
Above 10	

- Who is your target customer?

Young adults (15–30)	
Middle-aged adults (31–50) and senior adults (>50)	
Multiple age groups	
All age groups	
Not thought about that	

- Geographical Market

Local	
Western countries	
Middle East, Eastern	
Multiple geographical areas	
Worldwide	
Not thought about that	

Part 03 – Likert Scale

		1	2	3	4	5
		Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
	Technical Expertise					
01	I have knowledge of how to use IT systems that can help improve my business and increase sales.					
02	I have experienced various types of IT-related devices and systems to improve my business.					
03	I have the ability to analyze and solve technical problems of IT systems used in my business.					
04	I have the ability to communicate technical concepts to technical audiences to overcome my business issues.					
	Behavioral Control					
05	I am aware that IT systems are important for the effectiveness of my business.					
06	I can manage emotions, impulses, and behaviors to stay focused on IT systems connected to my business goals.					

07	I have the ability to evaluate IT systems performance in my business and make adjustments as needed to stay on track.					
08	I have the ability to bounce back from IT system-related failures and maintain focus and motivation.					
	Perceived Benefits					
09	IT systems have assisted me to gain new knowledge and skills.					
10	IT systems have assisted me to gain social support and social recognition.					
11	Using IT systems in my business helped me to improve my self-esteem.					
12	Using IT systems in my business helped me to increase efficiency, productivity, and convenience.					
	Security concerns					
13	I am concerned about data privacy and unauthorized surveillance.					
14	I am concerned about data tampering and unauthorized access to banking apps regarding business transactions.					
15	I am concerned about system downtime or network outages when business transactions and discussions.					
16	I am concerned about IT system					

	accuracy when business meetings and discussions.					
	Attitudes of the owners					
17	IT systems are useful and I can gain more profits through IT systems.					
18	IT systems are compatible with my current business.					
19	I enjoy working with IT systems since they are interesting to use.					
20	People who are important to me talk more confidently about IT systems and its usefulness.					
	Adoption of Information Technology systems					
21	I prefer to use IT systems over other methods whenever needed.					
22	I would like to come back to the IT systems whenever needed.					
23	I intend to engage with IT related devices and systems continuously.					
24	I would like to recommend IT systems to others to use for business purposes.					

Part 04

According to your knowledge, how can the IT industry can be enhanced to compatible with Micro Enterprises in the Trade Sector?

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