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Impact of Technology Adoption as a Key Growth Contributor for Women Micro Businesses in Malaysia

by

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ABSTRACT

Nowadays, technology evolution is essential for business growth. However, there are still loopholes in adopting technology in microbusinesses, especially amongst women microentrepreneurs. Less exposure to knowledge and experience has deterred them from adopting technology. This study examines the relationship between technology adoption readiness among women microentrepreneurs in Malaysia as a key growth contributor for women microbusinesses. Three sub-objectives are (i) to identify the technology adoption readiness of women microentrepreneurs, (ii) to examine the relationship between technology adoption readiness, business model innovation, and their technology readiness, and (iii) to investigate the mediating effects of business model innovation between the technology adoption readiness and their technology readiness. This quantitative study distributed the survey questions to 421 women microentrepreneurs from five regions in Malaysia through digital platforms (i.e., WhatsApp, email, and Telegram). This study selected the respondents through non-probability sampling and analysed the data through descriptive, Pearson-correlation coefficient, and multiple regression analyses. The innovation factor has the highest mean and standard deviation, followed by optimism, insecurity and discomfort. The correlation coefficient for business model innovation and technology ready women microentrepreneurs is $r = 0.495$, $p<0.01$, meanwhile $r = 0.577$, $p<0.01$ for business model innovation and technology adoption readiness and $r = 0.488$, $p<0.01$ for technology adoption readiness and technology ready women microentrepreneurs. Technology adoption readiness is significant and positively related to both technology ready women microentrepreneurs and business model innovation. Next, business model innovation is significant and positively allied with technology ready women microentrepreneurs. Multiple regressions also reveal that after mediating variable business model innovation was considered, the β weight for technology adoption readiness was also significant. Thus, business model innovation acts as a partial mediator in the association between technology adoption readiness and technology ready women microentrepreneurs. There is no proof to reject the hypothesis

of H3. Business model innovation mediates the relationship between technology adoption readiness and technology ready women microentrepreneurs. This study contributes to theoretical development by demonstrating that business model innovation mediates the readiness for technology adoption and technology ready women microentrepreneurs. This study also designs intervention programmes to improve technology adoption readiness and technology ready women microentrepreneurs. Thus, they can improve their business performance by revisiting their business plans and strengthening technology usage.

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CHAPTER 1
INTRODUCTION

1.1 Introduction

This chapter presents the background of the study and the problem statement that motivated the researcher to implement this study. Then, this chapter enlists the research objectives and research questions that drive this study before emphasising its scopes. Other than that, this chapter also highlighted the definition of key terms that are frequently used throughout the study. This chapter ends by presenting the organisation of the study, which consists of five independent chapters.

1.2 Background of the Study

Technological adoption is the acceptance, societal use, and integration of new technology. Malaysia is one of the nations trying to become one of the most competitive nations in the world when it comes to the adoption of technology across a variety of industries, despite its status as a developing nation. Examples are education, tourism, construction, entrepreneurship, and integrated facilities management, among others. Edge Markets (2019) reported that Tun Dr. Mahathir Mohamad, Malaysia's former Prime Minister, made the National Entrepreneurship Policy 2030, which aims to make Malaysia a more entrepreneurial country. Entrepreneurs that can predict technology trends will be able to implement new technologies well ahead of their competition. For such businesses, this will provide a competitive advantage. The technology itself will help, support, and bring the company to the highest level of performance.

One of the objectives outlined in the previously stated National Entrepreneurship Policy 2030 is to aid and assist Micro, Small, and Medium-Sized Businesses (also known as Small and Medium-Sized Enterprises) in improving their company performance and quality. The government is trying to help and strengthen micro businesses, which could lead to good economic growth for the businesses themselves and indirectly help the growth of the Malaysian economy as a whole.

Women were viewed as being primarily active in retail and wholesale sales in the early years because these activities didn't need for specialised knowledge, labour, or capital. In fact, it was less difficult and hazardous than other business ventures (Fatimah 1975). According to research conducted by Suaibah et al. (2005), female entrepreneurs are concentrated in the food and beverage sector, the clothing industry, and the retail trade. Female-owned small companies are generally simple commercial activities or microlevel firms that require just the most basic of technology to run, according to a study by Chee et al. (2012). These businesses are often low-tech in nature, and their operations rely primarily on human labour.

Since the involvement of women in the SME sector is trending, women-owned companies in Malaysia have increased to 186,930 firms in 2015, accounting for around 20.6% of the country's total number of micro, small, and medium-sized enterprises (SME Corp Malaysia 2016). Following global trends, the collective participation of women in micro businesses is also rising (Drine & Grach 2012). This is due to a number of reasons, including financial incentives, that encourage women to start their own enterprises and become self-employed rather than being employed.

According to SME Corporation Malaysia, women-owned small and medium-sized enterprises (micro firms) are businesses in which women own at least 51% of the equity or in which the CEOs own at least 10% of the stock. In 2015, SME Corp Malaysia (2016) reported that Malaysia had 186,930 female-owned small and medium-sized enterprises (micro businesses), accounting for approximately 20.6% of all micro businesses (2010: 127,429 firms). There was a 46.7% increase when compared to the same period in 2010. Women-owned small and medium-sized enterprises (microbusinesses) dominate the services sector. This is followed by the manufacturing sector in terms of the percentage of total micro businesses owned by women (92.7%).

Nugroho and Chowdhury (2015) also pointed out that women's adoption of technology in micro businesses is largely affected by their responsibilities at home as housewives and mothers. Female microentrepreneurs confront a variety of challenges, including juggling home duties while performing well in their enterprises (Karami et al. 2013; Nugroho & Chowdhury 2015). Due to the challenges faced by women microbusiness owners (home obligations of women, particularly married women or women entrepreneurs with families), women entrepreneurs are having difficulties in attaining a long-term success.

As a result, the use of technology to encourage business model innovation has grown in importance during the past several years. This is evident by technology adoption among female microbusiness owners (MBOs), compared to their male counterparts, who are less likely to adopt the necessary technology innovations to be successful (Bushra et al. 2015). Women entrepreneurs have several challenges, and technology adoption

readiness can assist them to overcome these challenges (Nugroho & Chowdhury 2015). The GEM Report of Malaysia (2013) also mentioned that in order to remain competitive in the market, Malaysian businesses must enhance their skills and keep ahead of new technological advancements. According to Salwani et al. (2009), technology adoption readiness may be a significant growth driver for corporate innovation.

Individual traits and motives of performance predictors are frequently the focus of present research, according to Teoh and Chong (2007). The majority of entrepreneurship studies are primarily concerned with comparing and contrasting male and female founders (Syed, Mohd Fauzi & Omar 2011). Several of these studies examine the factors that influence women's decision to start their own businesses as well as the difficulties they encounter (Syed, Zizah & Fauzi 2012). Another attempt was made to describe what traits, aside from a demographic background, women entrepreneurs need in order to be successful. Syed and Xavier (2012) say that scholars have paid more attention to studies about entrepreneurial settings, opportunities, and growth. However, there has not been much consideration of how the adoption of technology by women-owned microbusinesses would affect the development of new business models.

1.3 Problem Statement

Malaysia has achieved tremendous progress in recent years in its attempts to establish high-quality, resilient, and lucrative firms, particularly among women. The government has pushed women to foster an entrepreneurial culture (Syed, Mohd. Fauzi & Omar 2011). The State Economic Development Corporation (SEDC), the Ministry of Women, Family, and Community Development, the Ministry of Rural and Regional Development, the Department of Community Development (KEMAS), and the Department of Agriculture (DOA) have all provided various forms of assistance to women who are involved in prostitution, including expertise and skills, as well as cash and other resources.

However, it was discovered that many female entrepreneurs continue to encounter a range of difficulties throughout the beginning and development stages of their businesses despite the removal of certain restrictions. The results of previous research revealed that Malaysian women entrepreneurs encountered many difficulties in both the local and international markets throughout the phases of company start-up and development as well as domestic operations and foreign operations (Hodges et al. 2015; Mahmood & Hanafi 2013; Ilhaamie 2014). Their inability to integrate technology into their companies due to a fear of losing money, excessive time consumption, and lack of risk tolerance hinders them from moving their businesses to another level.

Although technology advancement is increasing in Malaysia, it is still disputable whether women-owned microbusinesses are ready to adopt business model innovation in their businesses. This is particularly due to the repetition of the same business model,

which makes the innovation in business models stagnant. Women business owners still have a limited awareness of and use of technology, as seen by the persistence of the same business model. The use of similar business models will affect customers' psychology in buying the products offered by them. This will cause a stagnation in revenue, thereby lowering the business's opportunity to succeed. In this instance, it is crucial for women-owned microbusinesses to adopt technology advancement in order to innovate their business model, which can grow their revenue.

Furthermore, despite the fact that academics frequently debate the influence of technology adoption readiness on businesses, study on the topic is limited to the development of new business models. Numerous studies have examined the connections between the variables that affect the performance of small, medium-sized, and enterprise-level enterprises, while others have concentrated on the problems and difficulties faced by women-owned businesses (Mulugeta 2014; Nasip et al. 2015; Wiklund & Shepherd 2005). There is a dearth of research on the effects of technology adoption preparedness and business model innovation on the growth of micro companies owned by women in Malaysia, particularly in the services sector. As a consequence, a large number of gaps have emerged, especially in the context of women-owned microbusinesses in Malaysia.

In the meantime, there have been many studies and research in the area of entrepreneurship, and only recently has there been significant interest in female entrepreneurs (Anwar & Amber 2012). Studies in general investigate the relationship between the factors that affect micro, small and medium enterprise performance (see Mulugeta 2014; Nasip et al. 2015; Wiklund & Shepherd 2005), while some other studies

focus on issues and challenges faced by women-owned businesses (see Satyajit et al. 2017; Wube 2010).

A lack of research, notably in Malaysia and the services sector, on the relationship between business model innovation and technology adoption preparedness as a key element in the growth of women-owned microbusinesses. This means that there are gaps that can be researched in business model innovation. The literature tried to relate business performance with business model innovation. However, the literature does not directly relate business model innovation to technology adoption. This presents another gap for research. Thus, there is a need for research to look into female entrepreneur traits towards technology adoption readiness and innovation.

This study also looks into the connections between business model innovation and technology-ready women who run microbusinesses. Despite the fact that SMEs are the economic engines that employ the majority of people (EASME 2015), little research has focused specifically on business model innovation at SMEs. When Scopus was searched for SME and Business Model Innovation, only 16 articles were discovered. Business model innovation is a vital component by which SMEs can capitalise on the business possibilities they have discovered and enhance their performance, according to a survey of Chinese SMEs done by Guo et al. (2016). However, it is still unclear how SMEs would change their business structures (Foss & Saebi 2017; Barjak et al. 2014).

Prior studies, however, have shown that most SMEs lack a formal strategy process, do not use a systematic approach when developing new business models, and view business model innovation as a highly emergent and frequently unplanned process (Lindgren 2012). Heikkilä et al. (2018) discovered that in terms of the influenced elements of business model innovation, strategic goals (start a new business, pursue expansion, or pursue profitability) force SMEs along an alternative innovation path.

On the right side of a business model innovation canvas, growth seekers—mostly male entrepreneurs—dominate immediately away. Profitability searchers start on the left, and new enterprises adopt a cyclical strategy, dissecting each component of the business model innovation one at a time while also testing and rebuilding it. The results or statistics regarding the adoption of new business models and technological capabilities by Malaysian women microentrepreneurs are thus ambiguous.

According to the case study, SMEs are concentrating their modifications on two business model innovation components at any given time. This shows that they are gradually modifying their business model innovation, addressing the most pressing issues first. The focus varies depending on the SME's strategic goal: Profit-seeking SMEs focus their business model innovation efforts on optimising their operations, and they pay the most attention to expenses, compared to the other two SME types.

SMEs that are focused on growth emphasise customer needs by concentrating on client interactions and segmentation. The value proposition is where the new businesses concentrate their efforts before iteratively and dynamically developing the other components of their innovative business models. In this study, the research data are only very simply analysed. Numerous precise, more explanatory studies can be performed using the data that was gathered.

By referring to the mentioned issues and gaps, this study aims to examine the relationship between technology adoption readiness towards women microentrepreneurs in Malaysia as a key growth contributor for women microbusinesses within the services sector. This study takes the initiative to address the gap that has been identified, allowing readers to better understand the research strategy. This research offers a novel approach to developing a model that incorporates technology adoption preparedness, business model innovation, and tech-savvy female microentrepreneurs.

1.4 Research Questions

This study attempts to answer the following questions:

i. What is the technology ready women microentrepreneurs in Malaysia?

ii. Is there any relationship between technology adoption readiness, business model innovation and technology ready of women microentrepreneurs in Malaysia?

iii. Will business model innovation mediate the relationship between technology adoption readiness and technology ready of women microentrepreneurs in Malaysia?

1.5 Research Objectives

This study aims to examine the relationship between technology adoption readiness towards women microentrepreneurs in Malaysia as a key growth contributor for women microbusinesses within the services sector. Based on this main objective, the subsequent objectives are:

i. To identify the technology adoption readiness by women microentrepreneurs in Malaysia

ii. To examine the relationship between technology adoption readiness, business model innovation and technology ready of women microentrepreneurs in Malaysia

iii. To investigate the mediating effects of business model innovation between the technology adoption readiness and technology ready of women microentrepreneurs in Malaysia

1.6 Scopes of the Study

The first scope is in terms of the study's primary focus. While there are many topics related to the business sector, such as business ethics, sustainable development, corporate social responsibility, and social entrepreneurship, this study focuses on the relationship between technology adoption readiness and women microentrepreneurs in Malaysia. The previous sections, which are the background of the study and problem statement, highlighted some issues and challenges that motivate this study to be conducted.

The second scope is in terms of the geographical study area. While there are many regions classified in Malaysia, such as North, South, Central, East Coast, as well as Sabah and Sarawak, this study does not limit the exploration to any single region but attained the feedback from the respondents from all regions. This is because this study aims to generalise the findings to the whole nation. Chapter three details the states in these particular regions.

The third scope is in terms of the criteria of the respondents. While this study explores the relationship between technology adoption readiness towards women microentrepreneurs in Malaysia as a key growth contributor for women microbusinesses within the services sector, this study limits the criteria of respondents to women microentrepreneurs only. This is to ensure the findings are accurate and meaningful for the study.

The fourth scope is in terms of the research approach. While there are three types of research design often used in research studies, such as qualitative, quantitative, and mixed methods, this study only opted for the quantitative research approach.

1.7 Significance of the Study

A model creation is crucial in this research. This research develops a model that adds to the body of knowledge and necessitates a significant leap. The current study largely focuses on how the influence of technology adoption is a crucial growth driver for women's microbusinesses in Malaysia, which has important theoretical implications. This study fills in the theoretical gaps by analysing the technology adoption readiness of women microentrepreneurs; examining the relationship between technology adoption readiness, business model innovation, and technology readiness by women microentrepreneurs; and finally, examining the mediating effects of business model innovation between technology adoption readiness and technology prepared by women microentrepreneurs.

In addition, numerous stakeholders, particularly the Ministry of Entrepreneur Development and Cooperatives, would benefit from this research in order to help women microentrepreneurs succeed in their businesses. Knowing women's readiness for technology adoption allows the ministry to provide better direction, guidance, and training on technology in order to help them execute and cater to the current market through the use of social media, the transition from manual to automated procedures, and the adoption of cashless transactions, all of which will benefit them as entrepreneurs. Aside from that, understanding the link between technology adoption readiness, business model

innovation, and technology-ready women entrepreneurs would aid stakeholders in comprehending the concept of incorporating technology into the business of women microentrepreneurs.

The use of business model innovation as a mediator, as in this study, gives stakeholders a better viewpoint. It is a training provider in this context to assist women involved in microbusinesses in getting ready with their business model to expand their business to the next level, as business model innovation is the process of developing new, distinct ideas that support an organization's financial sustainability, including its goal and the methods for putting those concepts into action. The fundamental goal of business model innovation is to generate new revenue streams by raising the value of items and reducing the time it takes to deliver them to customers. As a result, establishing business model innovation can help women in microbusinesses see the larger picture when incorporating technology into their business plans.

1.8 Definition of Key Terms

1.8.1 Technology Adoption Readiness

Technology adoption readiness refers to the acceptance, integration and application of new technology in society. The process is broken down into a number of steps, which are frequently categorised according to the different technology users.

1.8.2 Business Model Innovation

Business model innovation is a type of organisational innovation in which companies experiment with new approaches to define value propositions, create value, and capture it for consumers, suppliers, and partners (Casadesus-Masanell & Zhu 2013; Bock et al. 2012; Teece 2010; Gambardella & McGahan 2010).

1.8.3 Women

Mosby (2009) and Venes (2017) define a woman as a fully mature female human being A female human is referred to as a girl before she reaches adulthood (a female child or adolescent). In expressions like "women's rights," the plural women is occasionally used to refer to all female individuals, regardless of age.

1.8.4 Microbusiness

According to SME Corporation (2010) mentioned that microbusiness is divided into two section which are the manufacturing and other service industry with the revenue is less than RM300,000.00 annually or less than five employees in the company.

1.9 Organization of the Study

This study is segmented into five chapters. The first chapter, as the preliminary chapter, contains the study's background and a problem statement. The research objectives and research questions that guide the course of this study are also covered in this chapter. In addition, this chapter includes the definition of key terms used in this study.

After a brief introduction, the second chapter reviews relevant and current research on the concept of technology before emphasising technology adoption and acceptance. Then, this chapter also reviews the concept of technology adoption readiness before focusing on the context and concept of microbusiness. After that, this chapter discusses women's participation in entrepreneurship and business model innovation. This chapter also discusses the underlying theories, research gaps, conceptual framework, and hypotheses development.

Chapter three covers the research methodology used in this study. This chapter begins with the research paradigm and research design before focusing on the research process and justification for employing a quantitative approach. After that, this chapter covers the population, selection criteria, sample size and sampling technique. Not only that, this chapter highlighted the research instrumentation, data collection, questionnaire design and administration as well as pretesting the questionnaires. This chapter ends after discussing the reliability, validity, and statistical analysis performed in this study.

Chapter four covers the data analysis and findings of the study. This chapter starts with the demographic profile of the respondents, followed by the normality test, common method variance, and the descriptive analysis. Then, this chapter explains the Person Correlation Coefficient and Regression Analysis. This chapter ends with the testing of the hypotheses.

Chapter five is the final chapter of this study. This chapter discusses the findings for all objectives. Then, this chapter discusses the implications of the study, followed by the limitations and suggestions for future research.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter addresses current and pertinent studies on the concept of technology before focusing on its adoption and acceptability. Before discussing the background and concept of microbusiness, this chapter examines the concept of readiness for technology adoption. This chapter then examines women's involvement in entrepreneurship and business model innovation. This chapter also discusses the underlying theories, research gaps, conceptual framework, and hypothesis development in this study.

2.2 The Concept of Technology

A long history of continuous breakthroughs has pushed the boundaries of technology since the dawn of human civilization (Zacher 2017). Technology is the result of a never-ending process in which people attempt to better their lives and satisfy their needs. It can be thought of as the transformation of knowledge into a method, process, or piece of equipment. As a result, technology's specific meaning is vague. The goal of research is to define and pinpoint the specific meaning of technology.

This study combined these concepts and referred to technology as the methods, practises, and components that a society has access to in order to achieve a human aim. Current technologies serve as building blocks for the development of new technologies, thanks to the cyclical nature of technology (Arthur 2009). Technology is frequently generated by natural events. For example, traffic accidents have prompted the creation of

self-driving vehicle technology, in which accidents are the phenomenon and self-driving car software is the technology. According to Arthur (2009), technology emerges when specific events are observed and exploited. In the past, this has led to an infinite number of innovations, and it will continue to do so in the future. The developments are the product of a long-term process marked by technological advancements (Zacher 2017).

There have been many changes in the past, including the industrial revolution (18th century) and the scientific revolution (20th century). The information revolution is the most significant driver driving the present wave of technological innovation (Zacher 2017). This change is the result of digitization, which has made communication more participatory and online. Borders are being erased, which has a negative impact on our way of life. The internet is the most obvious example, as it has a significant impact on business and society.

Technology, on the other hand, comes in a multitude of shapes and sizes, as the preceding definitions demonstrate. It could be physical or digital, and it could be a product, service, technique, strategy, or any combination of these. Technology evolves in response to events in order to achieve a goal or improve something. According to Meuter et al. (2003), this comprises optimising operations, enhancing corporate efficiency, and giving value to consumers. As a result, this technology has a lot of potential. According to Park and Jayaraman (2003), technology is crucial for increasing the quality of life for everyone, from newborns to seniors.

Technological advancements have increased in recent years, resulting in shorter product lifecycles. From time to time, new items are introduced (Cui, Bao, & Chan 2009). For instance, each year, customers are exposed to new mobile phones, laptops, and cameras. Cui, Bao, and Chan (2009) say that the faster rate at which new technology launches means that people who use technology now face problems more often than in the past.

2.3 Technology Adoption and Acceptance

Consumers do not automatically embrace new technologies; the qualities of the user and the innovation may have an effect on how they are used. Adoption is a term that is often used to refer to the process of acquiring technology. Adoption encompasses not just purchasing behaviour but also real use (Rogers 2003). There is considerable disagreement over the precise set of factors that affect adoption. There is a lack of knowledge regarding the elements that affect technology adoption, claim Meuter et al. (2003). Both consumers and businesses gain from adoption: consumers receive more convenience, control, and freedom of action, while businesses acquire more of these benefits as well (Rojas-Méndez, Parasuraman & Papadopoulos 2017).

Two different types of features, according to Rogers (2003), are necessary for a technology to be adopted. First, consider the adopter's characteristics, which include socioeconomic factors (age, education, and income), psychological variables (opinion, intellect, and so on), and communication-related aspects. Second, perceived innovation characteristics such as relative benefit, (in)compatibility, complexity, trialability, and observability are important.

In this study, adopter characteristics and psychological factors are important. The perceived characteristics of innovation are not included in this study because it is about technology in general, and they are technology-specific. Rojas-Méndez, Parasuraman and Papadopoulos (2017) looked into socioeconomic and psychological aspects in their study. Their study concluded that increasing age has a negative impact on technology readiness and that a higher education has a positive impact. Income had no correlation with technological readiness.

Additionally, the research suggests that IQ is linked to age and therefore to technology readiness. All of the above-stated factors combined constitute a person's impression of a technology and the reasons for someone to embrace or reject (new) technology. Cui, Bao, and Chan (2009) assert that resistance varies according to the degree of change needed and the customers' pre-existing belief system. This may be because consumers are content with the existing product and its technology or are afraid of complicating their lives. According to Godoe and Johansen (2012), explaining and forecasting user acceptance of new technology is crucial.

The technology acceptance model (TAM) and the technological readiness index (TRI), according to Godoe and Johansen (2012), can be used to explain technology adoption. The paradigm for technology adoption is based on Fishbein and Azjen's (1975) concept of reasoned action (Godoe & Johansen 2012). The model predicts and explains how people will react to a specific technology. TAM contains two variables that influence this behaviour. The first is perceived usefulness, which is determined by an individual's level of confidence that using a particular method will enhance his or her performance

(Lin, Shih, & Sher 2007). According to Lin, Shih, and Sher (2007), the second factor, perceived ease of use, measures how much a person thinks using a specific technology would be straightforward.

Lin, Shih, and Sher (2007) also explained that the TRI index takes a person's overall mental health into account. This is the outcome of the intricate interaction of psychological factors that influence someone's desire to use new technologies. They also stated that the idea that a person's attitude toward technology impacts whether or not they accept it is related to this. While TAM and TRI are related, they point out a key difference: "It is intuitively accepted that TAM and technology readiness are related, although TAM measures usefulness and ease of use for specific systems (i.e., system-specific), whereas technology readiness measures general technology beliefs (i.e., individual-specific)."

This study agrees with this statement because technology comes in a variety of shapes and sizes, indicating different ways of using it (fullness). Because the research is about technology in general rather than a specific technology for which TAM would be relevant, the TRI will be used to explain technology adoption in this case. In the following sections, explain the ideas of technology readiness and the TRI.

2.4 The Concept of Technology Adoption Readiness (TAR)

Parasuraman and Colby (2014), as well as Parasuraman (2000), refer to the term "technology readiness" as a person's ability to accept new technology. According to Lin et al. (2007), users' readiness for new technologies or systems is positively related to their motivation to adopt them. Using Parasuraman's (2000) Technology Preparedness Index (TPI), one can measure a person's readiness to use technology. TRI is a technological conceptual framework in general and illustrates that because people's personalities differ, so do their views toward technology (Walczuch et al. 2007). Parasuraman (2000) mentioned that each characteristic's relative strength shows a person's openness to adopting new technologies.

Instead of a person's proficiency in technology management, the term "technology ready" refers to a collection of technological concepts (Walczuch, Lemmink, & Streukens 2007). Optimism, inventiveness, discomfort, and insecurity are the four traits used to forecast individual variances in technological preparedness (Parasuraman & Colby 2014; Lin, Shih, & Sher 2007; Parasuraman 2000). Technology readiness is stymied by discomfort and nervousness, but is fueled by creativity and optimism (Parasuraman 2000).

Technology optimism refers to an optimistic outlook on technology and the conviction that it will give users more control, flexibility, and effectiveness. Innovation shows a propensity for foresight and early adoption of new technology. In addition to a feeling of being overpowered by technology, discomfort reveals a person's belief in their inadequacy to manage technology. Lack of confidence in the potential and viability of new technology is known as insecurity (Parasuraman 2000).

According to Parasuraman (2000), those who are receptive to technology have higher levels of optimism and innovativeness than those who are uncomfortable or insecure. This is because a positive mood encourages people to try new things, whereas a negative emotion discourages them. Individual users, employees, and managers within a firm, as well as an organization's external clients, are referred to as "users" (Aboelmaged 2014). The users in this study are the owners of a small construction company.

Technology readiness and TAM have been combined in a number of situations for information system research (Jin 2013). For instance, Lin, Shih and Sher (2007) explained that technical preparedness has been linked to consumer adoption of e-service systems. According to one study, the Technology Readiness Adoption Model (TRAM) may help to explain why people who are technologically prepared do not adopt it. This is due to the fact that various people have varying perceptions of a technology's utility and simplicity.

As a result, it influences the decision-making process for autonomous adoption. Small business owners make the majority of their decisions on their own because they are the only ones with the authority to do so; therefore, this idea might be used. According to Erdogmuş and Esen (2011), optimism and inventiveness have a favourable impact on perceived usefulness and PEOU. They also observed a link between human resource managers' technological preparedness and their acceptance (TAM) of e-HRM (electronic human resource management). On the other hand, they were unaffected by the dimensions of discomfort and insecurity.

500 human resource managers from the biggest private enterprises in Turkey provided the study's data. Personality characteristics have been found to have an effect on TAM components. The relationship between perceived utility and creativity, however, was found to be inverse. In addition, small enterprises' adoption patterns differ from those of big corporations. ICT is used by small firms in different areas and industries to differing degrees. Similar studies by Walczuch, Lemmink, and Streukens (2007) discovered that SME and large company technology readiness has a significant impact on TAM.

The sample was recruited from a financial services provider, which explains the study's uniform organisational culture. Because the current study is focusing on the small builders in the construction industry, the relationship between technology readiness and TAM may yield a variety of results. Rather than focusing on a single technology, this study examines a variety of ICTs that can be used to improve project management.

2.4.1 The Determinant of Technology Readiness

Both the importance of technology in interactions between customers and businesses and the dramatic rise in the quantity of technology-based goods and services accessible were both explained by Parasuraman (2000). He added that, technically speaking, the clients are dealing with more advanced goods and services. The relationship between a business and its customers is undergoing dramatic changes. This has ramifications for both businesses and consumers. The issue of "Why do some people embrace new technologies while others do not?" has become more relevant, particularly for businesses that offer technology-based goods and services (Tsikriktsis 2004).

People's attitudes toward using an invention, according to research on innovation adoption and dissemination, influence their adoption behavior. Numerous theories exist on this topic. As explained by Tsikriktsis (2004), technology readiness is a relatively recent conceptual concept that supports the understanding of the unique behavioural process that underpins the acceptance of technology-based goods and services. By referring to Parasuraman and Colby (2014), they defined technology readiness as the "tendency to adopt and use new technologies for personal and professional goals."

The technology readiness index (TRI) assesses broad attitudes about technology; it does not assess skills with regard to any particular technology. The original TRI was based on the human-technology interaction literature. There are differences in people's readiness to adopt and use new technology as a result of their interactions with (new) technology, which can produce both positive and negative attitudes about technology (Parasuraman & Colby 2014). In order to gauge an individual's openness to adopting new

technology, the TRI assesses both negative and positive emotions. The TRI is a tool for quantifying these broad technological attitudes. Parasuraman (2000) mentioned that it is a multi-item test that determines a person's readiness to interact with technology. The original TRI was recently modified by Parasuraman and Colby (2014) to create the TRI 2.0. In our evaluation, this study focuses on the most recent version (TRI 2.0).

The four facets that make up the idea of technological readiness are optimism, inventiveness, discomfort, and insecurity. Optimism is a positive attitude toward technology and the notion that it gives individuals greater control, flexibility, and efficiency in their daily lives (Parasuraman & Colby 2014). Tsikriktsis (2004) asserts that optimism is a trait shared by all people. It tries to elicit feelings that suggest technology is a beautiful thing. It's possible that technology gives consumers more control over their daily lives, adding value in this way.

A tendency for technological innovation and thought leadership is how innovativeness is defined (Parasuraman & Colby 2014). This dimension measures a person's conviction that he or she is on the bleeding edge of new technological experimentation (Tsikriktsis 2004). This could be in the form of tangible commodities or intangible services. Others consider this person to be an expert on technology-related issues. When a person is frequently the first among their friends to purchase a new technology, this may indicate that they are inventive (pioneers).

Being uncomfortable is characterised as having a sense of being both overpowered and helpless in the face of technology (Parasuraman & Colby 2014). People who are anxious about technology-based goods or services are said to be in a state of discomfort (Tsikriktsis 2004). They believe that technology tends to exclude rather than include people. This may be shown by the idea that technology is not intended for use by regular people on a daily basis (Tsikriktsis 2004).

The definition of insecurity is the combination of worry about the potential for harm from technology and uncertainty about its ability to perform as intended (Parasuraman & Colby 2014). Although there is some unease involved, mistrust is the main factor. The refusal to conduct business with an organisation that is only reachable online is an indication of insecurity. Optimism and inventiveness are the first two qualities, and they are viewed as drives. Optimism and inventiveness may aid in a person's preparation for technology, according to this. Pain and insecurity, the other two characteristics, are referred to as technology readiness inhibitors and demotivators.

16 components are used to quantify TR 2.0. (Parasuraman & Colby 2014). Because the dimensions are different, a person may display a range of traits, sometimes leading to strong urges balanced by powerful inhibitors (Parasuraman & Colby 2014). Each TR-component conveying a positive or negative opinion of (new) technology has its own mean. To further assess the organization's technological readiness, a total TRI-score is calculated. Your level of technological preparedness will increase as you move up the five-point scale. Due to technological inconsistencies that can occur with the TRI, a high score on a driver could be cancelled out by a high score on an inhibitor (Parasuraman

2000).

Parasuraman and Colby (2014) suggest that segmenting customers based on their TR may be helpful for identifying variations in consumer attributes. As a result, explorers (high motivation, low inhibition), pioneers (high motivation, high inhibition), sceptics (low motivation, low inhibition), hesitators (mid motivation, high inhibition), and avoiders (low motivation, low inhibition) were formed as a five-part segmentation scheme (low motivation, high inhibition). The avoiders' category is disproportionately made up of the elderly. Tsikriktsis (2004) divides the segments into groups based on their levels of optimism, inventiveness, discomfort, and insecurity, in addition to their levels of drive and inhibition.

The phenomenal development of technology-based goods and services, as well as the growing pace at which businesses are using technology to simplify their marketing and customer service processes, require a comprehensive evaluation of consumers' technological readiness (Parasuraman 2000). As a result of the interaction between technology readiness's drivers (optimism, innovativeness) and inhibitors (discomfort, insecurity), people's willingness to accept technology differs significantly (Parasuraman 2000). Examining TRI scores allows companies to resolve crucial concerns regarding their IT strategy and management (Parasuraman 2000).

As a result, analysing the aforementioned categories and determining the demographic, lifestyle, and purchasing aspects that differentiate them is fascinating. This is done to determine the technology-based systems that will serve as the interface for

interactions between customers and businesses, the types of systems that are most likely to be appropriate, how quickly the systems can be implemented, and the types of support needed to assist users with technology-based system issues (Parasuraman 2000).

Both Parasuraman and Colby (2014) agree. The TR for a client segment gives marketing insight to management. TR-customers (explorers) with a high TR score are enthusiastic about new technology and can master it with minimal help. Customers with a low TR score (hesitators and avoiders) will choose the bare minimum of features and will require extra support and reassurance.

2.4.2 Technology Adoption Readiness (TAR)

According to the findings of research conducted in Malaysia and Indonesia by Ong et al. (2016), the majority of studies focus on a single dimension of technology, namely usage, which is either e-commerce or mobile commerce in this instance. Furthermore, they also mentioned there is less research on the association between technology adoption preparedness and company performance that focuses on women entrepreneurs, particularly women entrepreneurs in Malaysia, than there is in the general population.

According to Dezsö, Ross and Uribe (2016) as well as Jennings and Brush (2013), women continue to be underrepresented at the top of firms, and they are also less likely to become entrepreneurs than men. In spite of this, GEM (2017) mentioned that female entrepreneurship has risen at an exponential pace throughout history and throughout the globe. GEM (2017) also reports that in 2016, almost 163 million women in 74 countries started or managed their own businesses. An additional 111 million women held executive

positions in these companies.

While the gender gap widened by 5% over the past two years, the percentage of adult females who start a new enterprise climbed by 10%. (i.e., the ratio of women to men engaging in entrepreneurship). The United States, behind only Germany but ahead of nations like France, the United Kingdom, and Italy, would have the fifth-highest GDP in the world, according to the Center for Women's Business.

Welsh and Dragusin (2009) have published papers on this topic. In nations with a less developed culture of equal opportunity, such as Mediterranean nations like Italy, female entrepreneurship becomes even more important to increase women's participation in the labour force (Colombelli et al. 2019). Women's participation in the workforce, especially in leadership roles, has a positive effect on a company's financial performance, claim Weber and Zulehner (2010). As a result of these discoveries, it has been found that women are more creative (Burgess & Tharenou 2002), more cooperative (Kuhn & Villeval 2015), and better at getting and processing information (Hillman, Shropshire, & Cannella 2007). All of these things have made women better at making decisions (Amason 1996).

On the other hand, the long-term implications of increased female leadership participation on firm success are still being researched and are not yet obvious. Numerous studies have found that having more women in top management improves business performance (Dezsö et al. 2016; Flabbi et al. 2019; Dwyer, Richard, & Chadwick 2003; Dezsö & Ross 2012). However, there is no consensus in the literature that having more

women in top management improves business performance (Dezsö et al. 2016; Flabbi et al. 2019; Gregory-Smith, Main & O'Reilly 2013; Matsa & Miller 2013; Dezsö & Ross 2012; Adams & Ferreira 2009; Dwyer, Richard, & Chadwick 2003).

A study on entrepreneurship found that women-led enterprises have a considerable positive impact on a more creative atmosphere and have greater chances of surviving (Weber & Zulehner 2010; Cunningham et al. 2017). Why is it so difficult to achieve gender equality in the world of entrepreneurship? Particularly in countries where gender equality is weak, anti-feminist sentiments are frequently reflected in cultural norms. Male stereotypes of women are characterised as societal judgments of particular group members that lead individuals to evaluate group members uniformly and negatively in light of male community standards (Lee & James 2007).

In the male community, stereotypes against women are persistent and difficult to escape, and they are especially common in the male community (Blair 2002). For instance, males tend to view women as generally being unpredictable (Brescoll 2016), less competent than men (Oakley 2000; De Pater et al. 2010), and less authoritative in their interactions with and assessments of women (De Pater et al. 2010; Brescoll 2016). The prevalence of gender bias and stereotypes is greater in male-dominated environments, such as entrepreneurship, and they are more deeply entrenched in public opinion (Bardasi et al. 2011; Acs et al. 2011).

Women are often prevented from entering the business world because of widespread cultural perceptions that entrepreneurship necessitates the possession of masculine traits (Bruni et al. 2004). Women entrepreneurs encounter many challenges while starting and growing their businesses, which has prompted numerous academics to try to raise awareness of these challenges (Link 2017). In fact, when questioned, women indicated a lower desire to start their own business than men (Adema et al. 2014).

According to Fairlie and Robb (2009) and Thebaud (2015), women face a variety of difficulties when it comes to starting a business, including a lack of access to the social and financial capital required to identify and pursue market opportunities, a lack of prior business experience, a propensity for risk, and a lack of training and institutional support. When launching and sustaining a new business, having financial resources is critical, and this is a huge hurdle for women who want to start their own firms. Alesina et al. (2013) claim that women have a tougher time obtaining capital than men do, and those men continue to dominate the financial industry.

It is more difficult for female business owners to secure funding and attract investors to their companies (Coleman 2002; Brush et al. 2001; Buttner & Rosen 1992). Ineffective financial resource allocation is frequently caused by subtle discrimination (based on stereotypes) (Gicheva & Link 2015; Buttner & Rosen 1992; Verheul & Thurik 2001; Coleman 2000). In comparison to male entrepreneurs, female business owners seek loan financing and angel investment at lower rates (Fielden et al. 2003; Cavalluzzo et al. 2002).

This is a big issue since undercapitalization at the time of company formation can have a negative impact on the firm's size and eventually result in underperformance (Poczter & Shapsis 2018; Becker-Blease & Sohl 2007). The results show that, despite the fact that there doesn't seem to be any prejudice in terms of approval or rejection rates, women are forced to put up more collateral and pay a higher interest rate on loans than men (Basiglio et al. 2019; Riding & Swift 1990; Coleman 2000). Aside from that, according to the Diana Project, women are less competent than men at developing venture capitalist-friendly businesses (Brush et al. 2001). In addition, only a tiny proportion of women are active investors in the stock market.

The gender gap in entrepreneurship is mostly a result of women's self-perceptions, which lead them to believe they are blessed with lesser skills and abilities than males (Audretsch et al. 2017; Minniti & Nardone 2007; Arenius & Minniti 2005). Women have historically lagged behind men when it comes to developing the qualities necessary to succeed in the business world, such as self-confidence and a competitive spirit (Gneezy et al. 2009; Ardagna & Lusardi 2008). According to these ideas, women believe they would face unfavourable consequences, and their lack of understanding of financial and accounting systems frequently serves as a roadblock (Cole & Mehran 2009).

At the end of the day, women are uninterested in certain traditionally male-dominated fields, which adds to the existing gender gap in business. Additionally, data indicates that structural factors (such as age, firm type, and educational attainment) are more pertinent than gender issues in explaining the gender difference in entrepreneurship (Coleman 2000). Van der Zwan et al. (2012) and Fischer et al. (1993) found that women

and men make different business decisions and have different levels of business success because they have different experiences and have been socialised in different ways.

The strength of women's social networks, for example, is one major aspect that may contribute to their lower entrepreneurial engagement. Males, in contrast to females, are more integrated into the corporate world (McAdam et al. 2019; Scherer et al. 1990). The effects on financial inclusion are extensive, and there may be entrepreneurial prospects as well. Additionally, men are often driven to become entrepreneurs by a desire for power and authority. On the other hand, Welsh and Dragusin (2009) noted that one of the reasons women establish new businesses is because they are unhappy with their current jobs. and the increased flexibility needed to fulfil family obligations. Examples include the disregard society and companies have for employees' occupations.

2.5 Context and Concept of Microbusiness

2.5.1 The Definition

A microbusiness, sometimes referred to as a small business venture, is identified by either the number of full-time employees it employs or the total yearly sales income it generates. In Malaysia's manufacturing sector, microbusinesses are defined as those with annual revenues of less than RM25 million or fewer than 150 full-time employees. In the service industry and other industries, micro firms are defined as those with annual revenues of less than RM5 million or fewer than 50 full-time employees. Privately owned and operated small enterprises are those with fewer than 100 employees and marginal profits. The foundation of Malaysia's economy is small and medium-sized businesses.

Since the New Economic Policy was put into place, microbusiness growth has drawn a lot of attention (1971–1990). Later, Malaysia's Second Long-Term Plan emphasised it (1991–2000). The importance of small and medium-sized businesses for Malaysia's economic development cannot be overstated, asserts Radient (2008). Microbusinesses are crucial to the development of big, global companies in addition to producing jobs. Through their creativity and inventiveness, they help the industry expand and thrive. It is a response to Gibbs's (2005) appeal to investigate the special function of entrepreneurs in determining a company's success.

As a result, the current study uses the Theory of Entrepreneurial Competence to explain the link between the actions and characteristics of the business owner and the success of the organisation. People in critical positions within an organisation, according to Bird (1995), have a significant impact on the company's success or failure. Entrepreneurial competences are defined as underlying features such as wide specialised knowledge, reasons, attitudes, self-images, social positions, and abilities that contribute to the establishment, survival, and/or development of businesses (Li 2009).

According to Baum et al. (2001), this term refers to individual qualities such as knowledge, abilities, and/or talents needed to accomplish a certain profession. Entrepreneurial competence, according to Kiggundu (2002), includes all of an entrepreneur's characteristics that are necessary for a successful and long-lasting firm, including attitudes, beliefs, knowledge, skills, and talents. The importance of entrepreneurs in the target country cannot be overstated.

In addition to being intelligent and competent, these migrant producers also contribute to the creation of a wide variety of goods and services, according to Ayda et al. (2010), because of their social ties to the local communities. According to Baycan-Levent and Kundak's (2009) study on Turkish immigrant entrepreneurs in Switzerland, it is very easy and common for Turkish immigrants to make the move from working abroad to starting their own business. Individuals in the host nation of Switzerland are prevented from becoming entrepreneurs by sociocultural norms, government rules, and the educational system.

Mustafa and Chen (2010) investigated how five entrepreneurs could assist a company in becoming more global as well as the significance of transnational family networks. According to the research, the migrant producers have resources and are able to participate in social and economic activities in both nations through family and kinship networks. In an effort to create a hypothetical scenario about employment and the status of the environment in which they were initially migrant workers who started out as labourers and eventually became entrepreneurs, Hassan (2009) studies the profile of migrant workers who emigrated to Malaysia.

Based on the possible situations analysed, he discovered that foreign employees had changed careers and were now entrepreneurs in Malaysia. Foreign merchant participation is predicted to stymie efforts to improve the indigenous group's commercial activity due to competition between local and international merchants. These findings emphasise the significance of his work.

2.5.2 Small Medium Enterprises (SME) From Malaysia's Perspectives

Small and medium-sized businesses (SME) are described in various ways by different nations in accordance with their respective rules. SME definitions typically include both revenue and assets in addition to labour. Extracted from Annex 2 of Recommendation 2003/361/EC, the definition of a micro company in the European Union is an organisation with fewer than 250 workers, annual revenues of less than 50 million euros, and/or a total balance sheet of less than 43 million euros. The Inter-American Development Bank advises that micro enterprises have yearly revenues of less than $3 million and no more than 100 employees.

The World Bank also recommends a maximum of 300 employees, $15 million in annual sales, and $15 million in assets (Gibson & Vaart 2008). This demonstrates that, depending on the country's own established criteria, microbusinesses can employ 200, 250, 300, or 500 people globally. A common definition is unquestionably required in order to recognise micro enterprises across industries based on their size and responsibilities. It assists in the effective implementation of policies as well as the correct monitoring and control of their performance and output. As a result, Malaysia follows the suggestions of the National SME Development Council (NSDC).

The main organisation in charge of creating national microbusiness policies is the National Small Business Development Center (NSDC). An SME is one that satisfies the defined sales turnover or full-time worker standards, according to a revised definition that was adopted and published in July 2013. According to SME Corporation Malaysia (2020), the number of full-time employees or the manufacturing sales turnover must be greater

than RM50 million.

However, the number of full-time employees or sales turnover for the services and other sectors should not exceed RM 20 million; for microbusinesses across all sectors, the sales turnover should be less than RM 300,000, or the number of full-time employees should be less than 5, or sales must range from RM 300,000 to RM 15,000,000, or there must be between 5 and 75 full-time employees for a manufacturing-related business to qualify as a small enterprise. To be considered a small firm in the services and other industries, SME Corporation Malaysia (2020) added that the sales turnover must be between RM300,000 and RM3,000,000 or the number of full-time employees must be between 5 and 30. A manufacturing company must have 75 to 200 full-time employees, or RM15 million to RM50 million in annual sales, to be classified as medium-sized.

Nevertheless, in order to be classified as a medium-sized firm, the sales turnover in the services and other industries must be between RM3 million and RM20 million, or the number of full-time employees must be between 30 and 75. Microfirms will also be described as businesses that match any of the stated criteria while operating in a range of operational sizes, with the smaller size being used to classify the firm's size. Microbusinesses have always received government support. This is reflected in the declaration that a business is regarded as a microenterprise if its revenue falls into the microenterprise category but it employs a limited number of people. This looks to be a type of government-supported business. Microbusinesses are estimated to account for 97.3% of all businesses in Malaysia (Economic Census Report, Department of Statistics Malaysia 2011).

On the other hand, the majority of them are employed in the food industry, accommodation, restaurants, and wholesale and retail trade. Additionally, SMBs comprised 93.8% of manufacturing companies (SMIDEC 2002). By 2020, these microbusinesses are anticipated to produce half of all manufacturing production, or 27.3% of overall output and 25.8% of value-added. Malaysia, thankfully, is moving toward an industrialised economy, acquiring a presence among global competitors through import substitution, manufacturing, and exporting (Ching 2004).

As seen in the 7th, 8th, 9th, and 10th Malaysian plans, as well as the Second Industrial Master Plan (IMP2) (MITI 2005; Government of Malaysia 2001), the Malaysian government realised the value of microfirms and began to help them in different ways. Microbusinesses have always been crucial to Malaysia's economic stability, especially during financial crises, and have helped the country's economy become more resilient to unforeseen events. The service industry employs 87% of Malaysian microbusinesses, according to the Secretariat National SME Development Council (2008). Furthermore, it had a GDP share of 38.3% in 1976, which increased to 58.2% in 2005. Additionally, the industrial sector increased from contributing 22.1% of GDP in 1976 to 31.6% in 2005 (Aris 2007).

The Department of Statistics reports that between 2005 and 2008, microbusinesses expanded at an average rate of 7.8% compared to large businesses, which expanded at an average rate of 4.9% (2000–2004). SME GDP growth for 2014 is projected to be between 5.5% and 6.4%, up from 6.3% in 2013 and 6% in 2012, according to the facts and figures in the SME annual report 2013/14. Also, the amount of GDP that SMEs contributed rose

from 29.4% in 2005 to 31.44% in 2008, then to 32.54% in 2011 and 32.74% in 2012.

Additionally, according to the SME Annual Reports for 2012–2013 and 2013–2014, the GDP growth of SMEs has regularly surpassed that of the general economy. Furthermore, loans to large microbusinesses to help them grow have remained concentrated in the services sector (Arham 2014). Mining and quarrying accounted for 0.2%, while construction accounted for 2.8%. According to SME Corp. (2013), the global financial crisis caused micro companies' strong GDP growth rate of 10.3% in 2007 to decline in 2008 before worsening in 2009.

SME Corp. has responded by developing a range of assistance programmes to assist microbusinesses in coping with the crisis. In addition, as of the end of December 2009, 56% of the RM15.6 billion had been distributed to 56,000 microfirms, with 76% of funding approved. The formation of NSDC, the formulation of strategies, the use of a results-based approach, and the effective implementation of those plans all played significant roles in the organization's growth. When compared to overall GDP growth in 2012, microbusinesses demonstrated mostly healthy growth and, of course, a positive contribution to GDP, with microbusiness GDP growth of 6% compared to overall GDP growth of 5.6% (Malaysian Department of Statistics 2013).

Microbusinesses also increased employment at a faster rate than large corporations (6.4% in 2012 and 6.3% in 2013). This corresponds to the year 2011. According to SME Annual Reports 2012–2013 and 2013–2014, SME employment contribution increased from 57.1% in 2010 to 57.4% in 2012 and 57.5% in 2013. On the other hand, the export

effect is modest and should be increased. These standards are also used to create important government processes and regulations.

The SME Master Plan of 2012 has been dubbed a "game changer." Its purpose is to assist Malaysian microbusinesses in growing more quickly. It has devised an SME strategy that will run through 2020, with the goal of developing Malaysia into a high-income economy. According to the National SME Development Council's SME Annual Report (2012/13) for 2012, government agencies implemented 139 programmes costing RM7.1 billion to assist over 430,000 micro companies.

Market access, innovation, and technology adoption accounted for 21% of these activities, while human capital development accounted for 22% of them. The SME Master Plan identified innovation and technology adoption as the most crucial indicators of SME performance, and SME Development Programs in 2012 gave these components top priority. Under the direction of the Malaysian government, the Ministry of Human Resources (MOHR) developed 30 programmes to improve human capital and entrepreneurial skills. These programmes helped 42,725 small businesses in Malaysia.

Other Ministries and Agencies ran programmes such as the SME Mentoring Program, which was run by MITI through SME Corp; Small Projects under the Social Development Program, which was run by Jabatan Kebajikan Am, Kota Kinabalu; and Orang Asli Entrepreneurship Development, which was run by Jabatan Kemajuan Orang Asli (JAKOA), which was run by the Ministry of Rural and Regional Development (MRRD). Furthermore, in 2012, the government focused on microfirms' market access

needs, implementing 29 programmes costing RM 91.3 million and involving 28,100 microfirms. The government also worked hard on infrastructure. In the same year, it put in place ten different programmes that helped 3,932 small businesses.

SME development programmes were also maintained and expanded in 2013, with numerous ministries and government organisations making extensive use of them. The six components of the SME Master Plan were highlighted in these outcome-based programmes, with an emphasis on programme execution and outcome monitoring. The government's commitment to microbusinesses was reaffirmed in 2013, with the launch of 154 programmes worth RM18.4 billion.

The government was in charge of 139 projects in 2013, with a total financial commitment of RM9.9 billion. The government, on the other hand, intended to work with the private sector on 15 projects worth RM8.5 billion. This was a fantastic humanitarian act to assist microbusinesses in growing so that the country's vow and goal of being a "high-income nation" by 2020 could be met and the required steps could be taken to ensure that the dream could be realised on time.

To address these issues, the government increased its financing to RM400 million from the previous year. As a result of this activity, 25 programmes aimed at 5,736 microbusinesses were developed with a focus on innovation and technology. In addition, the government spent RM139.9 million to help entrepreneurs and their employees develop and strengthen their human capital in order to meet changing market demands and created 28 programmes to assist with value creation. A total of 42,081 microbusinesses were

expected to participate in such initiatives. In addition, the government continues to provide financial assistance to help microbusinesses gain access to broader markets, investing RM78.7 million and launching 20 programmes to assist 45,212 microbusinesses, the same as it did in 2012. This is especially true in the export sector.

In addition, the government continued to improve infrastructure in 2013, with 14 programmes totaling RM92.2 million aimed at aiding 1074 microbusinesses. In 2014, the government demonstrated its commitment to microbusinesses by launching 133 programmes worth RM7 billion and helping 484,000 microbusinesses. Human capital development receives 26% of the financing, while market access receives 23%, innovation and technology adoption receive 19%, and infrastructure receives 10%. In 2014, 154 projects with a total cost of RM13.3 billion were completed.

2.5.3 Microbusiness Characteristic and Features

Numerous factors, including (i) the availability of sufficient financial and non-financial inputs, (ii) the nature of the business and management skills, (iii) competition in open global markets, (iv) supply chain pressure, (v) the state of the economy, and (vi) the burdens of regularity, affect the growth of microbusinesses (Abdulsaleh & Worthington 2013; Kumar, Singh, & Shankar 2013; Tarut & Gatautis 2014; Wang 2016). Innovative ideas have a significant impact on SME growth since SME growth is strongly related to the industry or sector's current technical environment (Tarut & Gatautis 2014).

Microbusinesses will benefit from ICT innovation in two ways: (i) acquiring a competitive advantage over competitors and accessing global markets (Ghobakhloo, Aranda, & Amado 2011); and (ii) more effectively managing supply chains for enhanced profitability (Kumar et al. 2013). Microbusinesses (small and medium-sized businesses) are characterised by their adaptability and capacity to adjust swiftly to changing circumstances, and they have the potential to promote innovation and development in both large and small economies (Arthur et al. 2006; Harbi, Anderson, & Amamou 2014). The majority of tiny businesses, however, struggle to stay viable if they do not innovate (Hardie & Newell 2011; Peansupap & Walker 2005b).

Microbusinesses have been chastised for depending on 'business as usual' solutions, which lack innovation and lead to profit and growth losses (Hardie & Newell 2011; Love et al. 2005). This is resulting in lower levels of technical innovation when small businesses frequently face severe resource constraints and financial shortfalls as a result of the risks and costs associated with knowledge and technology, as well as limited access to both internal and external financial resources (Abbot, Jeong, & Allen 2006; Hardie & Newell 2011).

Due to their greater risk aversion during economic downturns and more resource limitations or shortages during boom times, microbusinesses are more sensitive to economic conditions than larger organisations (Hardie & Manley 2008). Because microfirms are owned and operated by people, they might not have the means to examine their needs for innovation (Hardie & Newell 2011; Canada's Productivity Commission 2013). Due to the extensive time needed to test and develop technical advances

successfully, the requirement to maintain the firm's cash flow, and microbusinesses' preference for cash flow financing over borrowing, innovative ideas are frequently abandoned (Love et al. 2005; Hardie & Newell 2011).

2.6 Women Participation in Entrepreneurship

Women's participation in the labour force has increased dramatically over the last two decades. Self-employment and entrepreneurship by women have become a visible and substantial trend. In the literature on female entrepreneurship, however, there is a dearth of statistics and figures. This is partially due to the fact that most countries and areas lack government information on the gender of business owners, with the bulk of businesses being classified by industry, size, and location (Butler 2003; OECD 2004). This makes determining the exact scope of female entrepreneurship, as well as differences among countries and regions, extremely challenging.

There are, however, certain global statistics that show the prevalence of female entrepreneurship in various countries. Women have been dubbed the new economic driving force in the United States and Canada, where extensive research on women's entrepreneurship has been conducted. According to research, women started firms at a rate twice as high as men throughout the 1990s, and they are now referred to as these countries' new economic engines (OECD 2000).

Women-owned and run businesses employ 9.2 million people in the United States, according to the US Census Bureau, accounting for 28% of the 23 million firms (or 6.4 million). This equates to 9% of the private sector's total workforce. Additionally, female

business owners in the US made $1.15 trillion in revenue in 2002. The number of women-owned businesses in the United States increased by 14% between 1997 and 2002, according to the National Foundation of Women Business Owners (NFWBO), formerly known as the Centre for Women's Business Research. Sales rose by 40%, the same rate as all other businesses in the nation, while employment rose by 30%, 1.5 times the national average (NFWBO 2002).

According to this research, American women who run their own businesses significantly contribute to the growth of the economy by creating jobs and money. More than 700,000 women-owned businesses in Canada employ 1.7 million people, according to data. The Organization for Economic Co-operation and Development (OECD) published a report on the economic effects of women's entrepreneurship in Canada in 2004. According to this paper, Statistics Canada presented data on female entrepreneurs to the Task Force on Women Entrepreneurs of the Canadian Prime Minister in 2003.

They estimate that there are over 821,00 female entrepreneurs in Canada who make over $18,109 million in economic contributions annually. In addition, between 1981 and 2001, the number of female entrepreneurs climbed by 208%, compared to a 38% increase in the number of male entrepreneurs. Women have started one-third of new companies in Eastern Germany since 1990, creating one million jobs and $15 billion in annual GNP, according to Coughlin (2002).

There are 1.03 million women-owned businesses in Germany (OECD, 2004). As a result, Germany has a comparable proportion of female entrepreneurs and their economic contribution to the US and Canada. Women entrepreneurs start new businesses in Australia, the United Kingdom, and parts of Asia more quickly than men do, and they fail less frequently, according to research (to mention a few: Brush et al. 2006; Fielden & Davidson 2005; Coughlin 2002; Kitching & Jackson 2002). For instance, in Australia, the percentage of women who are entrepreneurs increased dramatically from 5.6 to 9.6% in 2003, and the ratio of women to men who run their own enterprises increased from 48 to 71% (Brush et al. 2006).

In a study of 19 nations, women made up 22% of the 7,600 entrepreneurs (where the owner's gender could be ascertained), with Greece having the lowest proportion of entrepreneurs (14%), followed by Austria (15%), the United Kingdom (16%), and Denmark (16%) (Observatory of European SMEs 2002). The research found that the highest percentages of female entrepreneurs were in France (30%) and the Netherlands (27%), followed by Luxembourg (27%).

According to the 2001 Global Entrepreneurship Monitor (GEM) Report, Italy, New Zealand, and Spain did not have as much of a gender gap in entrepreneurship. In these nations, female entrepreneurs make up two-thirds of all business owners, or almost on par with male entrepreneurs (GEM 2001). In the self-employed population, women are underrepresented. Regional variances, though, are significant. For example, 36% of female entrepreneurs are in inner London, while only 19% are in West Yorkshire (Women's Unit UK 2001).

According to the OECD (1998, 2004), women-owned businesses are rapidly growing in Africa, Eastern Europe, Asia, and Latin America. In Sub-Saharan Africa, women produce more than 80% of the food, while this percentage is 60% in Asia, 29% in the Caribbean, 34% in the Middle East and North Africa, and more than 30% in Latin America (Woldie & Adersua 2004). According to Coughlin (2002), many of these women sell food in addition to producing it, giving them a thorough knowledge of regional marketplaces and patrons.

Some of the ILO's (2003) research in Africa sheds light on female entrepreneurship in emerging economies despite the scarcity of data on the trajectory of female entrepreneurship in developing countries, notably in Africa. According to ILO (2003) research, women living in severely tough circumstances can have a significant economic impact by starting their own businesses. For example, a group of 118 female entrepreneurs in Zambia managed 144 businesses and employed 1,013 people, 973 of whom were full-time employees. ILO (2003a) also reported that there are 8.2 full-time employees per company on average. 752 full-time employees, or 5.9 employees per company, were employed by a sample of 128 female entrepreneurs in Tanzania (ILO 2003b). The information shows that an Ethiopian sample of 123 female entrepreneurs employed 852 workers in total, 596 of whom worked full-time (ILO 2003c).

Results from the ILO show that African women entrepreneurs are capable of generating jobs for both themselves and others. The facts unmistakably show that women's entrepreneurship is expanding in emerging nations as well, despite any flaws in the aforementioned statistics that would limit the ability to make population-level

conclusions. The data also shows how important these women are to the growth of the economies in these developing nations. Women entrepreneurs are active on a national, regional, and international level, as was previously noted.

The majority of female entrepreneurs are employed by small and medium-sized businesses, according to substantial evidence in the literature. A study found that women entrepreneurs are successful in business and significantly contribute to the political, social, and economic advancement of many nations. Julie Weeks, Director of Research at the National Foundation for Business Owners, quotes Jalbert (2000) as saying that entrepreneurship "opens paths to enhanced self-sufficiency, self-esteem, education, and growth - not only for women, but also for their families and employees."

Women hold between 25 and 30% of all enterprises, which is also changing the makeup of business ownership globally. They will change how the world does business as their numbers rise and their businesses succeed. Jalbert (2002) discovered that countries with notable improvements in women's entrepreneurship saw long-term economic growth. On the other side, nations with low rates of female entrepreneurship have seen their economies stagnate. Women are economically empowered and are able to make greater contributions to global development thanks to their constructive actions, notably in the workplace.

Women's entrepreneurial activities provide a means of economic survival as well as beneficial social effects for the women and those around them, whether they work in small or medium-sized production activities, the formal or informal sector, or both

(UNIDO 2001). Despite the data and studies on women's economic activities listed above, it is now generally accepted that women are an underutilised source of entrepreneurship (GEM 2001; Kauffman Centre 2001; Carter 2000; OECD 1998, 2004).

Despite this, there are still more women than men working in business. Men are roughly twice as likely as women to engage in entrepreneurial activities, according to Reynolds et al. (2002). However, as was already said, there is a lot of variation between nations. Up until the middle of the 1980s (Watkins & Watkins 1984), women's contributions to business were underappreciated. The period saw the publication of several studies on issues such as discrimination based on gender (Hisrich & Brush 1986), reasons for beginning a business (Goffee & Scase 1985), and comparisons to male business owners (Hisrich & O'Cinneide 1985).

Recent research on female entrepreneurs has concentrated on key success factors and motivational variables (Moore & Buttner 1997), policy and assistance (Women's Unit UK 2001), management style (Davidson & Burke 2001), and characteristics and issues (Women's Unit UK 2001). However, the majority of these studies (Adler & Israeli 1994; OECD 2004) have concentrated on the development of entrepreneurship in industrialised nations; there is very little information and knowledge about African women entrepreneurs, particularly Ghanaians, and their contributions to their countries' economic growth. This leads to a summary of the research question in the following section.

Female entrepreneurship research has received far less attention than male entrepreneurship research, which is typically gender-neutral or focuses on male norms and behaviors. According to the OECD (2004), despite being a poorly understood and theoretically intriguing phenomenon, academic research on women's entrepreneurship has elicited no response. Instead, the fieldwork was done as a result of both the intrinsic drive of the individual women researchers in the field and the desire for more information on these women from various policy institutions (such as the European Union, ILO, UNIDO, OECD, and other national governmental agencies).

The OECD hosted three significant working conferences on female entrepreneurs in small and medium-sized businesses in 1997, 2000, and 2004 to increase public awareness of female entrepreneurship. Leading experts in the fields of gender and women's entrepreneurship, as well as policymakers from the OECD and emerging and transitional economies, were all present at these conferences. Furthermore, the OECD (OECD 1998, 2000, 2004) admits that there is no universally accepted definition of a woman entrepreneur and that there is little data and research on female entrepreneurs. In addition, several academics have highlighted that there hasn't been much discussion of female entrepreneurs in the media or in academia.

While both entrepreneurship and the gender system have been well studied, most of these studies have been conducted in isolation. Although it has received a lot of attention, women's entrepreneurship has not received much attention (Brush 1992; Brush et al. 2006; Brush & Hisrich 1999; Butler 2003; Holmquist & Sundin 2000). Equal opportunity for men and women in the corporate world remains a pipe dream. The dearth

of knowledge and statistical information on female entrepreneurs is thus a result of the way business statistics have typically concentrated on larger firms, such as those in manufacturing and technology, according to conference conclusions from the OECD from 2004.

Prior to recent years, women who founded and oversaw small businesses were given less consideration (Duchenaut 1997; Franco & Winqvist 2002; Reynolds & White 1997). Additionally, the majority of economic metrics, like ownership and management, are not created to take gender variations into consideration (Baygan 2000; Butler 2003). Adding a gender component to the official system for collecting data is possible in the long run, but for now, academics and policymakers must rely on ad hoc surveys, as was concluded after deliberations at the OECD (Baygan 2000).

Additionally, it is critical to keep deepening our understanding of the experiences of women entrepreneurs through qualitative research, as statistics alone fall short of capturing these experiences (OECD 1998, 2001, 2004). Brush (1992), a well-known female entrepreneur researcher, observed a scarcity of quantitative and qualitative studies on female entrepreneurs in academic entrepreneurship journals.She added that the study was flawed since it relied heavily on research on the experiences and characteristics of men when it came to studying female entrepreneurs. This implied that crucial and distinctive elements of the experience of female entrepreneurs were ignored.

Furthermore, feminist criticisms of the study suggest that concentrating solely on masculine performance indicators may understate the importance of female-owned businesses in comparative studies of male and female entrepreneurship. Fenwick (2001), for instance, claims that women are frequently portrayed as weak in small company literature and as needing training to compete with traditional male business models that measure success in terms of profit, growth, and size. Fenwick issued a warning, though, saying that emphasising a male perspective on business could lead to an unintentional homogenization of the diverse group of women in business.

Since women may face different obstacles or challenges than men, as well as have different intentions, research on female entrepreneurs must pay particular attention to theoretical problems. Research on women's entrepreneurship must therefore take into account both gender and entrepreneurship. It is critical to consider the characteristics and circumstances that are particular to women because they may have a significant impact on how they launch their own businesses.

2.6.1 Microbusiness and Women Entrepreneurship

A successful entrepreneur is one who establishes a new business while carefully monitoring the environment and taking measured risks. Contrarily, entrepreneurship is a process that demands the willingness to innovate, take risks, try new and unproven products, services, and markets, and be more proactive in looking for new business prospects than the competition. A true entrepreneur is creative, highly motivated, and driven to succeed and develop their business acumen. On the other hand, the process of entrepreneurship calls for the willingness to experiment with new and unproven items,

update market offerings, and take risks. It is crucial to help small, medium, and large businesses (United Nations 2006).

Microbusiness owners contribute to the economic growth of any country, and investing in women is one of the most successful methods for ensuring long-term economic success. In recent years, women have had better access to education and health care, but more needs to be done to make sure that women entrepreneurs make good business decisions and grow their businesses into profitable businesses that make money and hire people (International Labor Organization 2017).

Investing in women-owned companies helps to achieve gender equality and poverty reduction by expanding the pool of human resources and talents, as well as economic growth and job creation (Olabisi & Olagbemi 2012). In contrast, significant gender disparities persist in company ownership and entrepreneurial engagement, posing enormous opportunity costs for sustainable development in developing countries. There is widespread agreement that micro- and small businesses are important economic drivers in developing countries (Maden 2013).

Women entrepreneurs are significant in the context of entrepreneurship because they make significant investments in their families and communities (Maden 2013). An increasing body of national data indicates that non-agricultural enterprises play a major role in the income-generating portfolios of many households. According to current statistics, women manage the large informal sector in developing countries such as Nigeria, which accounts for more than half of the economic activity in these countries.

Women control the huge informal sector (Garba 2011).

A woman's drive for financial independence, her passion, her strength, and her will to achieve all contribute to the establishment of new businesses in Nigeria by a woman entrepreneur (WEN) (Dufle 2012). According to Oseremen (2015), women entrepreneurs have a positive impact on the Nigerian economy by contributing significantly to revenue generation and, in some cases, by assisting their immediate families in overcoming poverty, particularly when the husband's salary is insufficient to meet the family's needs. It is vital to remove the barriers that impede women from beginning their own enterprises in order to boost women's entrepreneurship. According to the Nigerian Small and Medium-Sized Enterprises Development Agency (SMEDAN), the MSME sector contributed 47.8% of the country's GDP in 2018, demonstrating the sector's various economic benefits to any country.

2.7 Business Model Innovation

There is minimal research on how digitalization affects microbusiness enterprise models, and there is scant and primarily qualitative literature on microbusiness business model innovation (Heikkilä et al. 2018). Additionally, the strategic and innovation management areas are the key subjects of the current quantitative study. One of the explanations for the poor rate of digital transformation in microorganizations, according to Gruber (2018), is the dearth of studies focusing on the impact of digitalization on microfirms. For instance, small enterprises with focused specialisations are less susceptible to the need for quick digitalization.

Second, a lot of small businesses don't have the resources or the leadership vision necessary to fully understand the implications of the digital transition. Third, microenterprises embrace digitization more gradually than larger firms do. Finally, because financial success is so crucial to digitalization investment, small businesses usually lack the funds necessary to participate in this area. The term "innovation" is also a very general one (Lee & O'Connor 2003; Siguaw, Simpson, & Enz 2006). Two main components have been identified in the literature. There is a dimension pertaining to the orientation, proclivity, or culture of the firm. In this context, the definition of innovation is the company's culture of openness to new ideas (Hurley & Hult 1998).

On the other hand, the capacity of an organisation to adjust to shifting circumstances is dealt with by another dimension. The ability of an organisation to innovate or introduce a novel process, item, or idea is the focus of this dimension. The capacity dimension of innovativeness is typically seen as requiring the culture dimension

as a prerequisite (Bock et al. 2012; Teece 2010). Innovation is viewed as a universal organisational attribute by Subramanian and Nilakanta (1996).

Contrarily, some people think that creativity can be modelled as either a cause or an effect of invention (Garcia & Calantone 2002). It has been demonstrated that redesigning a business model can assist organisations in integrating previously out-of-reach technology into the sphere of business management (Siguaw, Simpson, & Enz, 2006). For instance, Netflix's transition from a DVD delivery service to an on-demand subscription service enabled the company to test data analytics (such as recommendation services) and content production techniques (such as high-budget television production) that were not feasible under their prior business model. Studies demonstrating that adopting parallel business model innovation increases the inventiveness of micro enterprises (Clausen & Rasmussen 2013) provide evidence for this claim.

According to Massa and Christopher (Massa & Christopher 2015), business model innovation has grown in significance over the last 15 years. Within this field, consensus is emerging that business model innovation serves a dual purpose in fostering creativity. To begin, business model innovation is an important vehicle for innovation since it allows managers and entrepreneurs to connect new commodities and technology to a market's realised output. Second, business model innovation may be a source of creativity in and of itself. It is a new type of innovation that's distinct from but complementary to other traditional types like product, process, and organisational innovation (Massa & Christopher 2015).

2.8 Underpinning Theories

2.8.1 Technology Acceptance Model (TAM)

There have been a lot of studies on technological adoption challenges, but not many on internet banking adoption concerns (Rahi et al. 2017). To explore how consumers adopt information technology, the most well-known technology acceptance model (TAM) was developed. TAM is an application of the Theory of Reasoned Action (TRA), which contends that the intention of usage, which is influenced by attitude and perceived benefit, determines how a system is used. Attitude and perceived usefulness are both influenced by perceived ease of usage. A user's perception that something will help them perform better is referred to as "perceived usefulness."

Perceived utility (PU), one of TAM's four components, includes: PEU is the term for a person's disposition and level of readiness to use something (perceived ease of use). A person's PU is their conviction that adopting new technology will increase job productivity and produce better long-term results. PEU is the degree to which a person believes using a particular system would be simple, or the degree to which they believe using a particular system would be simple (Davis 1989).

TAM was designed primarily for the adoption of computer technologies, but it has been shown to be an effective tool for the acceptance and implementation of e-commerce as well (Riantini et al. 2018). Intention indicates the motivational aspects of a consumer's action. Individual intentions to engage in a certain behaviour are at the heart of planned behaviour theory (TPB). Davis (1989) proposed TAM for predicting the intentions of

people who use information systems, which has now been extended to predict consumers' Internet purchase intentions (Aggarwal & Rahul et al. 2018).

Customers have become more intelligent as a result of the banking industry's drastic shift, forcing banks to re-evaluate their offerings in terms of quality. e-Service quality is being seen as the primary competitive weapon, despite the fact that consumers have come to invest their trust in the quality of services offered by banks (Sasono & Waruwu 2021). The TAM states that perceived usefulness, which is defined as the extent to which a person believes that adopting IT would improve his or her job performance, and perceived ease impact a person's behavioural intention to utilise a technology.

Davis (1986), a doctoral candidate at the Massachusetts Institute of Technology, proposed a technology acceptance model for experimentally evaluating novel end-user information systems: theory and results (Venkatesh & Bala 2008). External elements that may affect usage include system design characteristics, decision maker traits, documentation, training, and other sorts of aid (Davis 1989). Several technology user acceptance studies have made use of the TAM and its extensions (Elkhani et al. 2014; Gangwar et al. 2015; Abbasi et al. 2015; Lee et al. 2015). Several technology user acceptance studies have made use of the TAM and its extensions (Shrestha 2019; Tao 2019; Grani 2020).

Bhattacherjee (2001) developed the TAM to assess the adoption of internet banking. Using a cross-sectional field survey of online banking customers, he developed a model for information system usage continuity and tested it. The study's constructs included confirmation, perceived utility, contentment, and continued intention for the information system. Using the structural equation modelling approach, the model was empirically evaluated. According to the statistics, the most important predictor of ongoing usage of the information system was satisfaction. There are numerous TBSS model structures that are comparable to TAM model constructs, according to Davis (1989). The use of TBSS technology was found to be directly associated with self-efficacy, an innate curiosity for new things, the desire to interact with service personnel, and self-awareness.

Four situational variables were found to be waiting times, traffic, deadlines, and social anxiety. They suggested a research plan that incorporates situational therapies like waiting and social anxiety. Their model demonstrated strong convergent and construct validity. Verma et al. (2020) developed an improved TAM for customer acceptance of internet banking. They developed a model by researching TAM literature, concentrating on group interviews with bank personnel, and other e-banking studies.

They argue that six factors influence people's willingness to use it: perceived value, perceived ease of use, security and privacy concerns, familiarity with online banking, perceived enjoyment, and the quality of the internet connection. To validate their concept, they conducted a survey of Finnish bank customers. The empirical findings show that perceived usefulness and information on the bank's website are the most significant drivers of online banking acceptance.

Their strategy could be hampered by the absence of a number of important factors affecting internet banking, most notably the subjective norm that was introduced into TAM. Chauhan et al. (2019) introduced personal inventiveness and perceived risk to the TAM. They found that adoption of internet banking was correlated with perceived usefulness, perceived ease of use, perceived danger, and personal originality. The ability to conduct banking operations from any location, at any time, and the speedier processing times were the main justifications for using internet banking, while the advantages and risks of using ATMs, the convenience of phone banking, and the difficulty of using computers in traditional branches were cited as justifications for not using it. Bank incentives were one of the many factors accelerating the spread of internet banking. On the other hand, this driver is not present at any of the TAMs.

2.8.2 Women Entrepreneurship Development Within the Entrepreneurship Theory

The literature on mainstream entrepreneurship began to appear in the 1930s, with a focus on male entrepreneurs. As illustrated in Figure 2.1, the formation of a unique sub-domain of female entrepreneurship was recognised in the late 1970s (Jennings & Brush 2013). In 1976, Schwartz wrote the first scientific piece on female entrepreneurship in the Journal of Contemporary Business, and in 1979, Washington, DC, produced the first policy study on the subject, titled "The Bottom Line: Unequal Enterprise in America." At the University of California, Berkeley, Schwartz is a management professor. At the Babson College Entrepreneurship Conference in 1981, Hisrich and O'Brien gave the country's first academic conference presentation on female entrepreneurs. The first academic monograph on female entrepreneurs was released in 1985 (Goffee & Scase 1985).

In order to capture the spirit of female entrepreneurs in the developing world, Anwar and Amber (2012) created a model for female entrepreneurs, with an emphasis on female entrepreneurs in the developing world. Anwar and Amber (2012) did not specifically examine the model's technology and innovation components, despite the fact that it was comprehensive in the sense that it considered other dimensions of female entrepreneurship. The article does not address the significance of business model innovation for female entrepreneurs, despite the fact that it is crucial for their success and is a factor in growth (Ewoh 2014).

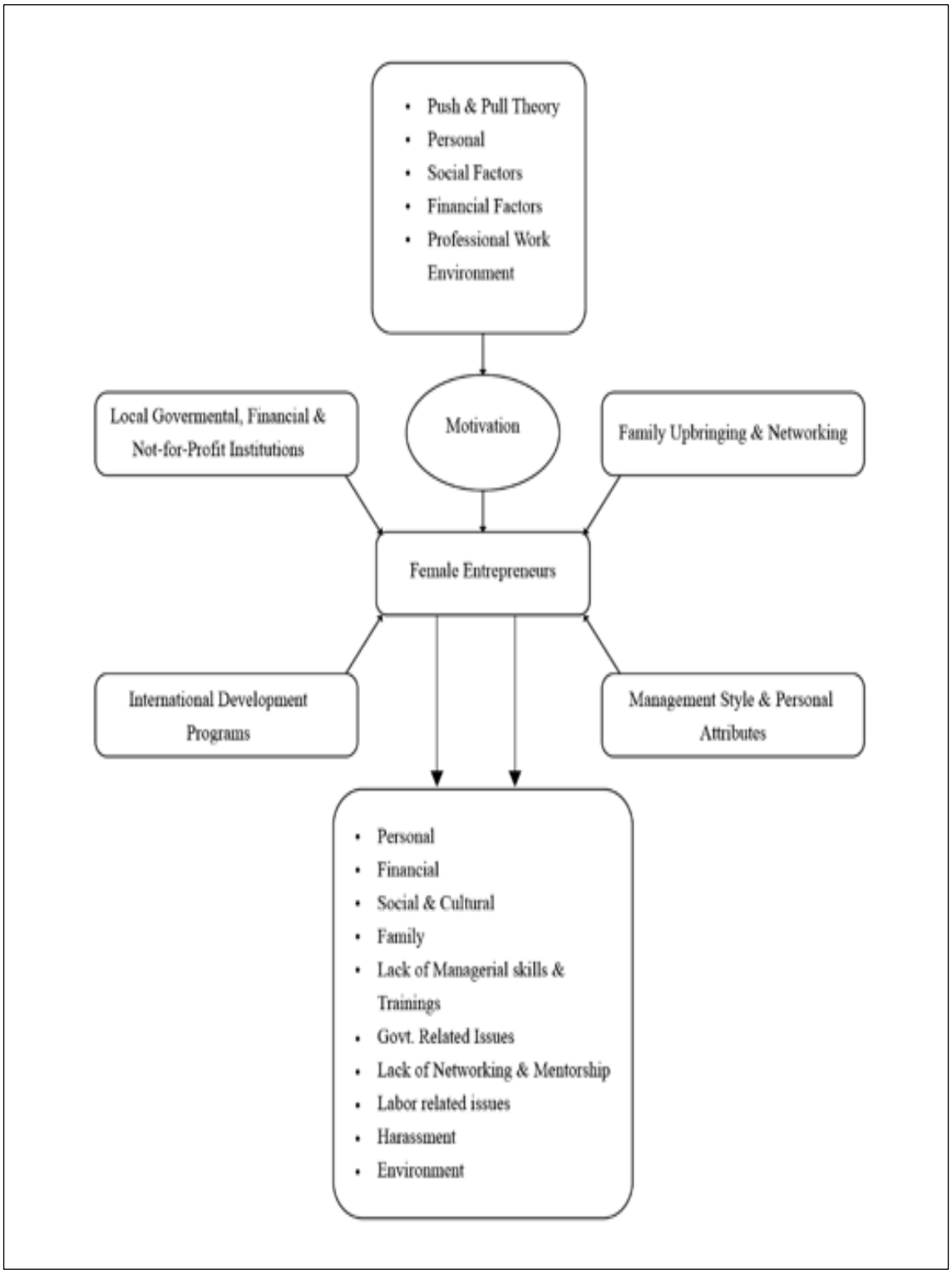

Figure 2.1 Female Entrepreneurship Model

Source: Anwar and Amber (2012)

2.8.3 Push and Pull Theory

The existence of complex push and pull mechanisms that either encourage or discourage women from pursuing entrepreneurship has received some (although minor) attention. Self-employment, according to the push viewpoint, is associated with corporate reduction and reorganization, as well as increased flexibility in work arrangements. Situations that could lead to a push need to include reorganising the public and private sectors, cutting back on government spending, fewer job opportunities, and the rise of private initiative, individual creativity, and economic freedom.

Self-employment is primarily determined by individual autonomy, according to the pull approach, with the purpose of improving corporate culture (Kuhn & Schuetze 1998). The results of studies linking female entrepreneurship to one of two points of view have been ambiguous (Arai 1997). However, increasingly gender-specific studies of industrially successful civilizations like Canada and the United States have revealed that push characteristics are less important to women entrepreneurs than pull variables (Zgheib 2018). Bianchi et al. (2017) found that women's choice to work for themselves hurts gender equality at the national level.

Furthermore, it has been established that gender equality laws pertaining to employment rights cause women to favour job opportunities over self-employment opportunities (Nyame-Asiamah et al. 2020). In this vein, Nguyen (2020) discovered that in countries with a larger state sector, women are less likely to engage in entrepreneurial activities. In developing economies, women's entrepreneurship incentives may be more polarised (Belcourt 1988). The entrepreneurial model is expected to grow and adapt to

gender specific characteristics, given the distinctive ways in which women engage in self-starting firms. In the context of women, the concept of entrepreneurship is adapted to fit family duties and particular social female roles while still providing a way for women to realise themselves (Lee-Gosselin & Grise 1990).

Locke and Latham (2004) write that the concept of motivation relates to internal aspects that compel action as well as external elements that can serve as inducements to action. Motivation affects three aspects of action: direction (option), intensity (effort), and duration (duration) (persistence). Motivation has an impact on not just how and to what extent people acquire skills and abilities, but also how and to what extent they employ those skills and abilities. Opportunity (pull) and necessity (push) are the two types of motivations or reasons (Acs 2006; Reynolds et al. 2005).

Therefore, incentives used in business can be classified as "push" or "pull" factors. In Malaysia in particular, as well as other developing nations, female entrepreneurship has also been researched using the push and pull theory. The extent to which gender influences a person's decision to start a business is a hotly debated topic (Mastercard 2018). Research conducted by Mastercard in 2018 on female entrepreneurs in 53 countries revealed that discrimination based on gender was more prevalent in developing and emerging markets than in developed markets.

Other factors determining whether female entrepreneurs are more motivated by push or pull motivation have also been extensively examined (Mastercard 2018). According to studies, a female entrepreneur's motivation to establish a firm may be a mix of push and pull forces, allowing women to take more responsibility for their families, pursue independence and a higher salary, and overcome professional discontent (Mastercard 2018; Benzing et al. 2005; Cromie 1987). Perri and Chu (2012) found that the top five reasons why women in Malaysia and other countries start their own businesses are to make more money, be their own bosses, create jobs for family members, use their previous skills and training, and ensure job security.

Additionally, just 28% of the female participants named a push factor, such as unemployment, as the reason they started their enterprises, as opposed to 72% who highlighted favourable possibilities or their credentials (Jafari-Sadeghi 2021). Literature on the issues and elements that contribute to female entrepreneurs' success in developing countries like Malaysia can be categorised using internal and external domains. In contrast to human limitations, external factors have been highlighted as barriers to success in various studies, including onerous government regulations, a lack of infrastructure support, restricted access to funding and training, and gender-biased conventions (i.e., internal variables) (Panda 2018; Mastercard 2018; Wang 2016).

When compared to these external determinants, personal elements such as sufficient prior experience, entrepreneurial qualities and talents, and community involvement were found to significantly influence business performance (Mastercard 2018; Benzing et al. 2005). In contrast to external push motivators like the business

environment and government regulations, which are more likely to be seen as barriers to business growth, internal factors like pull motivators, personality traits, personal backgrounds, and professional experience play a significant role in determining business success. To construct this study project and better understand the experiences of the Malaysian entrepreneurs who participated in it, a review of the factors affecting female entrepreneurship in general and female entrepreneurship in Malaysia in particular was employed.

2.9 Research Gaps

There have been many studies and research in the area of entrepreneurship, and only recently has there been significant interest in female entrepreneurs (Anwar & Amber 2012). Studies in general investigate the relationship between the factors that affect micro, small and medium enterprise performance (to name a few: Mulugeta 2014; Nasip et al. 2015; Wiklund & Shepherd 2005), while some other studies focus on issues and challenges faced by women-owned businesses (to name a few: Satyajit et al. 2017; Wube 2010).

However, there is a research gap regarding the relationship between technology adoption readiness and business model innovation as a key contributor to the business growth of women-owned microbusinesses, particularly in Malaysia and specifically in the services sector. Zhe and Abdul Hamid (2021) only focused on technology and performance; they did not look into business processes. This means that there are gaps in business model innovation that can be researched. The second parent literature tried to relate business performance with business model innovation. However, the literature does

not directly relate business model innovation to technology adoption. This presents another gap for research, and there is a need for research to look into female entrepreneurs' traits towards technology adoption readiness and innovation.

This study also looks into the connections between business model innovation and technology-ready women who run microbusinesses. Despite the fact that SMEs are the economic engines that employ the majority of people (EASME 2015), little research has focused specifically on business model innovation at SMEs. When Scopus was searched for SME and business model innovation, only 16 articles were discovered. According to Guo et al. (2016), business model innovation is a critical component for SMEs to capitalise on the business opportunities they have discovered and improve their performance. However, it is still unclear how SMEs would alter their business strategies (Foss & Saebi 2017; Barjak et al. 2014).

In general, business model innovation is believed to come from a SME's strategy actions (Cortimiglia et al. 2016; Demil & Lecocq 2010); therefore, managers are expected to keep their strategic goals in accordance with these essential components. Arbussa et al. (2017) discovered that while SMEs can overcome size restrictions through resourcefulness, strategic sensitivity is less common and therefore more crucial for SMEs. When business model innovation is used in conjunction with a formal corporate strategy, most companies often prioritise the design or enhancement of their core operations and resources first (i.e., the value creation dimension of business model innovation). An empirical study by Cortimiglia et al. (2016) involving small, medium-sized, and large firms found that they create the other business model innovation components.

The majority of SMEs, however, lack a formal strategy process (Lindgren 2012), don't generate new business models in a systematic manner, and see business model innovation as a highly emergent and frequently unplanned process (Laudien & Daxböck 2017). Strategic goals (create a new firm, seek expansion, or seek profitability) lead SMEs along an alternative innovation path in terms of the business model innovation components affected, according to a multi-case study involving SMEs innovating their business model (Heikkilä et al. 2018).

Beginning on the right-hand side of a business model innovation canvas, growth seekers—mostly male entrepreneurs—dominate. Profitability seekers start on the left, and new businesses adopt a cyclical strategy, breaking down each component of their business model innovation, testing it, and rebuilding it as they go. As a result, it is difficult to predict the results or statistics about the adoption of new business models and technological capabilities by Malaysian women microentrepreneurs.

According to the case study, SMEs are concentrating their modifications on two business model innovation components at any given time. This shows that they are gradually modifying their business model, addressing the most pressing issues first. The focus varies depending on the SME's strategic goal. Profit-seeking SMEs focus their business model innovation efforts on optimising their operations, and they pay the most attention to expenses compared to the other two types of SMEs.

Growth-oriented SMEs emphasise client needs by concentrating on client interactions and segmentation. Prior to iteratively and dynamically developing the other components of business model innovation, new businesses focus primarily on the value proposition. This study performs a very fundamental analysis of the research data. Numerous in-depth, more explanatory studies can be performed using the given data.

2.10 Conceptual Framework

The technology adoption readiness among women microentrepreneurs with regard to their business model innovation has been ignored as the norm, as stated in the previous sections. There are several studies that investigate the relationship between the factors that affect general micro, small, and medium enterprises' performance (Mulugeta 2014), while some other studies focus only on issues and challenges faced by women-owned businesses (Satyajit et al. 2017).

However, there is still a gap in studies on the relationship between the technology adoption readiness of technology-ready women microenterprises and the mediation effect of business model innovation in Malaysia. The gap this study fills is illustrated as per Figure 2.2.

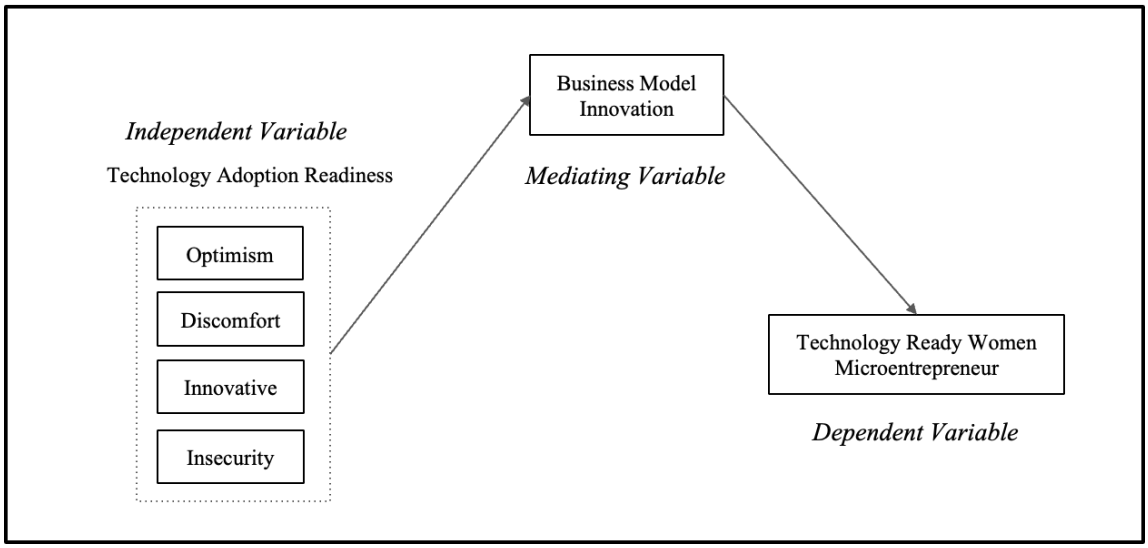

Figure 2.2 Conceptual Framework

2.11 Hypotheses Development

Nair and Singh (2019) defined technology readiness as people's propensity to adopt and employ new technologies to attain goals in their personal and professional lives. To measure people's attitudes and views regarding technology in general, Parasuraman (2000) created the technology readiness index (TRI), which is depicted in Figure 2.3. A positive attitude toward technology, such as optimism and a desire to lead the way in the use of emerging technology, can exist alongside a negative attitude, such as a tendency to be uneasy and sceptical of technology. The four components of technological preparation emerged as optimism, innovativeness, discomfort, and insecurity.

A positive attitude toward technology and a conviction in its advantages for improving work efficiency and elevating one's performance at both work and home are considered characteristics of optimism. A person's propensity to experiment with technology and be among the first to test out new technology-based goods or services is reflected in the innovativeness component. A lack of technological proficiency and confidence in using cutting-edge technology are revealed by the dissatisfaction dimensions. Although there is some overlap with the discomfort dimension, which focuses on how generally inconvenient technology is, the insecurity dimension focuses more on scepticism of technology-based transactions and concern over what it might be capable of.

Optimism and ingenuity, the first two aspects of technical readiness, are "contributors" that can increase technical readiness, whereas discomfort and insecurity, the other two aspects, are "inhibitors" that can lower technical readiness (Nair 2019). According to Nugroho (2017), technological readiness is a measure of one's attitude toward technology rather than one's ability or skill with it. According to their level of technological readiness, users are classified into five groups: explorers, pioneers, sceptics, paranoid users, and laggards. The highest score is on the contributors' dimension (creativity, optimism), while the lowest score is on the inhibitors' dimension (discomfort, insecurity). New technology often captures the attention of explorers, who frequently adopt it first.

Laggards, on the other hand, are the last group of people to adopt new technology, and they have the greatest scores in both the contributor's dimension and the inhibitor's component. The opinions of the other three groups—pioneers, sceptics, and paranoids—on technology are more complex. Pioneers, like explorers, are highly optimistic and inventive, but if they feel uneasy or insecure, it will be easy for them to give up. Though they lack technological drive, sceptics also lack technological restraint.

Therefore, it is necessary to convince them of the advantages of early technology adoption. Technology is exciting to paranoids, but they also consider risk factors, as shown by the high level of annoyance and unease (Nugroho 2017). Explorers and pioneers are more likely than other types of people to accept new technology, claim Parasuraman and Colby (2000), as well as Nair (2019).

The ability to adopt and use new technologies to accomplish goals in one's personal and professional life is known as technological readiness (Parasuraman 2000). There are both favourable and unfavourable opinions about technology. Different beliefs are to be expected among people. These ideas collectively characterise a person's propensity to engage with emerging technology (Parasuraman & Colby 2001). The findings also demonstrate that these beliefs can be divided into four categories: comfort, fear, creativity, and optimism (Parasuraman 2000).

Optimism is defined as a favourable attitude toward technology and the belief that technology gives people more control, flexibility, and effectiveness in their lives (Smit 2018). It conveys a positive outlook on technology in general. Innovativeness, as defined

by Dube 2020, is the propensity to be a thought leader and a technology pioneer. This dimension measures how far people think they are in front of the technology adoption curve. Being uncomfortable is defined as feeling outmatched by technology and having a false sense of control over it (Chang 2021). This dimension frequently gauges people's anxiety and anxieties when they are exposed to technology.

Insecurity is characterised by a mistrust of technology and doubts about its effectiveness (Kamble 2019). Concerns about technologically facilitated transactions are the main topic of this dimension. Optimism and creativity are the driving forces behind technology preparedness. A person is technologically prepared if he or she score highly on these dimensions. However, discomfort and apprehension are obstacles to technological readiness. According to Nugroho's (2017) research, a high score in these categories will reduce overall technology readiness. He added that each of the four components is distinct and makes a unique contribution to a person's technological preparedness.

According to Codurasa et al. (2016), numerous factors should be taken into account when assessing how technologically prepared entrepreneurs are, and the assessment should take into account innovation at the level of business processes in addition to psychological, social, and ecosystem factors. Technology readiness is defined as people's propensity to adopt and use new technologies for achieving goals in their personal and professional lives (Parasuraman 2000).

In theory, there are four dimensions of technology readiness: (i) optimism—where new technology has a positive impact on people's lives and they have control over it; (ii) innovativeness—where people have a tendency to be new technology pioneers; (iii) discomfort—where people perceive new technology as difficult to control and will be overwhelmed by it; and (iv) insecurity—where people have a sceptical feeling and distrust of it. Similarly, optimism and inventiveness are viewed as motivators for adopting new technology, whereas pain and insecurity are viewed as inhibitors (Parasuraman & Colby 2014).

The Technology Readiness Index (TRI) and the Technology Readiness Level are two related technological readiness evaluation systems (TRL). TRI and TRL are generally not interchangeable because they serve different purposes and aims. In reality, TRL is a technical-based measurement scale used to assess the maturity of specific technologies and compare various types of technologies, such as in NASA's space technology planning, whereas TRI is a marketing-based measurement scale used in a survey focusing on people's willingness to adopt new technology in the service domain, such as the use of the internet in business (Parasuraman 2000; Mankins 1995). This study focuses more on the former than the latter due to the nature of the investigation.

The term "TRI" was first used by Parasuraman in his publication from more than twenty years ago, entitled Technology Readiness Index (TRI): A Multiple-item Scale to Measure Readiness to Adopt New Technologies. Since then, it has been cited over 1700 times, with an average of about 100 citations per year. According to the definition given above, TRI was developed to gauge people's openness to embracing new technology.

TRI's original scale contained 36 points: 10 for optimism, 7 for creativity, 10 for discomfort, and 9 for insecurity (Parasuraman 2000).

Despite this, the original TRI was altered due to technology developments and sophisticated interactions, and the final confirmatory factor analysis revealed a 16-item scale (Lin & Hsieh 2012). Similar to this, the first TRI was modified, and the discovery of a 16-item scale led to the formal introduction of TRI 2.0. The new version of TRI is anticipated to increase its applicability and generalizability across contexts and cultures for both researchers and practitioners (Lin & Hsieh 2012).

Because it is more intelligent, less stressful on respondents, and robust enough to be used in many contexts over time, TRI 2.0 offers a wider range of applications (Parasuraman & Colby 2014). However, because the scale is so new, it is presently difficult to find research that has used it. Future research should benefit from utilising TRI 2.0 to evaluate the IoT readiness of microfirms in Malaysia. Therefore, the hypotheses developed for this study are:

H_1: There is a positive relationship between technology adoption readiness and business model innovation.

H_2: There is a positive relationship between business model innovation and technology ready women micro business

H_3: Mediating effects of business model innovation between technology adoption readiness and technology ready women microentrepreneur

$H_{3.1}$: Mediating effects of business model innovation between optimism and technology ready women microentrepreneur

$H_{3.2}$: Mediating effects of business model innovation between discomfort and technology ready women microentrepreneur

$H_{3.3}$: Mediating effects of business model innovation between innovativeness and technology ready women microentrepreneur

$H_{3.4}$: Mediating effects of business model innovation between insecurity and technology ready women microentrepreneur

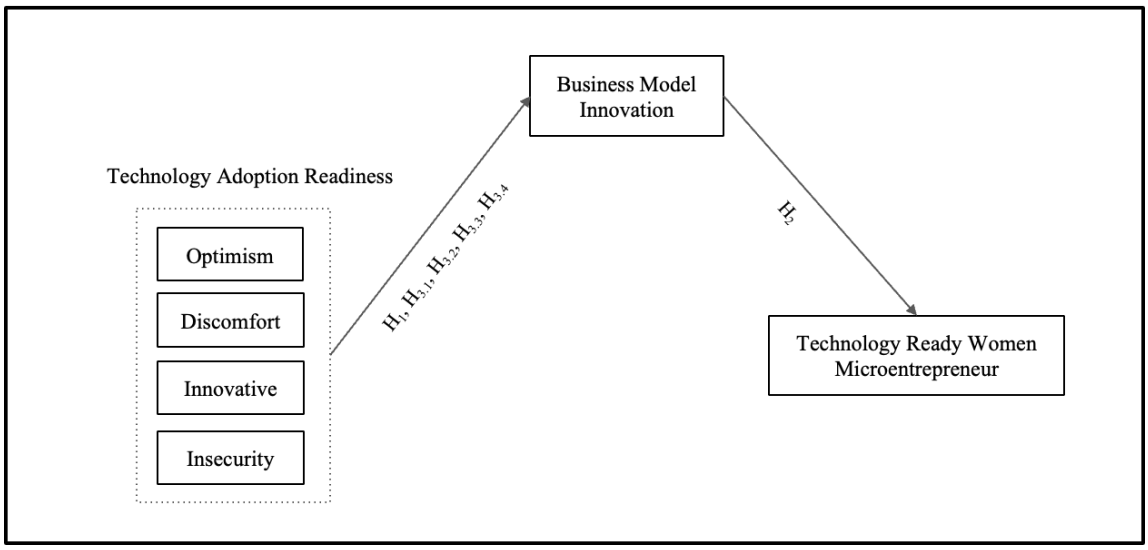

Figure 2.3 Hypotheses Development

2.12 Summary

The vast array of new prospects generated by digitalization is putting pressure on micro-enterprises to rethink their current business models or critically examine their current strategy in order to discover new business opportunities (Kiel 2016). Wirtz, Schilke, and Ullrich (2010) state that managers may need to alter one or more aspects of their business model or even come up with completely new ones. This study focuses on microbusinesses that are testing new business models as a result of a strategic choice to use social media, big data, and/or information technology as manifestations of the digital transformation (Rachinger et al. 2018).

This study applies Al-Debei and Avison's (2010) viewpoint, in which business models are considered tools for implementing strategic decisions. The activities and modes of operation used by a team in charge of an experimental process are known as business model strategy implementation processes. Since resources must be invested in order to achieve business model innovation, this study focuses on resources for business model experimentation as an explanatory factor. This money will be used to assign tasks for testing business models to a particular manager or team.

Women are continuously underrepresented in policymaking and manpower development, regardless of their population or educational, economic, or social status. However, given the dynamic nature of the entrepreneurial environment, a number of developments have emerged, including increased awareness of women's potential and economic impact (Mordi et al. 2010).

CHAPTER THREE
METHODOLOGY

3.1 Introduction

This chapter describes the study's research methodology. This chapter begins with the research paradigm and research design before discussing the research process and justification for choosing a quantitative method. This chapter then discusses the study's population, selection criteria, sample size and sampling technique. In addition, this chapter stressed research instrumentation, data collection, questionnaire design and administration, and questionnaire pre-testing. This chapter concludes with a discussion of the study's reliability, validity, and statistical analysis.

3.2 Research Paradigm

Marvasti (2018) stated the notion and methods of exploring social phenomena by having some understanding of how to interpret the results of such phenomena are referred to as paradigms in social science. As a result, the way social science and management research are conducted has profoundly changed. Between positivism and constructivism, the two classic schools of thought, Khaldi (2017) argued that there is an age-old philosophical debate in the literature regarding the research paradigm that scientific philosophers and researchers should follow. The sections that follow explore these two philosophical frameworks in detail.

3.2.1 Positivist Paradigm

The positivist epistemological perspective leans toward objectivism, in which this study strives to find absolute consciousness of objective reality by drawing a line between the investigated entity and the researcher. As a result, Park, Konge, and Artino (2020) explained the primary meanings sought by the researcher are found in the examined item, not in the researcher's conscience. In the meantime, Cassell et al. (2018) mentioned a positivist researcher stays independent while looking for meaning and connections between interesting things, and hypotheses are often used to come to clear conclusions.

Similarly, Berkovich (2018) explained the positivists accept quantitative research as a result of using empirical methods to describe phenomena, emphasising meticulous and effective data gathering procedures to explain and justify behavioural patterns and logical generalisations. According to positivism, Panhwar, Ansari, and Shah (2017) stated the ability to generalise the results acquired from a specific sample within a population is the characteristic of positivists. Quantitative research methodologies and instruments are utilised in behavioural and administrative science to clarify relationships. Because the purpose of this study is to examine a conceptual framework and its underlying assumptions using a survey-based quantitative analytic method, it is clear that the positivist model is a better philosophical approach than constructivism for fulfilling the study's objectives.

3.2.2 Constructivism Paradigm

According to Alharahsheh and Pius (2020), constructivism is another epistemology that emphasises the importance of taking individual characteristics into account while interpreting others' social roles and events. Researchers in constructivism aim to achieve research goals by investigating and analysing social phenomena. Pham (2018) also mentioned the researcher's task is to attempt to grasp the social world of the study setting and subject, in particular, and discover those essential social reality truths.

Ukauskas et al. (2018) stated that constructivism automatically incorporates themselves into the environments of study subjects to familiarise themselves with their real-life conditions. Rather than employing external variables or other fundamental theoretical ideas, the philosophical analysis focusing on constructivism in this study uses qualitative approaches to characterise phenomena directly from context. As a result, this concept is based on qualitative data collection (Pham 2018).

Positivists construct hypotheses, collect relevant information, test the hypotheses, then draw conclusions based on the results by approving or denying the outcome. The knowledge of linkages or patterns is crucial in this situation. Constructivism, on the other hand, is based on the principle of learning patterns to find purpose and progress in society. Through hypothetical relationships, this study has a significant impact on this strategy. Their contention is that the positivists' emphasis on statistical patterns or connections is nonsensical. As a result, interpreters believed it was critical for a researcher to identify the meanings of people's actions that led to such patterns.

3.3 Research Design

A research design is a process for gaining answers to specific questions or problems that includes a strategy, structure, and methodology. The plan refers to the research's general design or application. Asenahabi (2019) stated that it explains what the investigator will do, from crafting the hypothesis and its operational implications to evaluating the final analysis. Another definition of a research design is a strategy or framework created to address research questions, operationalize variables so they can be assessed, select an interesting pattern to examine, gather data to be quantified as a foundation for testing hypotheses, and analyse the findings (Abutabenjeh & Jaradat 2018).

According to Davidaviien (2018), the most important parts of a study using Saunders' onion were planning and design. The foundation is the exterior layer, while the middle levels are the study's building pieces. Zolfagharian et al. (2019) stress the necessity of making research designs visible, recognising which designs work best, and aiding researchers in identifying and adjusting study designs as needed.

According to Hui (2017), it aims to address a variety of issues such as research philosophy, methods, methodological choice, research strategies, research methodologies, time horizon, and study techniques and processes. The benefits of the research "onion" led to a number of steps and processes that can be used to define a methodological observation that is in line with the study's goals and research questions (Alharahsheh & Pius 2020).

Apart from categorising studies based on technique, Cherif (2020) defined categorising studies based on aim as demonstrating how the nature of a selection may influence the methodology of a study. They also suggested that getting useful results requires combining a decent selection of cases with the right study methodology. Exploratory, descriptive, and causal research are the three forms of study.

i. Exploratory research: Exploratory studies are required when the researcher has no prior knowledge of how the research concerns were resolved or has restricted access to records and thus needs additional information to develop a viable theoretical framework (Hallingberg et al. 2018).
ii. Descriptive research: Descriptive research aids in understanding the features of variables in a specific context and developing a systematic perspective regarding factors in that situation (Personal et al. 2018; Vaismoradi et al. 2013).
iii. Causal research: Causal studies were focused on hypothesis testing and the need to explain the nature of specific interactions (Kamat & Reiter 2020).

In this study, descriptive research was utilised since it is frequently used to identify and characterise the properties of study variables in a specific setting. Descriptive studies, in contrast to exploratory investigations, are undertaken once the researcher has gotten a complete understanding of the issue being investigated. Descriptive studies, according to Zucker (2009), give ideas for additional inquiry and probing. Furthermore, it facilitates rapid decision-making.

3.4 Research Processes

According to a positivist definition, research is a rigorous, scientific search for knowledge about a particular subject. It entails deciding on and redefining the research question, developing hypotheses, assembling, organising, and analysing data, drawing conclusions, and then testing the conclusions to see if they support the theory (Kothari 2004).

In this section, this study looks for a good study design, which is quantitative research, to achieve the research's goal. In order to meet the objectives, this study must screen, adopt, and/ or adapt the instruments in accordance with the study objectives. Then, since the purpose of the pilot study is to ensure the instrument's reliability and validity (Wong & Yamat 2020; Srinivasan & Lohith 2017), this study conducted a pilot study with 45 female microentrepreneurs. This study began conducting fieldwork by collecting data via an online platform over the course of three months after receiving the findings of the pilot test. To achieve the goal, the data was then thoroughly examined utilising descriptive and inferential analysis. The summary of the research procedures used in this study is shown in Figure 3.1.

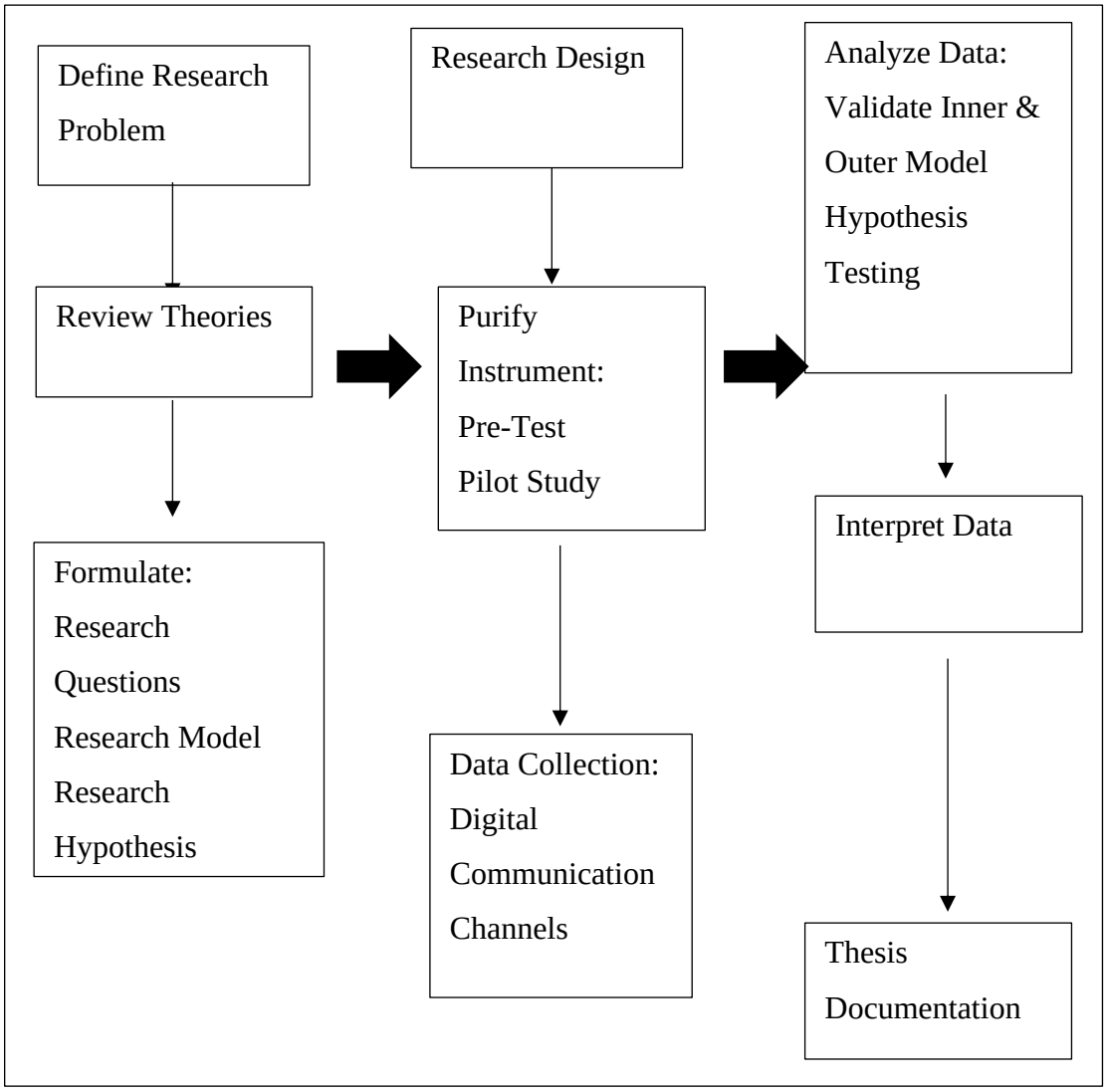

Figure 3.1 Research Process

Source: Sekaran (2003)

The first step in this study's research methodology is to define the research problem. The study's issue statement was derived from a review and analysis of literature on business model innovation, which has been highlighted as a significant growth for women microbusinesses (Adam et al. 2022). The results indicate that more research is

required to identify the factors that influence how ready women's microbusinesses are to adopt technology.

During the literature review phase of analysing entrepreneurial theory, two categories of essential information are examined: (i) findings from prior research that focuses on women's entrepreneurship development and technology adoption, and (ii) theories and concepts based on previous research. The study's questions, versions, and hypotheses are all based on this data.

According to Sekaran (2003), during the formation of the research design, the following six critical parts of the research design were examined: study purpose, modes of investigation, researcher interference, unit of analysis, and time horizon. This study uses a descriptive study methodology to collect data from mobile banking consumers via a digital communication channel approach after analysing the six key ideas. The research hypotheses, research models, and research questions are validated, analysed, and answered based on the individual's data source.

The research tool is improved for this observation by using measurement scales discovered in previous investigations. Modifications are made to the chosen products to ensure that they are appropriate for this investigation. The validity and reliability of the research instrument are assessed using data from a pre-test and a pilot study. After the study equipment has been validated, the real data collection begins (in terms of validity and reliability).

Furthermore, the information for this study was acquired via a digital communication channel technology. The sample for this inquiry was chosen using a systematic sampling approach. The data is analysed using multivariate and correlation analysis techniques. Finally, a thesis is written to interpret and document the findings.

3.5 Justification for Employing Quantitative Approach

The quantitative survey methodology is used in this study because it is the most appropriate research design and approach for a variety of reasons. First and foremost, the study's major objectives may be successfully met by using a quantitative technique involving primary data gathering and testing of a theoretical model to explain and forecast the respondents' future behaviour (Rahi 2017). This study has opted to do quantitative research in this study, which adjusts the data, numbers, and values to represent the study's research conception. The study is based on quantitative research, which develops specific empirical and observable measures of variables chosen to provide absolute conclusions at the end of the process.

Data measurement and analysis are possible with quantitative research. It has the ability to look into the relationships and causality of the research variables. As mentioned by Alase (2017), this is beneficial since the results of the investigation are more objective. Asenahabi (2019) also highlighted that because of its ability to measure data using statistics, quantitative research may also evaluate hypotheses. The method is a big part of qualitative research. On the other hand, Pea-Garca et al. (2020) and Bell et al. (2017) explained quantitative research focuses on structural issues in order to verify hypotheses, providing a more objective perspective on the study and its participants. In quantitative

research, hypothesis testing allows for the interpretation of empirical results by normalising the data.

3.6 Population, Selection Criteria and Unit of Analysis

The population for this study is women microentrepreneurs in Malaysia since, in accordance with Burns and Grove (1993), a population is defined as all elements (individuals, objects, and events) that satisfy the sample requirements for inclusion in a study. These women are the owners of their respective companies and run the day-to-day operations. This population was chosen because this study needs to conduct a questionnaire survey on women microbusinesses that are either undergoing or have recently completed technology adoption readiness to improve aspects of their businesses. This reflects the mindset and willingness of these business owners to adapt and adopt as technology and market trends shift, specifically during the post-Covid-19 period.

Despite Neuman's (2003) assertion that there is other more units of analysis, including individual, group, organisation, social category, social institution, and society, there is only one unit of analysis available for this study. The individual women business owners in Malaysia serve as the unit of analysis. To ensure representation from the whole of Malaysia, this study decided to conduct the questionnaire survey in five regions, as shown in Table 3.1. Through this method, the findings and data analysis discovered was accurately represent women microentrepreneurs nationwide and will create better value for the study. Based on the recent census by Department of Statistics Malaysia (2020), total population size for this study is 183, 000 firms with 15.9 million females all around Malaysia grouped into strategic regions. The number of targeted sample sizes then was

calculated based on Krejcie and Morgan (1970).

Table 3.1

Target Sample Size = 421 respondents

Regions	States by Region in Malaysia	Percentage %	Target Sample Size
North	Perlis, Pulau Pinang, Kedah	13.0	55
South	Negeri Sembilan, Melaka, Johor	17.0	72
Central	Wilayah Persekutuan Kuala Lumpur, Selangor, Perak, Wilayah Persekutuan Putrajaya	36.0	151
East Coast	Pahang, Kelantan, Terengganu	14.0	59
Sabah & Sarawak	Sabah, Sarawak, Wilayah Persekutuan Labuan	20.0	84
		100%	421

3.7 Sample Size

The sampling strategy and sample size, according to Sekaran and Bougie (1970), are crucial in determining the representativeness of the sample for generalizability. If the right sampling technique is not utilised, a large sample size will prevent the results from being applied to the full population. Similarly, no sampling procedure, no matter how complex, aid this study in achieving the study's goals unless the sample size is sufficient

to provide the requisite level of precision and confidence. As a result, while making sampling decisions, both the sampling design and the sample size should be addressed.

According to Sekaran and Bougie (2016), this study calculated the proper sample size for this study using the following formula:

Equation 1: Sample Size Formula

$$S_{\bar{x}} = \frac{S}{\sqrt{n}} \; X \; \sqrt{\frac{N - n}{N - 1}}$$

N is the total number of elements in the population, n means the sample size to be estimated, SX denotes the standard error of the mean estimate, and S denotes the sample mean standard deviation, and S denotes the sample mean standard deviation. This formula provides a general estimate of the sample size needed for a simple random sample, which can be adjusted based on the specific research question and context. It is important to note that sample size calculations are complex and require careful consideration of the research question, study design, and statistical analysis. The study would need to know the level of precision, or margin of error, the participants are willing to tolerate, as well as the level of confidence they desire, to determine the target sample size based on Krejcie and Morgan (1970).

Assuming a margin of error of 5% and a confidence level of 95%, Krejcie and Morgan (1970) provide a table, as shown in Table 3.2, that can be used to determine the sample size needed for a given population. According to Table 3.2, for a population of 1,000,000, the recommended minimum sample size is 384. However, it is worth noting

that this is only an estimate and that other factors, such as the population and research design variability, may also influence the appropriate sample size. This study had a total sample size of 421 respondents.

Table 3.2

Sample Size by Krejcie and Morgan (1970)

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

3.8 Sampling Technique

For the primary research, complex probability sampling was used, which combined systematic, cluster, and area sampling methods. Complex probability sampling algorithms are a viable alternative to unrestricted design. Sekaran and Bougie (2016) explained efficiency is improved by using some of the more advanced probability sampling procedures rather than the simple random sampling design, allowing more information to be obtained for a given sample size. They also explained the systematic sampling design starts with a randomly picked element between 1 and n and then draws every nth element in the population.

Cluster sampling divides the target population into groups first. Then, a random sample of clusters is generated for each chosen cluster, and either all items or a sample of elements are added to the sample (Sekaran & Bougie 2016). Following that, the sample process has been carried out using the area sampling method, which is a type of cluster sampling.

3.9 Research Instrumentation

Further action has been taken by this study to coordinate all the instruments chosen into one design of questionnaire. The questionnaire developed incorporates different segments that could ease the process of data collection. Section A investigated by researchers in order to learn more about the demographics of the respondents. Section B discussed on factors for technology adoption readiness and Section C discussed on technology readiness and business innovation.

3.9.1 Nominal Variables

Any variable where the values, even if they are numbers, serve only as labels is referred to as a nominal variable. When categorising respondents' ages in Section C of the questionnaire, for example, a study utilises the numbers 18 - 24, 25 - 45, and above 45. Many statistical computations, such as mean and standard deviation, cannot be performed using nominal data since such statistics have no meaning when applied to nominal variables (Sekaran & Bougie 2016). Cross tabulations can, however, be done with nominal variables. A cross-tabulation of nominal data can be used to perform the chi-square test.

3.9.2 Interval Variables

In the interval data construct that derives from the Likert scale, there are a number of statistical analyses that can be performed, such as mode, median, mean, percentiles, range, standard deviation, and average deviation (Sekaran & Bougie 2016). An even interval such as 1–5 or 1–7 ensures that respondents who are not sure of the answers will answer the questions. With regards to this study, this study has decided to use 1–5 as the

constructs have psychological elements (Sekaran & Bougie 2016). Therefore, the range of 1–5 spreads from:

i. 1= Strongly Disagree
ii. 2= Disagree
iii. 3= Neutral
iv. 4= Agree
v. 5= Strongly Agree

3.9.3 Measurement of the Variables: Sources and Definitions

As highlighted earlier, three types of variables were involved in this study: a dependent variable (technology-ready women microentrepreneurs), an independent variable (technology adoption readiness), and a mediating variable (business model innovation). The measurement for all these variables was adopted from previous studies. Table 3.3 lists the sources and definitions of these variables.

Table 3.3

Variables, Sources and Definitions

Variable Type/ Variable Name	Sources	Definitions
Dependent Variable (DV)/ Technology Ready Women Microentrepreneurs	Hess (2012)	Achieving the intended framework for technology onboarding for women micro businesses in the services sector essentially derives from the need of growth itself, as mentioned by Hess (2012); whereby it is viewed from the innovative organizational design and the key individual behaviour that propels the needed strategies (Hess 2012). Therefore, in this study, the gathered information by the researcher will shed light to the readiness of the women microentrepreneurs, whereby the respondents will be asked to select their level of readiness which consists of attaining the desired growth, growing their business' market share, maintaining existing customers and generating new leads, as well as constructing positive and engaging organizational public image.

Independent Variables (IV)/ Technology Adoption Readiness	Parasuraman (2000)	Both the importance of technology in interactions between customers and businesses and the number of technology-based goods and services are expanding quickly. Although customers have profited from these innovations, there is evidence that customers are becoming more frustrated when using technology-based processes. This article first proposes the notion of technology readiness of people and examines its conceptualization, drawing on knowledge from the existing literature and significant qualitative research on customer reactions to technology. The study programme that was used to operationalize the construct, create and improve a multiple-item scale to measure it, and evaluate the scale's psychometric qualities is then described. The scale's possible practical uses are discussed at length in the article's conclusion, along with a research agenda for further study that will help us better understand how technology affects customer service and marketing.

Mediating Variable (MV)/ Business Model Innovation	Clausen & Rasmussen (2012), Zott & Amit (2010), Chesbrough (2010), Reinmoeller & van Baardwijk (2005)	The idea behind business model innovation is that companies develop by utilising their internal resources and competencies (Zott & Amit 2010). As a result, it has connections to several of the innovation techniques mentioned by Reinmoeller and van Baardwijk (2005), including knowledge management, exploration, cooperation, and entrepreneurship. Business models must be flexible enough to adapt to changes in the market, the environment, and other factors, according to Chesbrough (2010), who observed that technology improvements drive firms to shift. When it comes to converting scientific knowledge into commercially viable, innovative products, technology transfer agents are crucial. Organizations that integrate and apply business models intended to deliver research-based breakthroughs to various market segments consequently have a greater impact as technology transfer agents and are more likely to be successful (Clausen & Rasmussen 2012). However, it is important to highlight that not all business

		structures foster innovation, with some contributing to a higher level of inventiveness.

3.9.3.1 Demographic Analysis Techniques

Demographic data is factual information collected about the characteristics of the population, such as age, educational background, work experience, and others. It is commonly used to investigate an item or service to see how well it is doing, who likes it, and in what areas it is well-known. Data can be collected using various methods, such as test surveys and questionnaires. This study has prepared fifteen questions (self-developed by this study) to be answered by the respondents, as shown in Table 3.4. Appendix G presents the actual version of the questions.

Table 3.4

Demographic Profile

No	Demographic	Options
1	Age	18 - 24
		25 - 34
		35 - 44
		>45
2	Educational Level	None
		Primary Level
		Lower Secondary Level
		Upper Secondary Level
		Diploma
		Bachelor's Degree
		Master's Degree
		Doctorate
		Other
3	Have you had any previous work experience	Yes
		No
4	If yes, for how long did you work before you started up your current business?	< 2 Years
		2 – 5 Years
		6 – 10 Years
		11 – 20 Years
		> 20 Year
5	Was your previous work experience relevant to your current business?	Yes
		No
6	Did any of your parents own a business?	Yes
		No
7	What is the educational	None

	level of your father?	Primary Level
		Lower Secondary Level
		Upper Secondary Level
		Diploma
		Bachelor's Degree
		Master's Degree
		Doctorate
		Other
8	What is the educational level of your mother?	None
		Primary Level
		Lower Secondary Level
		Upper Secondary Level
		Diploma
		Bachelor's Degree
		Master's Degree
		Doctorate
		Other
9	Legal status of the business	Enterprise
		LLP/PLT
		Sdn. Bhd
		Others
10	Type of the activity of the business	Education and training services
		Healthcare travel (health tourism)
		High value tourism activities such as eco-tourism
		Green Technology including renewable energy and energy conservation/efficiency
		Financial services (integrated Islamic finance)
		Creative industries
		ICT such as telecommunication and mobile services

		Waste management (e.g. recycling)
		R&D and design activities
		Regional operations such as Principal Hub (PH), Representative Office (RE) and Regional Office (RO)
		Others
11	Where is the business located?	Residential
		City Center
		Rural Area
		Shopping Complex
		Industrial Zone
		Business District
		Suburban
		Others
12	How would you describe the business?	Wholly family owned
		Partly family owned
		Privately owned
13	How long has the business been in operation?	1 – 2 Years
		3 – 5 Years
		> 5 Year
14	How many staff does the business employ?	0 – 5
		6 – 10
		11 – 15
		16 and above
15	What is the annual turnover of the business (in Ringgit Malaysia)?	0 – 50,000
		50,001 – 100,000
		100,001 – 500,000
		500.001 – 1,000,000
		> 1,000,000

3.9.3.2 Factors for Technology Adoption Readiness

The comprehensive questionnaires for technology adoption readiness have 79 questions and this study adopted them from Parasuraman (2000), which a five-point Likert scale, as shown in Table 3.5. Appendix G presents the actual version of the questions.

Table 3.5

Technology Adoption: Optimism, Innovative, Discomfort and Insecurity (Source: Parasuraman 2000)

How would you describe the success of your business?	
Optimism	
1.	Technology gives people more control over their daily lives
2.	Products and services that use the newest technologies are much more convenient to use
3.	You like the idea of doing business via computers because you are not limited to regular business hours
4.	You prefer to use the most advanced technology available
5.	You like computer programs that allow you to tailor things to fit your own needs
6.	Technology makes you more efficient in your occupation
7.	You find new technologies to be mentally stimulating
8	Technology gives you more freedom of mobility
9	Learning about technology can be as rewarding as the technology itself
10	You feel confident that machines will follow through with what you instructed

	them to do
Innovative	
1	Other people come to you for advice on new technologies
2	It seems your friends are learning more about the newest technologies than you are [reverse scored]
3	In general, you are among the first in your circle of friends to acquire new technology when it appears
4	You can usually figure out new high-tech products and services without help from others
5	You keep up with the latest technological developments in your areas of interest
6	You enjoy the challenge of figuring out high-tech gadgets
7	You find you have fewer problems than other people in making technology work for you
Discomfort	
1	Technical support lines are not helpful because they do not explain things in terms you understand
2	Sometimes, you think that technology systems are not designed for use by ordinary people
3	There is no such thing as a manual for a high-tech product or service that is written in plain language
4	When you get technical support from a provider of a high-tech product or service, you sometimes feel as if you are being taken advantage of by someone who

	knows more than you do
5	If you buy a high-tech product or service, you prefer to have the basic model over one with a lot of extra features
6	It is embarrassing when you have trouble with a high-tech gadget while people are watching
7	There should be caution in replacing important people-tasks with technology because new technology can breakdown or get disconnected
8	Many new technologies have health or safety risks that are not discovered until after people have used them
9	New technology makes it too easy for governments and companies to spy on people
10	Technology always seems to fail at the worst possible time
Insecurity	
1	You do not consider it safe giving out a credit card number over a computer
2	You do not consider it safe to do any kind of financial business online
3	You worry that information you send over the Internet will be seen by other people
4	You do not feel confident doing business with a place that can only be reached online
5	Any business transaction you do electronically should be confirmed later with something in writing
6	Whenever something gets automated, you need to check carefully that the

	machine or computer is not making mistakes
7	The human touch is very important when doing business with a company
8	When you call a business, you prefer to talk to a person rather than a machine
9	If you provide information to a machine or over the Internet, you can never be sure it really gets to right place

3.9.3.3 Technology Readiness and Business Innovation

The comprehensive questionnaires for technology readiness and business innovation contain 43 questions and adopted them from Parasuraman (2000), which a five-point Likert type of scale, as shown in Table 3.6. Appendix G presents the actual version of the questions.

Table 3.6

Technology Readiness and Business Innovation

Please estimate to what extent the following statements related to Product and Service (Technical) Innovations in your organization.	
1.	In new product and service introduction, our company is often first-to-market
2.	Our new products and services are often perceived as very novel by customers
3.	New products and services in our company often take us up against new competitors
4.	In comparison with competitors, our company has introduced more innovative products and services during past 5 years

5.	We constantly emphasize development of particular and patent products
6.	We manage to cope with market demands and develop new products quickly
7.	We continuously modify design of our products and rapidly enter new emerging markets
8.	Our firm manages to deliver special products flexibly according to customers' orders
9.	We continuously improve old products and raise quality of new products
Please estimate to what extent the following statements related to Process (Administrative) Innovation in your organization	
1.	Development of new channels for products and services offered by our corporation is an on-going process
2.	We deal with customers' suggestions or complaints urgently and with utmost care
3.	In marketing innovations (entering new markets, new pricing methods, new distribution methods, etc.) our company is better than competitors
4.	We constantly emphasize and introduce managerial innovations (e.g. computer-based administrative innovations, new employee reward/training schemes, new departments or project teams, etc.)
Please estimate to what extent the following statements related to Innovativeness (Innovation Culture) in your organization.	
1.	Innovation proposals are welcome in the organization
2.	Management actively seeks innovative ideas
3.	Innovation is perceived as too risky and is resisted

4.	People are not penalized for new ideas that do not work
5.	Program/Project managers promote and support innovative ideas, experimentation and creative processes
Listed below are some factors that may contribute to your business's success. How important you believe these factors are?	
1.	Education of the entrepreneur
2.	Previous work experience
3.	Location of the business
4.	Structure of the business
5.	Technology
6.	Efficient tax system
7.	Financial resources
8.	Satisfactory government support
9.	Information
10.	Good public infrastructure
11.	Good regulatory environment
12.	Network relations
13.	Customers
14.	Good functional competences
15.	Competitive advantage
16.	Good management competences
17.	Good entrepreneurial competences

18.	Suppliers
As an entrepreneur, to what extent you believe the following statements are important in order to ensure the success of your firm?	
1.	Experiment new different ways of running the business when new way of running the business is not successful
2.	Work hard
3.	Accomplish a lot at work
4.	Make high demands upon yourself when working
5.	Not to plan too far ahead since many things turn out to be a matter of good or bad fortune
6.	Opening up new directions through initiating new ideas
7.	Taking the risk of getting a new business venture off the ground
8.	The excitement of creating something new whose success depends on me

3.10 Data Collection

3.10.1 Data Collection Instrument

A questionnaire was chosen as a data collection instrument. A questionnaire is a written self-report form that is used to gather information from subjects. Information obtained using a questionnaire is similar to that obtained through an interview, however the questions are typically shorter (Burns & Grove 1993).

Data on respondents' understanding of technology adoption readiness and business model innovation was collected via questionnaires. The following factors influenced the decision to employ questionnaires:

i. By providing questionnaires to participants for completion and physically collecting them, they made sure there was a high response rate.
ii. They required less effort and time to implement.
iii. The completed questionnaires offered the possibility of anonymity because subject identities were not required.
iv. There was less room for bias because they were presented consistently.
v. The majority of the items in the questionnaires were closed, which made comparing responses to each item much easier

In addition to the aforementioned benefits, employing questionnaires has certain drawbacks. For instance, there is the issue of veracity and accuracy (Burns & Grove 1993). Because of how quickly people respond, vital information may be lost, and subjects may

not express their true feelings but rather respond in a way that suits this study.

3.10.2 Data Collection Procedure

The research design for this study mainly focuses on primary data collection through the deployment of a questionnaire survey. To ensure that adequate data is collected from all the regional locations stated in the survey, this study used electronic based survey form used via digital communication channels such as emails, WhatsApp and Telegram applications. This electronic based survey was answered by all women microbusiness owners and key decision makers of their companies. Questionnaires were personally distributed by the researcher to the respondents to complete. The data was collected within three months.

3.11 Pretesting the Questionnaire

A pre-test is a trial run of an instrument to identify potential issues. When utilising a questionnaire to gather data, it's crucial to make sure that the participants are aware of the expectations of them and that the questions and instructions are clear to them. Pre-testing with questionnaires is what this is known as (Polit & Hungler 1995). This study conducted a pre-test of the questionnaire on the experts, who are: two experts from the academic field, two experts from the industry, and one who matches the sampling criteria. Appendices A to E present their supportive feedback on the questionnaire of this study.

i. Two from the academic field (Appendix A and Appendix B);
ii. Two from the industries (Appendix C, and Appendix D); and
iii. One who matches the sampling criteria (Appendix E)

3.12 Pilot Study: Reliability and Validity

3.12.1 Validity

Validity is the extent to which an instrument measures what it is intended to measure (Polit & Hungler 1993). The degree to which an instrument accurately captures the relevant variables is known as content validity. To ensure content validity, questionnaires asked a wide range of questions on respondents' familiarity with the research's subject matter, including what is technology adoption, business model innovation, and technological preparedness (Polit & Hungler 1993).

The questions were developed using knowledge gleaned from the literature review to make sure they were representative of what the respondents understood about the subject subjects. The validity of the content was further enhanced by consistent question administration. The researcher personally gave each subject a questionnaire to complete. The questions were written in plain English for simplicity and understanding. Clear instructions were supplied to the participants, and those who couldn't read were offered assistance by this study to finish the surveys.

All respondents filled out the surveys while the researcher was present. This was done to stop participants from giving surveys to third parties to complete on their behalf. To verify their validity, the questionnaires were sent to a group of experts for pre-testing. In order to ensure that the sample was more representative, new questions were added. To enable a more helpful analysis of the data, several questions were clarified, and more pertinent answer options were introduced to closed-ended questions. Burns and Grove

(1993) have proposed this.

The data's external validity was guaranteed. Burns and Grove (1993) defined external validity as the extent to which study results can be extended beyond the sample size. Everyone who was approached to participate in the study filled out the questionnaires. Not a single person who declined to take part was reached. Therefore, it is acceptable to generalise the results to the entire population.

Finding respondents who are interested in participating in a study can be challenging, particularly if the study calls for a large time commitment or other level of participation from the subjects. If fewer people are willing to take part in a study, it is harder to justify extrapolating the results to the entire group. The study must be designed to minimise the financial requirements on participants in order to increase participation. For the purpose of assessing the risks to external validity, it should be disclosed how many participants were approached but chose not to participate in the study. As more people choose not to engage, external validity declines (Burns & Grove 1993).

In this setting, this study began by determining the questionnaire's content validity via an in-depth literature analysis to ensure that the questionnaire generated encompassed the research's topics. Additionally, the instruments were assessed by a team of academic and industry experts to confirm their content and face validity. Academic opinions were represented by three distinct panels comprised of professors and associate professors from the university. Table 3.7 explains these remarks.

Table 3.7

Remarks from the Experts

No	Comments	Academic	Industry
1	Language	Kindly use simple English in order to grasp the respondent's understanding of the questionnaire.	The English used was understandable and easy to read.
2	Question	Questions numbers 37 and 39 are confusing.	There are no issues with the question.

3.12.2 Reliability

Polit and Hungler (1993) assert that the degree to which an instrument consistently measures the property it is intended to measure. In essence, a pilot study with 45 female microentrepreneurs as the target respondents was undertaken prior to the actual fieldwork, and it showed consistency in responses. Reliability can be increased by reducing sources of measurement error, such as bias in data collecting. The surveys were only given out by the researcher, and standardising procedures such having all respondents have the same personal traits reduced data gathering bias.

3.12.3 Internal Consistency Reliability

A length model's inner consistency reliability is excellent, and every meeting's composite reliability (CR) exceeds the edge cost of 0.7. Table 3.8 shows that the CR for this inquiry varies from 0.811 to 0.942 for each assembly, which is more than the proposed

threshold cost of 0.7. It appears from the results that the constructs chosen for representation were those with the highest degree of internal consistency reliability.

Table 3.8

Composite Reliability

Variables	Sub-Variables	Reliability
Technology Adoption Readiness		0.910
	Optimism	0.912
	Innovative	0.942
	Discomfort	0.823
	Insecurity	0.867
Business Model Innovation		0.811
Technology Ready Women Microentrepreneur		0.901

3.13 Statistical Analysis

This study uses the SPSS for Windows software. This analytical software was used to assess and analyse the factor analysis, reliability analysis, descriptive analysis and regression analysis of the collected data.

3.13.1 Descriptive Statistics

Descriptive statistical analysis was used to analyse the characteristics of the data such as central tendency, distribution and variability. For example, this study aims to understand the tendency of respondents towards technology adoption readiness and how the data is distributed across the sampling size, as well as how it deviates from the normal distribution. The data was analysed using descriptive statistics like means, medians, modes, variants, range, and standard deviation as suggested by Sekaran (2016).

3.13.2 Factor Analysis

Multivariate data analysis is a collection of statistical models that evaluate patterns in multidimensional data while taking into account a number of advanced data factors. Multivariate models take into account more variables, allowing them to investigate more complicated phenomena and uncover more precise data patterns that can be extended to the real world (Zikmund et al. 2013). Previously, Lawley and Maxwell (1962) explained that factor analysis is a branch of multivariate analysis in which its technique is used to correlate and summarise information from a large number of variables, as a means to describing and examining the structure of the covariances and correlation matrices involved.

Therefore, this means that factor analysis is used to streamline and summarize the analysed data in order to establish construct validity (Sekaran & Bougie 2016).

3.13.3 Correlation Analysis

By examining the relationship between two metric variables, correlation analysis is used to disprove hypotheses and determine whether they are supported by the data. The correlations were constructed to evaluate the connections between respondents' organisational, ecosystem, and mindset preparation for business model innovation. The association between business model innovation and technology-ready microentrepreneurs was also determined through correlation calculations.

3.13.4 Regression Analysis

Zikmund et al. (2013) explained regression analysis seeks to determine if one or more independent variables can adequately explain the dependent variable. The relationship between the independent and dependent variables must be linear for regression analysis to be effective. Based on Cronbach (1971), it is also crucial to look for outliers, as regression analysis is sensitive to the impacts of outliers. Following the discovery of the variables' correlations, regression analysis is used to further investigate the relationship. For example, regression analysis was used to find out what effect mindset readiness has on business model innovation.

The Sobel test is used to determine whether a variable mediates the effect of an independent variable on the dependent variable, which is the outcome of interest. A significant test statistic shows that an independent variable has an indirect effect, such as

an effect that is entirely or partially mediated by another variable on the dependent variable. To do this, it is necessary to test the hypothesis that, after taking into account the influence of a potential mediator, there is no statistically significant difference between the total effect, such as the effect of a particular independent variable on the dependent variable, and the direct effect, such as the effect of that same independent variable on the dependent variable.

3.14 Summary

This chapter presents the methodology used in this study to fulfil all the objectives listed in the introductory chapter. Then, the following chapter presents the findings attained by this study.

CHAPTER FOUR
RESEARCH FINDINGS

4.1 Introduction

The empirical findings of this investigation are presented in this chapter. The statistical analysis presented in chapter three was used to conduct the analysis. As recommended by prior studies, this chapter follows the generally accepted reporting style of Pearson correlation and the kind of regression analysis (Hair et al. 2017). First, the size version's validity and reliability are evaluated. On the following subtopic, this study explains the structural assessment model that covers the latent construct, effect size, and the predictive structural model. This study reports the result of regression analysis that involves the mediating effect between the independent and dependent variables towards the end of this chapter.

4.2 Demographic Profile

Table 4.1 displays the profiles of the respondents who took part in this survey. An online survey technique was employed in the research to collect all the data for this study. The demographic profile pertaining to the women's microbusinesses displayed in Table 4.1. 27.6% (N = 116) of the women who took part in this study were between the ages of 35 and 44. For educational background, bachelor’s degree holders exhibit the highest number with 21.6% (N = 91) and the lowest was at the master’s degree level with 17.1% (N = 72).

The majority of respondents, which is 65.1% (N = 274) had prior work experience, while just 34.9% (N = 147) did not. The highest percentage for respondents' prior employment history is 26.8% (N = 113), which is based on the number of respondents. Next, 26.4% (N = 111) respond "Yes" to the question of whether they had prior work experience related to their current job, while 38.7% (N = 163) respond "No." Additionally, 12.6% (N = 53) have at least one parent who owns a business, and 87.4% (N = 368) indicate none of the parents own or are involved with any enterprises. With 23.3% (N = 98), upper secondary education made up the majority of the father's educational history, whereas for the mother, 22.1% (N = 93) of respondents had a master's degree.

In terms of the legal status of the business, enterprise has a 24.2% (N = 102) response rate, while LLP/PLT had the lowest (N = 98) response rate. Financial services (integrated Islamic finance) had the highest percentage (12.6%) (N = 53), followed by ICT (such as telecommunications and mobile services) with 10.9% (N = 46), and high-value tourist activities (such as eco-tourism) with 10.7% (N = 45). 12.8% (N = 54) of businesses are located in the city centre and retail centre, respectively. Among the 153 respondents, 36.3% possessed privately owned firms, compared to 134 respondents (31.8%) entirely and partially owned by their families (N = 134).

40.1% (N=169) of the respondents said they had been in business for more than five years. The company employs between 0 and 5 people, with the biggest percentage (55.3%) (N = 233). The business's yearly turnover was RM0–RM50,000 with 38.5% (N = 162) and RM100,001–RM500,000 with 21.6% (N = 91), respectively.

Table 4.1

Demographic Profile

Dimension	Criteria	Frequency	Percent (%)
Age	18 – 24	102	24.2
	25 – 34	98	23.3
	35 – 44	116	27.6
	>45	105	24.9
Educational Background	Lower Secondary Level	87	20.7
	Upper Secondary Level	88	20.9
	Diploma	83	19.7
	Bachelor's Degree	91	21.6
	Master's Degree	72	17.1
Have you had any previous work experience	Yes	274	65.1
	No	147	34.9
If yes, how long did you work before starting up your current business?	< 2 Years	113	26.8
	2 – 5 Years	32	7.6
	6 – 10 Years	36	8.6
	11 – 20 Years	55	13.1
	> 20 Year	38	9.0
	N/A	147	34.9
Was your previous work	Yes	111	26.4
	No	163	38.7

experience relevant to your current business?	N/A	147	34.9
Did any of your parents own a business?	Yes	53	12.6
	No	368	87.4
Educational Father	Lower Secondary Level	88	20.9
	Upper Secondary Level	98	23.3
	Diploma	87	20.7
	Bachelor's Degree	75	17.8
	Master's Degree	73	17.3
Educational Mother	Lower Secondary Level	78	18.5
	Upper Secondary Level	91	21.6
	Diploma	75	17.8
	Bachelor's Degree	74	20.0
	Master's Degree	93	22.1
The legal status of the business	Enterprise	102	24.2
	LLP/PLT	98	23.3
	Sdn. Bhd	108	25.7
	Others	113	26.8
Type of the activity of the	Education and training services	37	8.8
	Healthcare travel (health	41	9.7

business	tourism)		
	High-value tourism activities such as eco-tourism	45	10.7
	Green Technology including renewable energy and energy conservation/efficiency	28	6.7
	Financial services (integrated Islamic finance)	53	12.6
	Creative industries	36	8.6
	ICT such as telecommunication and mobile services	46	10.9
	Waste management (e.g. recycling)	36	8.6
	R&D and design activities	28	6.7
	Regional operations such as Principal Hub (PH), Representative Office (RE) and Regional Office (RO)	34	8.1
	Others	37	8.8
Where is the business located?	Residential	53	12.6
	City Center	54	12.8
	Rural Area	58	13.8

	Shopping Complex	54	12.8
	Industrial Zone	57	13.5
	Business District	40	9.5
	Suburban	49	11.6
	Others	56	13.3
How would you describe the business?	Wholly family owned	134	31.8
	Partly family owned	134	31.8
	Privately owned	153	36.3
How long has the business been in operation?	1 – 2 Years	122	29.0
	3 – 5 Years	130	30.9
	> 5 Year	169	40.1
How many staff does the business employ?	0 – 5	233	55.3
	6 – 10	188	44.7
What is the annual turnover of the business IRinggit Malaysia)?	0 – 50,000	162	38.5
	50,001 – 100,000	78	18.5
	100,001 – 500,000	91	21.6
	500.001 – 1,000,000	90	21.4

4.3 Normality Test

A normality test is a statistical procedure used to determine a data set's normal distribution. The primary criteria for assessing the normality of trials are the Kolmogorov-Smirnov and Shapiro-Wilk tests. The Kolmogorov-Smirnov test was used to evaluate normality when the sample size was more than 40, while the Shapiro-Wilk test was employed when the sample size was less than 40. The Kolmogorov-Smirnov test was utilised to establish the normality of data in this study since the sample size was 421 (> 40). A non-significant finding (p >.05) shows that the distribution is typical. The parametric test will be used for statistical analysis in this case. However, even if the significant values (p.05) are present, the distribution is still deemed normal if the two mean values compared (mean and 5% mean trimmed) are not significantly different, and the values of skewness and kurtosis are within the range of 1.

According to Table 4.2, none of the variables had statistically significant values (p > 0.05). Although all variables were not normally distributed, the discrepancies between the two mean values (mean and 5% mean trimmed) were not significant, and the level of skewness and kurtosis was within the range of 1. In conclusion, all data variables were assumed to be regularly distributed using the normality criteria.

Table 4.2

Normality Test

Kolmogorov-Smirnov							
	Statistic	df	Sig.	Mean	5% Trimmed mean	Skewness	Kurtosis
Optimism	.100	421	0.000	4.4751	4.4802	.361	.328
Innovation	.126	421	0.000	4.4863	4.4938	.453	.383
Discomfort	.075	421	0.000	2.7876	2.7894	.037	.121
Insecurity	.100	421	0.000	3.6545	3.6550	.063	.048
Business Model Innovation	.098	421	0.000	4.4889	4.4902	.145	.124
Technology Readiness Women Entrepreneur	.095	421	0.000	4.4901	4.4943	.437	.719

4.4 Common Method Variance

Additionally, the data demonstrates its potential for standard method variance. This study employed Harman's one-factor test, which has been used before (Tehseen, Ramayah, & Sajilan 2017). This test aims to investigate the unrotated factor solutions to ascertain the number of factors that contribute to the variation in the variables (Kock 2017). SPSS was used to analyse standard method variance. If the proportion is more than 50%, it may be skewed toward the data. The percentage difference is 19.308 as shown in Table 4.3, which has no impact on the statistics.

Table 4.3

Common Method Variance

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	1.158	19.308	19.308	1.158	19.308	19.308
2	1.113	18.551	37.859			
3	1.013	16.889	54.748			
4	1.004	16.739	71.487			
5	0.869	14.478	85.965			
6	0.842	14.035	100.00			

4.5 Descriptive Analysis

4.5.1 Research Objective 1: To Identify the Technology Adoption Readiness by Women Microentrepreneurs in Malaysia

Table 4.4 shows the descriptive statistics for the technology adoption readiness of women microentrepreneurs. The factor of innovation ranked first, with the highest mean and standard deviation (Mean = 4.49; SD =.278). This is followed by optimism (mean = 4.48; SD =.234), insecurity (mean = 3.65; SD =.308), and discomfort (mean = 2.79; SD =.323).

Table 4.4
Descriptive Analysis

Technology Adoption Readiness					
	N	Mean	Std. Deviation	Rank	Source
Innovation	421	4.49	.278	1	Heikkilä et al. (2018)
Optimism	421	4.48	.234	2	Parasuraman (2000)
Insecurity	421	3.65	.308	3	Kamble, Gunasekaran & Arha (2019)
Discomfort	421	2.79	.323	4	Parasuraman 2000)

4.6 Pearson Correlation Coefficient

4.6.1 Research Objective 2: To Examine the Relationship Between Technology Adoption Readiness, Business Model Innovation, and Technology Readiness of Women Microentrepreneurs in Malaysia

In Table 4.5, the data has been summarised accordingly, showing the correlation coefficient between the variables involved in this study. The first relationship amongst business model innovation and technology ready women microentrepreneurs was $r = 0.495$, $p < 0.01$. Conversely, the correlation between business model innovation and technology adoption readiness was $r = 0.577$, $p < 0.01$. Lastly, the relationship between technology adoption readiness and technology ready women microentrepreneurs was $r = 0.488$, $p < 0.01$. All variables have solid relationships and significant positive results based on these three relationships.

Table 4.5

Correlations Between Business Model Innovation, Technology Adoption Readiness and Technology Women Microentrepreneur

Business Model Innovation	1		
Technology Adoption Readiness	.577**	1	
Technology Women Microentrepreneur	.495**	.488**	1

** p<.01

4.7 Regression Analysis

4.7.1 Research Objective 3: To Investigate the Mediating Effects of Business Model Innovation Between the Technology Adoption Readiness and Technology Ready of Women Microentrepreneurs in Malaysia

Multiple regression analyses were conducted in order to evaluate the hypotheses. This statistical approach examines the connection between technology adoption readiness (independent variable) and technology ready women microentrepreneurs (dependent variable), as well as the mediators (business model innovation). A preliminary examination and discussion of the basic assumptions of regression were conducted before doing the actual regression analysis. In determining the existence of mediation, the correlation coefficients were compared. This was done to avoid any potential uncertainty caused by the hazards of correlation research, in which an unconsidered variable causes a significant association between two variables. There was a need to verify whether complete mediation had a place.

Basically, the complete mediation will happen if there is an effect of the mediating variable. In this study, the mediating variable is business model innovation, which will remain significant if the independent variable, technology adoption readiness, is under control (Baron & Kenny 1986). Apart from that, partial mediation will probably take charge if the relationship between the independent and dependent variables is significant with the intervening variable being controlled. This study shows that technology adoption readiness and business model innovation are significantly expected for technology ready women microentrepreneurs. In completing this analysis, some requirements need to be

complied with: Step 1, which is the controlled variable and the predicted variable, must be associated significantly. Step 2, the controlled and mediating variables, must be associated considerably.

On the other hand, Step 3 is the mediator, and the predicted variable must be associated considerably. Lastly, Step 4 is that the controlled variable must not affect the predicted variable when the mediator is kept constant or should become significantly smaller. In further analysis of the mediation effects, this study used the Multiple Regression Analysis and the Sobel Test.

4.7.1.1 Mediating Effects of the Business Model Innovation between Technology Adoption Readiness and Technology Ready Microentrepreneurs

Table 4.6 shows that technology adoption readiness is significant and positively associated with technology ready women microentrepreneurs, yielding = 0.020, $p < 0.001$. On the other hand, further analysis on the technology adoption readiness towards business model innovation revealed a significant and positive relationship with $\beta = 0.035$, $p < 0.001$. Apart from that, the business model innovation also showed a positive and meaningful relationship with the technology ready women microentrepreneurs, with a specific result of $\beta = 0.026$, $p < 0.001$. The previous analysis was satisfied and supported by the first three steps of mediation analysis. Additionally, multiple regressions were conducted to understand the mediating variable of business model innovation with the β weight for technology adoption readiness abridged from 0.020 to 0.019, which indicated the result's significance.

Consequently, business model innovation also plays an essential role as a partial mediator between the technology adoption readiness and technology ready women microentrepreneur. Further, this study conducted the Sobel Test, as shown in Figure 4.7, to check the mediation with the obtained results of $z = 0.4308$, $p < 0.001$ also significant. Hence, the result obtained rejected the hypothesis of H2, which was that business model innovation would mediate the relationship between technology adoption readiness and technology-ready women microentrepreneurs. Figure 4.1 illustrates this mediating effect.

The results of mediation analysis and Sobel test statistics which are shown in Figure 4.1, Table 4.6 and Table 4.7, it reveals that $p < 0.001$ so H2 is accepted, which indicates that technology adoption readiness mediates the association among the business model innovation and technology ready women microentrepreneur. This indicates that in maximizing the impact of technology adoption as a key growth contributor for women micro businesses in Malaysia, technology adoption readiness can be enhanced by providing business model innovation interventions for effective acceptance of technology ready women microentrepreneurs.

Table 4.6

Mediating Effects of the Business Model Innovation between Technology Adoption Readiness and Technology Ready Women Microentrepreneur: Result of Multiple Regression Analysis

Steps of Mediation	Unstandardized β	Standardized β	Value of t	Sigma	Standard Error
Step 1	0.020	0.020	0.401	0.000	0.049
Step 2	0.035	0.027	0.558	0.000	0.062
Step 3	0.026	0.033	0.672	0.000	0.039
Step 4	0.019	0.019	0.049	0.000	0.049

Table 4.7

Sobel Test Result

	Effects			Z Score	Level of Significance
	Direct	Indirect	Total		
Partial Mediation	0.035	0.026	0.00091	0.4308	0.001

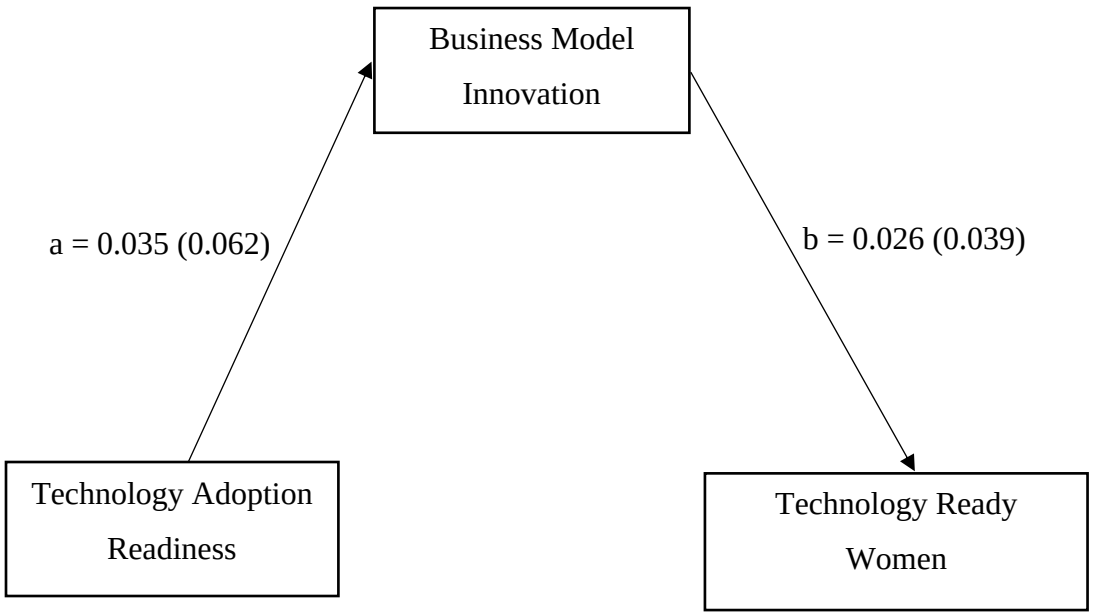

Figure 4.1 Mediating Effects of the Business Model Innovation between Technology Adoption Readiness and Technology Ready Women Microentrepreneur

4.7.1.2 Mediating Effects of the Business Model Innovation between Optimism and Technology Ready Women Microentrepreneur

Table 4.8 indicates that the optimism variable is connected and positively significant with technology ready women microentrepreneurs with a value of $\beta = 0.025$, $p < 0.001$. Meanwhile, the relationship between optimism and business model innovation was positive and significantly correlated with the value of $\beta = 0.082$, $p < 0.001$. Finally, with a value of 0.031, $p < 0.001$, business model innovation and technology ready women microentrepreneurs were positively connected and significant relationships. The results obtained before the analysis show that the mediation analysis was fulfilled. Further research was conducted with multiple regression analysis; business model innovation acts as a mediating variable. The results for the optimism variable were concentrated and significant, with a value of 0.025 to 0.028.

As a result, business model innovation has been shown to be a partial mediator of the relationship between optimism and technology-ready women microentrepreneurs. Furthermore, in checking the significance of mediation, the Sobel Test was tested with a result of $z = 0.7652$, $p < 0.001$. Table 4.9 shows this test. The answer proved that there would be no objection to H3.1, which was that business model innovation would mediate the relationship between optimism and technology ready women microentrepreneurs. Figure 4.2 illustrates this mediating effect.

The results of mediation analysis and Sobel test statistics which are shown in Figure 4.2, Table 4.8 and Table 4.9, it reveals that $p < 0.001$so H3.1 is accepted, which indicates that optimism mediates the association among the business model innovation

and technology ready women microentrepreneur. This indicates that in maximizing the impact of technology adoption as a key growth contributor for women micro businesses in Malaysia, technology adoption readiness can be enhanced by providing business model innovation interventions for effective acceptance of technology ready women microentrepreneurs.

Table 4.8

Mediating Effects of the Business Model Innovation between Optimism and Technology Ready Women Microentrepreneur: Multiple Regression Analysis Result

Steps of Mediation	Unstandardized β	Standardized β	Value of t	Sig.	Standard Error
Step 1	0.025	0.043	0.877	0.000	0.029
Step 2	0.082	0.110	2.265	0.000	0.036
Step 3	0.031	0.039	0.784	0.000	0.039
Step 4	0.028	0.047	0.958	0.000	0.029

Table 4.9

Sobel Test Result

	Effects			Z Score	Level of Significance
	Direct	Indirect	Total		
Partial Mediation	0.082	0.031	0.002542	0.7652	0.000

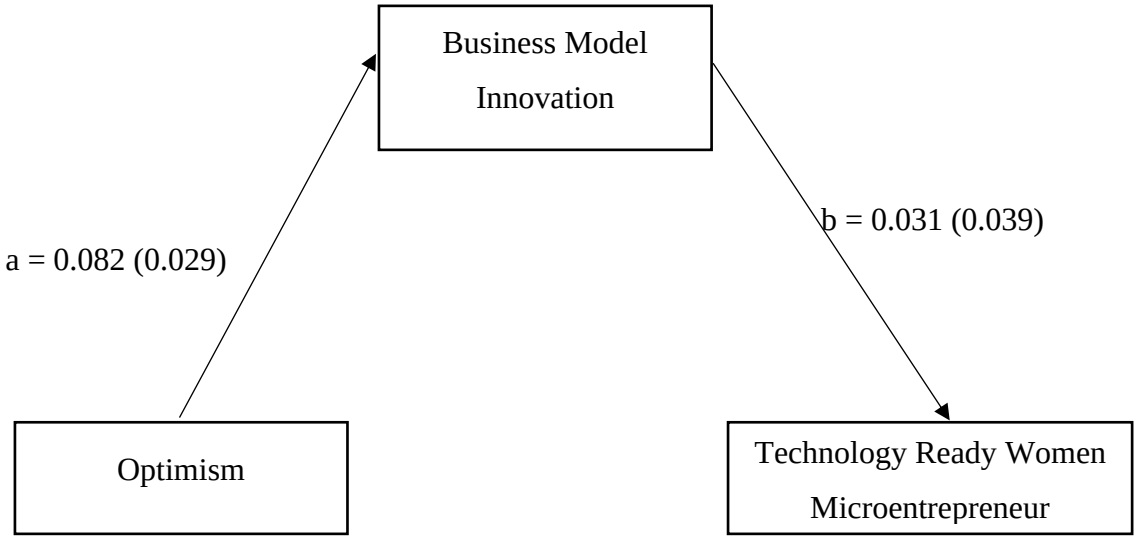

Figure 4.2 Mediating Effects of the Business Model Innovation between Optimism and Technology Ready Women Microentrepreneur

4.7.1.3 Mediating Effects of the Business Model Innovation between Discomfort and Technology Ready Women Microentrepreneur

Table 4.10 indicates discomfort is significant and positively associated with technology ready women microentrepreneurs, with the result of $\beta = 0.008$, $p < 0.001$. Moreover, discomfort and business model innovation also provide a positive and good relationship with the value of $\beta = 0.004$, $p < 0.001$. The business model innovation has also indicated a positive relationship with technology ready women microentrepreneurs, proven statistically significant with $\beta = 0.026$, $p < 0.001$. Before the results, it gives an insight into the three steps analysis of mediation that was fulfilled.

On the subsequent investigation, this study conducted the multiple regression analysis to see any effects on the mediating variable of business model innovation that brings to the β weight for discomfort was reduced from 0.008 and indicated the significant result. Therefore, the result obtained reveals that the business model innovation is a partial mediator with the discomfort and technology ready women microentrepreneur. Additionally, this study also conducted a Sobel Test, as shown in Table 4.11, to confirm the mediation significance whereby the result showed $z = 0.1831$, $p < 0.001$. Hence, there is no objection to rejecting the H3.2, which was business model innovation would mediate the relationship between discomfort and technology ready women microentrepreneur. Figure 4.3 illustrates this mediating effect.

The results of mediation analysis and Sobel test statistics which are shown in Figure 4.3, Table 4.10 and Table 4.11, it reveals that $p < 0.001$so H3.2 is accepted, which indicates the mediating effects of business model innovation between discomfort and technology ready women microentrepreneur. This indicates that in maximizing the impact of technology adoption as a key growth contributor for women micro businesses in Malaysia, technology adoption readiness can be enhanced by providing business model innovation interventions for effective acceptance of technology ready women microentrepreneurs.

Table 4.10

Mediating Effects of Business Model Innovation between Discomfort and Technology Ready Women Microentrepreneur: Multiple Regression Analysis Result

Steps of Mediation	Unstandardized β	Standardized β	Value of t	Sig.	Standard Error
Step 1	0.008	0.018	0.372	0.000	0.021
Step 2	0.004	0.007	0.138	0.000	0.026
Step 3	0.026	0.033	0.680	0.000	0.039
Step 4	0.008	0.018	0.367	0.000	0.021

Table 4.11

Sobel Test Result

	Effects			Z Score	Level of Significance
	Direct	Indirect	Total		
Partial Mediation	0.004	0.026	0.000104	0.1831	0.001

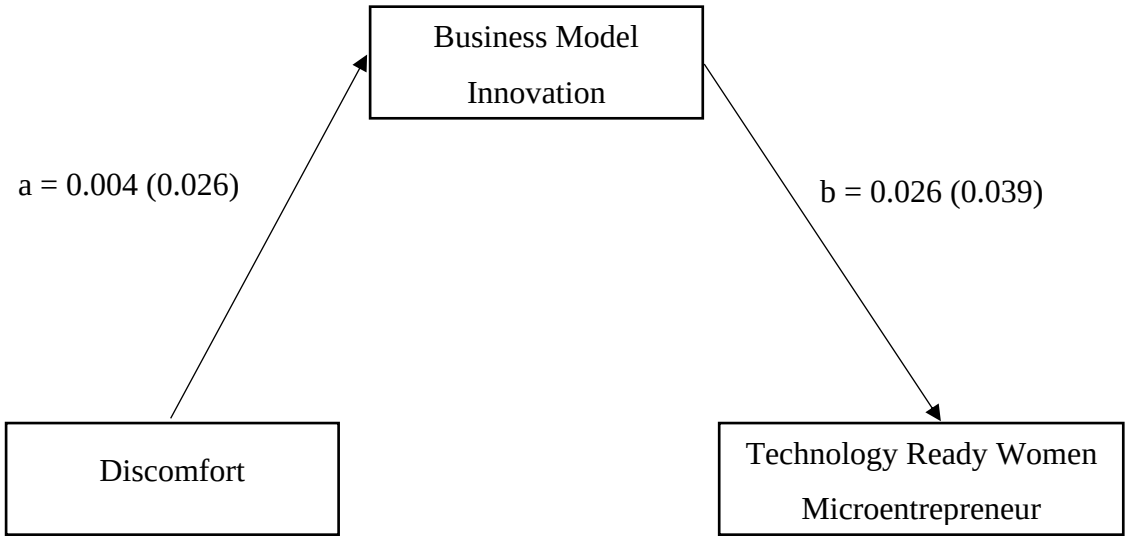

Figure 4.3 Mediating Effects of the Business Model Innovation between Discomfort and Technology Ready Women Microentrepreneur

4.7.1.4 Mediating Effects of the Business Model Innovation between Innovativeness and Technology Ready Women Microentrepreneur

Table 4.12 shows that the innovativeness and technology readiness of women was a positive and significant relationship, with a result of $\beta = 0.022$, $p < 0.001$. Besides, the connection between innovation and business model innovation shows that both variables have a positive and significant relationship with the result of $\beta = 0.026$, $p < 0.001$. Lastly, the business model innovation and technology ready women microentrepreneur gives a critical perspective whereby the results obtained were positive and significant relationships $\beta = 0.028$, $p < 0.001$. Hence, the mediation steps of the analysis were fulfilled, satisfied, and supported.

On the other hand, this study ran multiple regression to obtain the result of the mediating variable of business model innovation. The result of β weight for innovativeness was significantly reduced with a value of 0.022. Therefore, it shows that business model innovation reacts as a partial mediator between innovativeness and technology-ready women microentrepreneurs' relationships. The Sobel Test, as shown in Table 4.13, was also performed, yielding a statistically significant mediation $z = 0.5444$, $p < 0.001$. Therefore, it gives a solid reason not to reject H3.3, which was that business model innovation would mediate the relationship between innovativeness and technology-ready women microenterprises. Figure 4.4 illustrates this mediating effect.

The results of mediation analysis and Sobel test statistics which are shown in Figure 4.4, Table 4.12 and Table 4.13, it reveals that $p < 0.001$so H3.3 is accepted, which indicates that innovation mediates the association among the business model innovation and technology ready women microentrepreneur. This indicates that in maximizing the impact of technology adoption as a key growth contributor for women micro businesses in Malaysia, technology adoption readiness can be enhanced by providing business model innovation interventions for effective acceptance of technology ready women microentrepreneurs.

Table 4.12

Mediating Effects of the Business Model Innovation between Innovativeness and Technology Ready Women Microentrepreneur: Multiple Regression Analysis Results

Steps of Mediation	Unstandardized β	Standardized β	Value of t	Sig.	Standard Error
Step 1	0.022	0.043	0.891	0.000	0.024
Step 2	0.026	0.041	0.847	0.000	0.031
Step 3	0.028	0.035	0.720	0.000	0.039
Step 4	0.022	0.045	0.919	0.000	0.024

Table 4.13

Sobel Test Result

	Effects			Z Score	Level of Significance
	Direct	Indirect	Total		
Partial Mediation	0.026	0.028	0.000728	0.5454	0.000

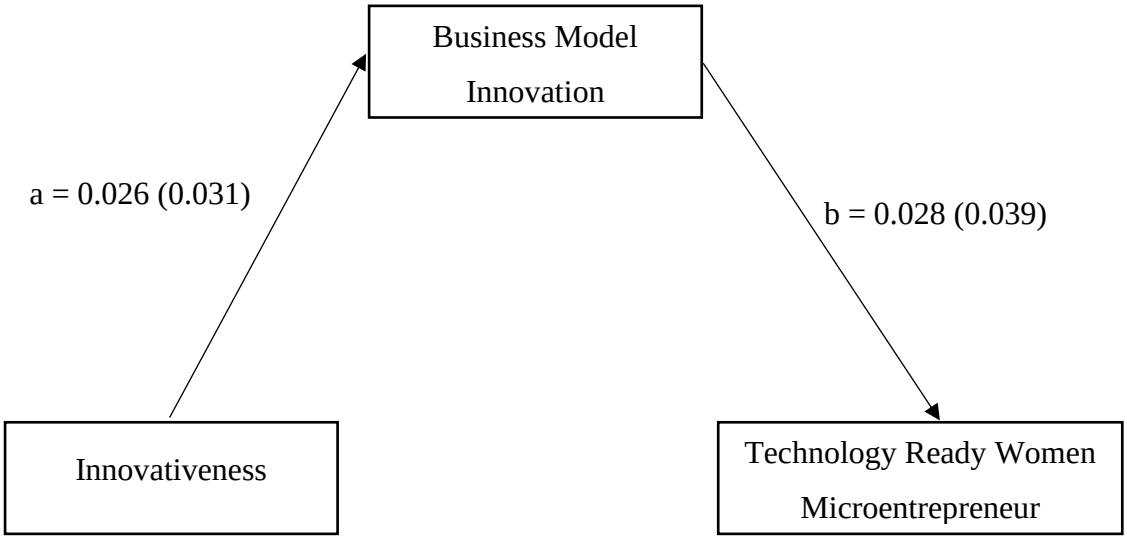

Figure 4.4 Mediating Effects of the Business Model Innovation between Innovativeness and Technology Ready Women Microentrepreneur

4.7.1.5 Mediating Effects of the Business Model Innovation between Insecurity and Technology Ready Women Microentrepreneur

Further analysis was run for Table 4.14, and it shows that the security and technology ready women microentrepreneur was positive and statistically significant with a result of $\beta = 0.028$, $p < 0.001$. On the other hand, insecurity also showed a positive and statistically significant trend toward business model innovation with a result of $\beta = 0.004$, $p < 0.001$. Lastly, the relationship between business model innovation and technology ready women microentrepreneurs was also positive and statistically significant ($\beta = 0.027$, $p < 0.001$). The mediation of three steps conducted proved satisfied and fulfilled.

This study conducted multiple regression to obtain the mediating effect of business model innovation that brought the result of β weight for insecurity was significantly reduced to 0.028. Thus, business model innovation serves as a partial intermediary between insecurity and technology-ready female microentrepreneurs. As shown in Figure 4.15, Sobel Test was tested to understand the significance of the mediation, whereby the result obtained was $z = 0.1759$, $p < 0.001$. The result obtained gives a significant reason not to reject H3.4, which was that business model innovation would mediate the relationship between insecurity and technology ready women microentrepreneurs. Figure 4.5 illustrates this mediating effect.

The results of mediation analysis and Sobel test statistics which are shown in Figure 4.5, Table 4.14 and Table 4.15, it reveals that $p < 0.001$so H3.4 is accepted, which indicates that insecurity mediates the association among the business model innovation and technology ready women microentrepreneur. This indicates that in maximizing the impact of technology adoption as a key growth contributor for women micro businesses in Malaysia, technology adoption readiness can be enhanced by providing business model innovation interventions for effective acceptance of technology ready women microentrepreneurs.

Table 4.14

Mediating Effects of the Business Model Innovation between Insecurity and Technology Ready Women Microentrepreneur: Multiple Regression Analysis Result

Steps of Mediation	Unstandardized β	Standardized β	Value of t	Sig.	Standard Error
Step 1	0.028	0.062	1.266	0.000	0.022
Step 2	0.004	0.007	0.150	0.000	0.028
Step 3	0.027	0.034	0.693	0.000	0.039
Step 4	0.028	0.062	1.270	0.000	0.022

Table 4.15

Sobel Test Result

	Effects			Z Score	Level of Significance
	Direct	Indirect	Total		
Partial Mediation	0.004	0.0270	0.000108	0.1759	0.000

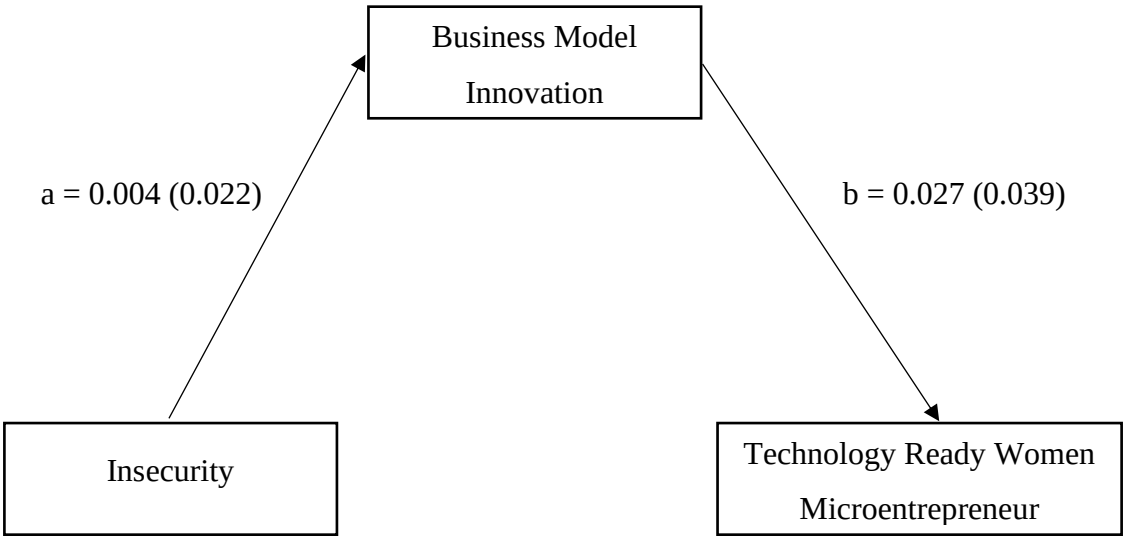

Figure 4.5 Mediating Effects of the Business Model Innovation between Insecurity and Technology Ready Women Microentrepreneur

4.8 Hypotheses Testing

The summary of hypotheses testing is tabulated in Table 4.16.

Table 4.16

Hypotheses Testing

Hypothesis Statement		Result
H_1	There is a positive relationship between technology adoption readiness and business model innovation.	Supported
H_2	There is a positive relationship between business model innovation and technology ready women micro business	Supported
H_3	Technology adoption readiness has positive and significant effects on the technology readiness of women microentrepreneurs with business model innovation as a mediator	Supported
$H_{3.1}$	Optimism has positive and significant effects on technology ready of women microentrepreneurs with business model innovation as a mediator	Supported
$H_{3.2}$	Innovativeness has positive and significant effects on technology ready of women microentrepreneurs with business model innovation as a mediator	Supported
$H_{3.3}$	Insecurity has positive and significant effects on technology ready of women microentrepreneurs with business model innovation as a mediator	Supported
$H_{3.4}$	Discomfort has positive and significant effects on technology ready of women microentrepreneurs with business model innovation as a mediator	Supported

4.9 Summary

In chapter four, the results have been analysed. This study was carried out on women's microbusinesses in Malaysia. A demographic profile aims to understand the identity of specific respondents better. It also seeks basic information about respondents that allows the survey to know where each person fits into the general population. This chapter shows how regression can estimate the research model and establish rigour in the data analysis technique. Based on the discussion, it is evident that this approach can effectively handle all complexity to provide robust solutions for a model.

Finally, this chapter confirmed the measurement and structural aspects of the study model by proving acceptable reliability and validity. The study also attempted to evaluate the links between the model's constructs and test four primary assumptions. This study used regression path modelling to estimate the research model's parameters to test all of these predictions. The result shows that three hypotheses were supported.

CHAPTER FIVE
DISCUSSION, IMPLICATIONS, & CONCLUSION

5.1 Introduction

This chapter, as the final chapter, discusses the findings for all research objectives. Then, this chapter discusses the implications of the study, followed by the limitations and suggestions for future research.

5.2 Discussion

Discussion of the findings is an integral part of the thesis since each discovery must be analysed and discovered from a different perspective and angle. This means that addressing the flaws identified in chapter one is essential. This study developed three objectives and the outcomes of these objectives are discussed in further detail in the following sub-sections.

5.2.1 Objective 1: To Identify the Technology Adoption Readiness by Women Microentrepreneurs in Malaysia

This study awaited a link to achieve the first objective when it came to determining characteristics of women microentrepreneurs' readiness for technology adoption in Malaysia. Technology is a requirement that is becoming more and more crucial in the corporate sector nowadays. As time goes on, business becomes more technological. Businesses depend on innovation to survive, and since technology paves the way for innovation, we could also say that businesses depend on technology to exist.

Technology is rapidly changing nearly every aspect of how organisations run, and it will keep doing so. The organisation must have a fundamental understanding of how technology affects the company (for better or worse) and how to take advantage of new advances in order to keep up with the rapidly evolving technological world. Technology is crucial in the corporate environment of today. The previous few decades have seen a rise in the speed, ease, and convenience of commercial transactions for all parties involved thanks to technological improvements. Technology improvements are changing many aspects of a company's operations, including accounting, data collection, logistics, and sales and marketing.

The use of technology in microbusinesses is still relatively new, undeveloped, and underutilised (Aquio 2018; Dubé et al. 2020; Osei-Assibey 2012). Thus, learning about the readiness for technology adoption will open the eyes of many people and stakeholders, who will benefit from this study's advantages and opportunities to create and innovate their business plans. The results show that optimism, followed by discomfort, inventiveness, and insecurity, was the most important factor driving women microentrepreneurs to use technology in their businesses.

This study was consistent with earlier research by Shaikh, Glavee-Geo, and Karjaluoto (2018) on female microentrepreneurs in the African region, which found that women's optimism was the most important component in their businesses. Although the rankings of the following variables vary, these viewpoints demonstrate that women are anticipating and positive about implementing technology in their businesses.

Furthermore, Tarhini et al. (2017) assert that optimism has a significant impact on women microentrepreneurs' readiness to utilise technology in their operations. In addition, women microentrepreneurs regarded the insecurity element as having little bearing on their readiness to adopt new technologies. Despite the fact that the research was done to progress technology in all directions, it nevertheless leaves women who believe it to be a great tool for business use feeling hazy and unsure.

It will take some time for people to gain confidence and think that technology will make things simpler because microbusinesses, by their very nature, work manually. Insecurity is a natural sense and emotion that exists for many people when dealing with technology, as stated by Susanto et al. (2020), who concluded that this is the case. It will surely take some time for technology to be adopted in women microentrepreneurs' firms because this setting emphasises how they naturally carry out and perform things manually. The worst-case scenario is that they will reject it. According to Gupta, Manrai, and Goel's (2019) hypothesis, understanding how ready a microbusiness is to use technology will gradually increase the security of doing so.

5.2.2 Objective 2: To Examine the Relationship Between Technology Adoption Readiness, Business Model Innovation and Technology Ready of Women Microentrepreneurs in Malaysia

The purpose of this research was to look into the relationships between business model innovation, technological readiness, and female microentrepreneurs in Malaysia. This is due to the fact that understanding how these factors are related will help to better understand how technology adoption affects women's microbusinesses in Malaysia. Therefore, based on the results from the previous chapter, it is clear that there was a positive relationship between these factors, and the hypothesis put forth is likewise validated.

According to an understanding of the factors influencing technology adoption readiness, security, discomfort, innovation, and optimism, business-wide adoption is the key to obtaining the greatest significant return. The organisation becomes more productive as a result of technology adoption. Since business model innovation has a beneficial effect, it offers concepts and viewpoints for female microentrepreneurs who are open to change. Since the functioning of many firms is dependent on the business plan, the incorporation of technology into the sector necessitates some innovation on the part of women microentrepreneurs.

The microbusiness will be able to operate more productively, quickly, and efficiently thanks to technological advancements if it was previously run by hiring staff. According to Planing (2018), identifying, characterising, and evaluating a business opportunity and/or an existing company while emphasising their feasibility from a

technological, economic, and financial standpoint are all critical components of a business plan. According to Hatton and Brown (2021), a business plan is a blueprint that specifies exactly what the entrepreneur aims to accomplish as well as the important variables that will affect their success. It must specify your current location, the desired destination, and the preferred mode of transportation, among other things.

5.2.3 Objective 3: Investigate the Mediating Effects of Business Model Innovation Between the Technology Adoption Readiness and Technology Ready of Women Microentrepreneur in Malaysia

This goal demonstrates how the mediating effects of business model innovation on technology adoption readiness and technological readiness of Malaysian women microentrepreneurs validated the hypothesis. The relationship between the independent (technology adoption readiness) and dependent variables is clarified in this study using the mediator variable, business model innovation (technology ready women entrepreneurs). It describes the relationship between two variables. A mediator could be a potential mechanism through which an independent variable could influence a dependent variable.

This study demonstrates that women microentrepreneurs were prepared to integrate technology into their firms, which undoubtedly changes the way business models are currently used and calls for additional creativity in the business plan. Women microentrepreneurs who are prepared for technology will be able to launch their firms using the new technology if they include technology in their business strategy. According to a study by Pervez, Abu, and Owee (2020), the organization's business plan would alter

if new items, apparatus, methods, or equipment were adopted and used by the company to meet the demands of the market.

The business plan itself needs to be revised at least once a year, depending on the performance of the company, in addition to women's readiness to adopt technology in their businesses (Al-Zoubi 2018). Considering that a business plan is a living document that tracks the performance of a company's operations, finances, hiring, turnover, and other factors in line with its goals and vision, Karpov (2017) asserts that business plans should be reviewed on a regular basis. As a result, by implementing technology in this way, it will help the organisation grow and flourish because smaller enterprises tend to rely more on employing manual processes to produce goods. With the utmost productivity and efficiency that can be produced, the stakeholders will significantly benefit (Nafukho et al. 2017).

5.3 Implications of the Study

The research implications are always included in this chapter to summarise the critical repercussions of the inquiry-based on the study's results. Three hypotheses were created following the research objectives, and additional action was taken after the regression analysis of all the data gathered. As a result, it establishes all the assumptions' validity and offers insight into the study's overall importance.

However, the findings cannot be generalised to the entire global community of women microentrepreneurs, which varies significantly in terms of demographics, geographic location, social structure, economic circumstances, and other factors. This is

because this study focused exclusively on Malaysian women microentrepreneurs in services sector. This study categorises the implications into two groups: theoretical and practical.

5.3.1 Theoretical Implications

As a theoretical contribution, this study identified the gaps. Firstly, the theories used in this study. This study decided to apply TAM within the entrepreneurship theory and the push and pull theory. Combining these two theories is still under-explored, especially in the context of women involved in micro entrepreneurship in Malaysia. This study intended to explore women's entrepreneurial development within the entrepreneurship theory in service industry because it is essential to examine to capture the spirit of female entrepreneurs in the developing world.

Anwar and Amber (2012) created a model for female entrepreneurs with a particular focus on female entrepreneurs in the developing world. Despite the model's comprehensive character in that it incorporated other dimensions of women entrepreneurship, Anwar and Amber (2012) did not directly mention the model's technology and innovation components. While Ewoh (2014) emphasised the significance of product innovation for female entrepreneurs as a vital success element that leads to growth, the article did not mention business model innovation.

On the other hand, because of the importance of technological growth for economic prosperity and human wellbeing, the scientific community has been interested in understanding technological development for a long time. According to Ende and

Dolfsma (2005), there are two main forces that influence technological change: push factors and pull factors. Push factors include elements that boost the supply of technical options by directly supporting scientific and technological advancements. Pull factors additionally include elements that influence the prices of particular technologies. The quantity of technical possibilities can be increased by push factors, which directly encourage scientific and technological advancements.

In general, previous investigations have found that different researchers studied these hypotheses independently, with the results not being complete. As a result, by integrating these fundamental ideas, this study takes the initiative to fill the gap discovered in this study, allowing readers to better comprehend the strategy used in this study. Furthermore, this study takes a unique approach to construct a model that employs technology adoption readiness, business model innovation, and technology-ready female microentrepreneurs. Previous studies have shown that very little research has been conducted, particularly in the Malaysian region.

Therefore, model development is critical in this study. This study builds a model that adds to the corpus of knowledge and requires a considerable leap. One of the significant theoretical implications of the present study is that the current study primarily focused on how the impact of technology adoption is a key growth contributor for women's microbusinesses in Malaysia. In this way, this study bridges the theoretical gap by analysing the technology adoption readiness by women microentrepreneurs; to examine the relationship between technology adoption readiness, business model innovation, and technology readiness by women microentrepreneurs; and lastly, to

examine the mediating effects of business model innovation between the technology adoption readiness and technology prepared by women microentrepreneurs.

5.3.2 Practical Implications

In dealing with the ever-changing business dynamics and creating new ways of performing work, technology has become one of the instruments utilised to boost an enterprise's competitiveness. Business dynamics are highly fluid, particularly for businesses with sufficient cash. In comparison to large-scale companies, microbusinesses lack adequate funds, preventing them from spending enormous sums on technology. The fast growth of technology and its growing ease of use should be sufficient to stimulate widespread adoption.

Today's reality cannot represent the conditions in which technology was extensively used in the operational operations of microbusinesses. This situation begs the issue of tracing microbusiness early preparedness to adopt the technology. Numerous examples demonstrate that industry type and firm size do not ensure the availability of appropriate technology as a tool for doing business. According to Guariglia et al. (2019), limited financial resources and difficulties obtaining funds from other sources will limit their investment level. Microbusinesses may cut their investment in technological development. Consequently, microbusinesses facing financial constraints and difficulties securing external finance may choose little technological adaption.

As a result, the current study offers valuable insights to many stakeholders, particularly the Ministry of Entrepreneur Development and Cooperatives, in order to help women microentrepreneurs succeed in their businesses. By knowing women's technology adoption readiness, a few approaches can be implemented by the ministry. Examples include better technology direction, guidance, and training to assist them in executing and catering to the current market through the use of social media, the transition from manual to automated procedures, and the adoption of cashless transactions, all of which will benefit them as entrepreneurs.

Apart from that, knowing the relationship between technology adoption readiness, business model innovation, and technology-ready women entrepreneurs will help the stakeholders understand the concept of introducing technology into the business of women microentrepreneurs. As discussed in the previous chapter, women microentrepreneurs lag far behind in terms of utilising technology, which disadvantages them in growing their businesses. This study proves that with the relationship between these variables; technology adoption readiness, business model innovation, and technology-ready women microentrepreneurs, they connect to ensure the women microentrepreneurs are prepared to embark on the technology adoption of their businesses.

Lastly, using business model innovation as a mediator also gives a better perspective to the stakeholders. Business model innovation is the process of creating new, distinctive ideas that support an organization’s financial sustainability, including its goal, as well as the methods for implementing those concepts. So, trainings are necessary to help the women involved in microbusinesses get ready with their business model to

expand their business to the next level. The primary objective of business model innovation is to create new income streams by increasing the value of goods and streamlining their delivery to consumers. As a result, developing business model innovation will assist women involved in microbusiness in looking at the big picture when integrating technology into their business plan.

5.4 Limitations and Suggestions for Future Research

In conducting research, this study needs to focus on the scope to fill the gaps found, either theoretical or practical. While doing this study, it significantly impacts this study to understand the range of women involved in microbusinesses and how they are ready to adopt technology in their businesses. This is an important measure of this study because it adds to the body of knowledge and can help practitioners and stakeholders execute and impose technology on the nature of microbusinesses. As this study is objectified within the female microentrepreneur, it provides a considerable advantage to the next researcher to conduct research with a different kind of gender to have an overall perspective on how different genders will embrace technology in their microbusinesses.

On the other hand, by adopting technology readiness towards technology-ready women microentrepreneurs, it gives some limitations to this study in examining the readiness of women microentrepreneurs in adopting technology. Hence, in future research, it will be significant if the study conducted in the area of technology effectiveness in investigating the adoption of technology in their microbusinesses has a significant impact on business expanding or growing. The following research will contribute to the body of knowledge plus provide additional information to the

stakeholders, especially in the ministry and policymakers, to amend and revise the existing policies to help women microenterprises be more successful.

Moreover, methodologically, this study has been conducted quantitatively to examine the connection between technology adoption readiness, business model innovation, and technology-ready women microentrepreneurs. Thus, for future research, it leaves enormous gaps in understanding women microentrepreneurs about their perspectives, opinions, emotions, and experiences while dealing with technology in their micro business. In the future, qualitative research will be conducted to ensure that the scope of women microentrepreneurs is discovered. Apart from researching in depth on key issues stated above, researchers also believe that there is a need for the development of a tailor-made business model canvas to assist women microentrepreneurs in strategizing for business innovation readiness in Malaysia.

5.5 Conclusion

This study has successfully identified technology adoption readiness by women microentrepreneurs (research objective 1) by examining the positive relationship between technology adoption readiness, business model innovation and technology ready of women microentrepreneurs in Malaysia (research objective 2), and by investigating the mediating effects of business model innovation between the technology adoption readiness and technology ready of women microentrepreneur in Malaysia (research objective 3).

Furthermore, the involvement of women microentrepreneurs in microbusiness does help the small unit of the family support the household overall. Their participation in businesses has been getting attention for the past several years, contributing to the country's economic growth. Thus, this study has proven significantly worth studying in that it shows that women microentrepreneurs are ready to adopt technology in their businesses. By using technology in their business, they will be able to change their business plan and come up with new ideas to keep up with technological changes and help their company reach the top.

Lastly, the adoption of technology advancement in business will expedite the business process to cater to the market's demand. Apart from that, the adoption of technology will ensure the business becomes more systematic in terms of financing, human resourcing, admin, operating, etc. The use of technology in business will enable female microentrepreneurs to be more creative and innovative in the market. The use of technology will assist them in positioning their business and developing a good image and brand for the customer to easily engage and buy at the same time.

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Appendix F: Letter of Consent

Date: 2 January 2021
Tarikh: 2 Januari 2021

SYED ALI HEZRI BIN SYED HISHAM
Westminster International College,
London School of Commerce (KL Campus),
University of Wales Trinity Saint David,
Level 15, Southern Tower, First Subang,
Jalan SS15/4G, 47500 Subang Jaya,
Selangor Darul Ehsan, MALAYSIA

Dear Sir Madam:
YB Cik / Puan:

RE: REQUEST FOR PERMISSION TO CONDUCT QUESTIONNAIRE SURVEY
PERKARA: PERMOHONAN KEBENARAN MENJALANKAN KAJISELIDIK

I, Syed Ali Hezri bin Syed Hisham, currently am undertaking a research on the **Impact of Technology Adoption As A Key Growth Contributor For Women Micro Businesses in Malaysia**.

Saya, Syed Ali Hezri bin Syed Hisham, pada masa ini mengambil bahagian didalam kajiselidik berkenaan ***Impak Penerapan Teknologi sebagai Penyumbang Pertumbuhan Utama Perniagaan Mikro Wanita di Malaysia.***

I would be humbled and greatly appreciate if you could complete this questionnaire survey based on your honest opinion. The questions posed have no right or wrong answers. Kindly make the effort to answer all of the questions outlined.

Saya dengan rasa rendah diri ingin memohon kerjasama pihak cik/puan untuk turut serta di dalam kaji selidik ini. Kaji selidik ini adalah berdasarkan fakta dan perkembangan semasa industry, dan oleh yang demikian tiada jawapan yang betul atau yang salah. Adalah diharapkan agar pihak cik/puan mengambil masa yang secukupnya bagi menjawab semua soalan yang telah disediakan di dalam kaji selidik ini.

I would like to assure you that all of the answers given will be kept with the strictest confidentially and will only be used for the purpose of this research. The research instrument formulated is known only to the researcher and will not be communicated or transferred to any third partied in any form.

Segala maklumat dan data yang dikumpul oleh pihak saya adalah tertakluk kepada akta PDPA dan segala maklumat yang dikongsi oleh pihak cik/puan adalah bagi tujuan penyelidikan akademik dan tidak akan dikongsi kepada mana-mana pihak ketiga.

Should you have any questions with regards to the questionnaire survey, or if you run into any problems and if you have any inquiries; please do not hesitate to contact me, with the details stated below.

Sekiranya pihak cik/puan memerlukan bantuan bagi melengkapkan kajiselidik ini, pihak cik/puan bolehlah menghubungi saya ke alamat emel dan nombor telefon seperti yang tertera di bawah.

I thank you in advance for your kind consideration and participation in this questionnaire survey. I hope that the results of this questionnaire survey will be able to assist many parties in the future.

Saya ingin mengucapkan ribuan terima kasih di atas kesudian pihak cik/puan mengambil bahagian di dalam kajiselidik ini. Saya berharap hasil dapatan kajiselidik ini dapat membantu banyak pihak pada masa hadapan.

Yours sincerely,

Yang benar,

SYED ALI HEZRI BIN SYED HISHAM
Doctor of Business Administration (DBA) Candidate
University of Wales Trinity Saint David
Student ID: 1713755
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Email address: syedhezri@gmail.com

Please take note that from time to time, I may request new personal data from you. By allowing me to have your personal data or continuing to communicate with me, I will assume that you are agreeable with the processing of the given data.

Appendix G: Questionnaires of the Study

Section A: Demographic

Please tick (√) in the space given & fill in the suitable information

No	Demographic	Criteria	
1	Age	18 - 24	
		25 - 34	
		35 - 44	
		>45	
2	Educational Level	None	
		Primary Level	
		Lower Secondary Level	
		Upper Secondary Level	
		Diploma	
		Bachelor's Degree	
		Master's Degree	
		Doctorate	
		Other	
3	Have you had any previous work experience	Yes	
		No	
4	If yes, for how long did	< 2 Years	

	you work before you started up your current business?	2 – 5 Years	
		6 – 10 Years	
		11 – 20 Years	
		> 20 Year	
5	Was your previous work experience relevant to your current business?	Yes	
		No	
6	Did any of your parents own a business?	Yes	
		No	
7	What is the educational level of your father?	None	
		Primary Level	
		Lower Secondary Level	
		Upper Secondary Level	
		Diploma	
		Bachelor's Degree	
		Master's Degree	
		Doctorate	
		Other	
8	What is the educational level of your mother?	None	
		Primary Level	
		Lower Secondary Level	
		Upper Secondary Level	

		Diploma	
		Bachelor's Degree	
		Master's Degree	
		Doctorate	
		Other	
9	Legal status of the business	Enterprise	
		LLP/PLT	
		Sdn. Bhd	
		Others	
10	Type of the activity of the business	Education and training services	
		Healthcare travel (health tourism)	
		High value tourism activities such as eco-tourism	
		Green Technology including renewable energy and energy conservation/efficiency	
		Financial services (integrated Islamic finance)	
		Creative industries	
		ICT such as telecommunication and mobile services	
		Waste management (e.g. recycling)	
		R&D and design activities	

		Regional operations such as Principal Hub (PH), Representative Office (RE) and Regional Office (RO)	
		Others	
11	Where is the business located?	Residential	
		City Center	
		Rural Area	
		Shopping Complex	
		Industrial Zone	
		Business District	
		Suburban	
		Others	
12	How would you describe the business?	Wholly family owned	
		Partly family owned	
		Privately owned	
13	How long has the business been in operation?	1 – 2 Years	
		3 – 5 Years	
		> 5 Year	
14	the business employ?	0 – 5	
		6 – 10	
		11 – 15	
		16 and above	
15	What is the annual turnover of the business (in Ringgit Malaysia)?	0 – 50,000	
		50,001 – 100,000	
		100,001 – 500,000	
		500.001 – 1,000,000	
		> 1,000,000	

Section B: Technology Adoption Readiness

Please Tick (√) In the Space Given & Fill in The Suitable Information

How would you describe the success of your business?		**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Optimism		**1**	**2**	**3**	**4**	**5**
1.	Technology gives people more control over their daily lives					
2.	Products and services that use the newest technologies are much more convenient to use					
3.	You like the idea of doing business via computers because you are not limited to regular business hours					
4.	You prefer to use the most advanced technology available					
5.	You like computer programs that allow you to tailor things to fit your own needs					

6.	Technology makes you more efficient in your occupation					
7.	You find new technologies to be mentally stimulating					
8	Technology gives you more freedom of mobility					
9	Learning about technology can be as rewarding as the technology itself					
10	You feel confident that machines will follow through with what you instructed them to do					

Innovative						
1	Other people come to you for advice on new technologies					
2	It seems your friends are learning more about the newest technologies than you are [reverse scored]					
3	In general, you are among the first in your circle of friends to acquire new technology when it appears					
4	You can usually figure out new high-tech products and services without help from others					
5	You keep up with the latest technological developments in your areas of interest					
6	You enjoy the challenge of figuring out high-tech gadgets					

7	You find you have fewer problems than other people in making technology work for you					
Discomfort						
1	Technical support lines are not helpful because they do not explain things in terms you understand					
2	Sometimes, you think that technology systems are not designed for use by ordinary people					
3	There is no such thing as a manual for a high-tech product or service that is written in plain language					
4	When you get technical support from a provider of a high-tech product or service, you sometimes feel as if you are being taken advantage of					

	by someone who knows more than you do					
5	If you buy a high-tech product or service, you prefer to have the basic model over one with a lot of extra features					
6	It is embarrassing when you have trouble with a high-tech gadget while people are watching					
7	There should be caution in replacing important people-tasks with technology because new technology can breakdown or get disconnected					
8	Many new technologies have health or safety risks that are not discovered until after people have used them					
9	New technology makes it too					

	easy for governments and companies to spy on people					
10	Technology always seems to fail at the worst possible time					
Insecurity						
1	You do not consider it safe giving out a credit card number over a computer					
2	You do not consider it safe to do any kind of financial business online					
3	You worry that information you send over the Internet will be seen by other people					
4	You do not feel confident doing business with a place that can only be reached online					
5	Any business transaction you do electronically should					

	be confirmed later with something in writing					
6	Whenever something gets automated, you need to check carefully that the machine or computer is not making mistakes					
7	The human touch is very important when doing business with a company					
8	When you call a business, you prefer to talk to a person rather than a machine					
9	If you provide information to a machine or over the Internet, you can never be sure it really gets to right place					

Section C: Business Model Innovation

Please tick (√) in the space given & fill in the suitable information

Please estimate to what extent the following statements related to Product and Service (Technical) Innovations in your organization.		**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
		1	**2**	**3**	**4**	**5**
1.	In new product and service introduction, our company is often first-to-market.					
2.	Our new products and services are often perceived as very novel by customers.					
3.	New products and services in our company often take us up against new competitors					
4.	In comparison with competitors, our company has introduced more					

	innovative products and services during past 5 years.					
5.	We constantly emphasize development of particular and patent products.					
6.	We manage to cope with market demands and develop new products quickly.					
7.	We continuously modify design of our products and rapidly enter new emerging markets.					
8.	Our firm manages to deliver special products flexibly according to customers' orders.					
9.	We continuously improve old products and raise quality of new products.					

Please estimate to what extent the following statements related to Process (Administrative) Innovation in your organization.		**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
		1	**2**	**3**	**4**	**5**
1	Development of new channels for products and services offered by our corporation is an on-going process.					
2	We deal with customers' suggestions or complaints urgently and with utmost care.					
3	In marketing innovations (entering new markets, new pricing methods, new distribution methods, etc.) our company is better than competitors.					

4	We constantly emphasize and introduce managerial innovations (e.g. computer-based administrative innovations, new employee reward/training schemes, new departments or project teams, etc.).					

Please estimate to what extent the following statements related to Innovativeness (Innovation Culture) in your organization.		**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
		1	**2**	**3**	**4**	**5**
1	Innovation proposals are welcome in the organization.					
2	Management actively seeks innovative ideas.					
3	Innovation is perceived as too risky and is resisted.					
4	People are not penalized for new ideas that do not work.					
5	Program/Project managers promote and support innovative ideas, experimentation and creative processes.					

Listed below are some factors that may contribute to your business's success. How important you believe these factors are?		**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
		1	**2**	**3**	**4**	**5**
1	Education of the entrepreneur					
2	Previous work experience					
3	Location of the business					
4	Structure of the business					
5	Technology					
6	Efficient tax system					
7	Financial resources					
8	Satisfactory government support					
9	Information					
10	Good public infrastructure					
11	Good regulatory environment					
12	Network relations					
13	Customers					

14	Good functional competences					
15	Competitive advantage					
16	Good management competences					
17	Good entrepreneurial competences					
18	Suppliers					

As an entrepreneur, to what extent you believe the following statements are important in order to ensure the success of your firm?		**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
		1	**2**	**3**	**4**	**5**
1	Experiment new different ways of running the business when new way of running the business is not successful.					
2	Work hard.					
3	Accomplish a lot at work.					
4	Make high demands upon yourself when working					
5	Not to plan too far ahead since many things turn out to be a matter of good or bad fortune.					
6	Opening up new directions through initiating new ideas.					

7	Taking the risk of getting a new business venture off the ground.					
8	The excitement of creating something new whose success depends on me.					